

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 (Wyoming big sagebrush)

SITE NUMBER: 047AY338UT

MLRA: E47

Original Site Description: Author:

Date: 01/28/1992

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: 60 inches

Surface Textures: Very Dark Grayish Brown or Dark Brown Loamy Surface

Layers; Gravelly, Cobbly or Stony

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

Subsurface Textures: Moderately Coarse, Medium or Moderately Fine

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

Geologic Parent Materials: Sandstone, Shale, Limestone, Quartzite and Various
Igneous Parent Rocks

Moisture Regime:

Temperature Regime:

Runoff: Little

Permeability(min-max):

Drainage Class(min-max): Well Drained

Water Erosion Hazard: Slight to None

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: Neutral to Alkaline

Available Water Capacity (inches):

Major Soils Associated With This Site:

Soil Survey Area: 622

Cutoff Family GRV-L, 25-50%

Bezzant C, CBV-L, 6-45%

Dennot CBV-L, 15-35%

Holmes GR-L, CBV-SL, 0-3%

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 55 percent perennial grasses, 15 percent forbs and 30 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		190	237.5	20	25
Indian ricegrass	ACHY		47.5	95	5	10
Needleandthread	HECO26		27.5	47.5	3	5
Nevada bluegrass	PONE3		27.5	47.5	3	5
Bottlebrush squirreltail	ELEL5	1	9.5	19	1	2
Letterman needlegrass	ACLE9	1	9.5	19	1	2
Bulbous oniongrass	MEBU	1	9.5	19	1	2
Great basin wildrye	LECI4	1	9.5	19	1	2
Sandberg bluegrass	POSE	1	9.5	19	1	2
Other perennial grasses	PPGG	1	9.5	19	1	2
Other annual grasses	AAGG	1	9.5	19	1	2

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Western mountain aster	ASOC	2	9.5	28.5	1	3
Eaton fleabane	EREA	2	9.5	28.5	1	3
Shortstem wild buckwheat	ERBR5	2	9.5	28.5	1	3
Louisiana wormwood	ARLU	2	9.5	28.5	1	3
Silverleaf milkvetch	ASAR4	2	9.5	28.5	1	3
Spurred lupine	LUCAC3	2	9.5	28.5	1	3
Low beardtongue	PEHU	2	9.5	28.5	1	3
Longleaf phlox	PHLO2	2	9.5	28.5	1	3
Longleaf hawksbeard	CRAC2	2	9.5	28.5	1	3
Arrowleaf balsamroot	BASA3	2	9.5	28.5	1	3
Lobeleaf groundsel	SEMU3	2	9.5	28.5	1	3
Tufted evening primrose	OECE2	2	9.5	28.5	1	3
Bonneville peavine	LABR	2	9.5	28.5	1	3
Other perennial forbs	PPFF	2	9.5	28.5	1	3
Other annual forbs	AAFF	2	9.5	28.5	1	3

Shrubs/Vines, %

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Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Wyoming big sagebrush	ARTRW8		95	190	10	20
Bitterbrush	PUTR2		47.5	95	5	10
Spineless horsebrush	TECA2	3	9.5	28.5	1	3
Broom snakeweed	GUSA2	3	9.5	28.5	1	3
Stickyleaf low rabbitbrush	CHVIV4	3	9.5	28.5	1	3
Rubber rabbitbrush	ERNA10	3	9.5	28.5	1	3
Black sagebrush	ARNO4	3	9.5	28.5	1	3
Slender wild buckwheat	ERMI4	3	9.5	28.5	1	3
Mountain snowberry	SYOR2	3	9.5	28.5	1	3
Creeping Oregon grape	MARE11	3	9.5	28.5	1	3
Shadscale	ATCO	3	9.5	28.5	1	3
Birchleaf mountainmahogany	CEMO2	3	9.5	28.5	1	3
Saskatoon seviceberry	AMAL2	3	9.5	28.5	1	3
Other shrubs	SSSS	3	9.5	28.5	1	3

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	1100	1200
Average Year	850	950
Unfavorable Year	600	700

4. Ground Cover and Structure

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a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	30	2	10
Forbs (perennial)	10	1	5
Shrubs	30	3	10
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

Species not a part of this climax that are most likely to invade if climax plants deteriorate are cheatgrass, annual forbs, ragweed, tarweed, pinyon pine and Utah juniper. When excessive grazing occurs, big sagebrush, low sagebrush and rubber rabbitbrush will increase and may become the dominant plants.

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	UT3381											
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											
ID Number	UT3382											
Description	Bluegrass, Forbs and Big Sagebrush											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

047AY308UT

Upland Loam (Basin big sagebrush)

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047AY325UT
 Upland Shallow Loam (Black sagebrush)

047AY308UT
 Upland Loam (Basin big sagebrush)

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 produces mostly grasses but has a wide variety of species of grasses, forbs and shrubs and therefore produces a fairly nutritious, balanced feed for cattle, sheep and horses for spring, summer 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

They are poor for openland habitat, fair for woodland habitat, very poor for wetland habitat and fair for rangeland habitat.

b. List of Potential Species Present

Species which are found at least part of the year are deer, antelope, rabbits, cottontail, sage grouse, coyote, wildcat, badger, snakes, hawks, owls, quails, mourning dove, songbirds and small mammals.

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

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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 to good aesthetic appeal and natural beauty. A large variety of forbs and shrubs provide varied colored blossoms through most of the spring, summer and fall. It is fair for camping, hiking and picnicking from a vegetative standpoint. Hunting is fair for deer, rabbits and upland game.

4. Wood Products

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: Bezzant CB-L, CBV-L, 6-45% — loamy-skeletal, mixed, frigid Typic Calcixerolls

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Type Location: NW ¼; NW ¼; SE ¼; Section 7, Township 2N, Range 5E

General Legal Description:

Field Office Site Location

Logan

Murray

Provo

Price

Richfield

Data Collected and References

Sampling Source	Number of Records	Range Similarity Index			
		> 76%	51-75%	26-50%	0-25%
NRCS - ECS - 417	9				
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: 6/23/04 MLRA: 047A Ecological Site: Upland Stony Loam (047AY338UT) Wyoming big sagebrush, Bluebunch 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 - 25%. (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.

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 2 to 5 inches. Structure is fine granular. Color varies from dark grayish brown (10YR4/2) to dark reddish brown (5YR3/4). Soil surface organic depth varies from orhric epipedons 5 inches deep to mollic epipedons 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 bedrock at about 35 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 forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Bluebunch wheatgrass & Wyoming big sagebrush; Sub-dominants: Needleandthread, Indian ricegrass, 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 (15-20%) and depth (.50-.75 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 850 - 950 #/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.