

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 Loam (Mountain big sagebrush)

SITE NUMBER: 047CY310UT

MLRA: E47C

Original Site Description: Author: GWL, LLR

Date: 03/11/1992

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: Loam, Very Fine Sandy Loam, Silt Loam or Sandy Loam

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

Subsurface Textures:

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

Geologic Parent Materials: Alluvium and Residuum from Sandstone and Shale

Moisture Regime: Ustic

Temperature Regime: Frigid

Runoff: Low

Permeability(min-max):

Drainage Class(min-max): Well Drained

Water Erosion Hazard: Slight

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): 0.14-0.19

Major Soils Associated With This Site:

Soil Survey Area: 047

Morval L, Dry 3-15%

Diagulch L, Dry 3-15%

Creered SiL, 2-8%

Boxwell Family L, 3-8%, 8-15%

Curcreek VFSL, 4-12%

Rockinchair SL, 2-5%

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 area is mountain big sagebrush and needleandthread. The composition by air-dry weight is approximately 60 percent grasses, 10 percent forbs, and 30 percent shrubs

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
Needleandthread	HECO26		165	220	15	20
Western wheatgrass	PASM		55	110	5	10
Nevada bluegrass	PONE3		55	110	5	10
Indian ricegrass	ACHY	1	33	55	3	5
Prairie junegrass	KOMA	1	33	55	3	5
Geyer sedge	CAGE2	1	33	55	3	5
Bottlebrush squirreltail	ELEL5	1	33	55	3	5
Salina wildrye	ELSAS	1	33	55	3	5
Letterman needlegrass	ACLE9	1	33	55	3	5
Bluebunch wheatgrass	PSSP6	1	33	55	3	5
Other perennial grasses	PPGG	1	220	275	20	25
Other annual grasses	AAGG	1	220	275	20	25

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Scarlet globemallow	SPCO	2	11	33	1	3
Spurred lupine	LUCAC3	2	11	33	1	3
Heartleaf arnica	ARCO9	2	11	33	1	3
Lesser rushy milkvetch	ASCO12	2	11	33	1	3
Eaton fleabane	EREA	2	11	33	1	3
Common yarrow	ACMI2	2	11	33	1	3
Longleaf phlox	PHLO2	2	11	33	1	3
Low beardtongue	PEHU	2	11	33	1	3
Little leaf pussytoes	ANMI3	2	11	33	1	3
Carpet phlox	PHHO	2	11	33	1	3
Tapertip onion	ALAC4	2	11	33	1	3
Hairy balsamroot	BAHOH	2	11	33	1	3
Silverleaf milkvetch	ASAR4	2	11	33	1	3
Other perennial forbs	PPFF	2	110	165	10	15
Other annual forbs	AAFF	2	110	165	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		165	220	15	20
Antelope bitterbrush	PUTR2		55	110	5	10
Winterfat	EULA5	1	11	33	1	3
Slenderbush eriogonum	ERMI4	1	11	33	1	3
Mountain low rabbitbrush	CHViL4	1	11	33	1	3
Broom snakeweed	GUSA2	1	11	33	1	3
Mountain snowberry	SYOR2	1	11	33	1	3
Utah serviceberry	AMUT	1	11	33	1	3
Central pricklypear	OPPO	1	11	33	1	3
Other shrubs	SSSS	1	55	110	5	10

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	1200	1300
Average Year	1000	1100
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)	40	2	20
Forbs (perennial)	5	1	5
Shrubs	15	4	10
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

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As this site deteriorates due to livestock grazing pressure perennial grasses and bitterbrush decrease while mountain big sagebrush and western wheatgrass increase. Fire will eliminate or reduce mountain big sagebrush, and bitterbrush. Grasses, particularly western wheatgrass, 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	5	15	40	20	10	5	5	0	0	0
Name	PNC											
ID Number	UT3101											
Description	Excellent Condition											

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Percent Growth	0	0	0	10	40	35	5	5	5	0	0	0
Name	Good Condition No. 1											
ID Number	UT3102											
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

047CY336UT

Upland Stony Loam (Mountain big sagebrush)

047CY335UT

Upland Stony 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

This site provides grazing for cattle and sheep in spring and fall.

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

The site offers good habitat for many species of wildlife.

b. List of Potential Species Present

Wildlife species using this site include sage grouse, rabbit, coyote, 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 offers aesthetic color and natural beauty in the growing season and in the fall.

4. Wood Products

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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: Morval L, 3-15% — fine-loamy, mixed, Aridic Argiborolls

Type Location: NE $\frac{1}{4}$, NW $\frac{1}{4}$, NW $\frac{1}{4}$; Section 35, Township 2S, Range 23E

General Legal Description:

Field Office Site Location

Roosevelt

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: 047C Ecological Site: Upland Loam (047CY310UT) Mountain big sagebrush, Needleandthread, Western wheatgrass, 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 5 to 25% 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): 80 to 90% of this site should have an erosion rating of 5 or 6. 10 to 20% 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 4 to 6 inches. Structure varies from fine granular thru medium subangular blocky and prismatic. Color varies from brown (10YR4/3) to dark brown (7.5YR4/2). There is mollic epipedon extending to about 9 inches.

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.

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: Mountain big sagebrush, Needleandthread; Sub-dominants: Western wheatgrass, Nevada bluegrass, Bitterbrush. The perennial bunchgrass/non-sprouting shrub functional 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): 1000 - 1100 #/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, Snakeweed, Western wheatgrass & Annual forbs.

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