

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 (Basin big sagebrush)

SITE NUMBER: 047AY308UT

MLRA: E47

Original Site Description: Author: DLT, DJS

Date: 01/23/1992

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: 60 inches

Surface Textures: Loam and Silt Loam

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

Subsurface Textures:

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

Geologic Parent Materials:

Moisture Regime:

Temperature Regime:

Runoff: Medium

Permeability(min-max):

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): 7-9

Major Soils Associated With This Site:

Soil Survey Area: 613

Richsum Silt Loam, 4-50%

Clegg Loam & CB-L, 1-25%

Eastcan Loam, 0-3%

Redola Loam, 0-2%

Watkins Ridge Loam, 2-35%

Brownlee Loam, 0-6%

Phoebe Fine-SL, 0-3%

Stoda 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 is composed of about 65 percent grasses, 15 percent forbs, and 20 percent shrubs by air-dry weight. The general appearance is grass with scattered 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
Bluebunch wheatgrass	PSSP6	0	375	450	25	30
Needleandthread	HECO26	0	75	150	5	10
Indian ricegrass	ACHY	0	75	150	5	10
Great basin wildrye	LECI4	0	75	150	5	10
Western wheatgrass	PASM	1	15	45	1	3
Bottlebrush squirreltail	ELEL5	1	15	45	1	3
Nevada bluegrass	PONE3	1	15	45	1	3
Muttongrass	POFE	1	15	45	1	3
Prairie junegrass	KOMA	1	15	45	1	3
Other perennial grasses	PPGG	1	75	150	5	10
Other annual grasses	AAGG	1	75	150	5	10

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Western aster	ASOC	2	15	45	1	3
Longleaf hawksbeard	CRAC2	2	15	45	1	3
Louisiana wormwood	ARLUL2	2	15	45	1	3
Spurred lupine	LUCA3	2	15	45	1	3
Low beardtongue	PEHU	2	15	45	1	3
Longleaf phlox	PHLO2	2	15	45	1	3
Common yarrow	ACMI2	2	15	45	1	3
Silverleaf milkvetch	ARAR4	2	15	45	1	3
White stoneseed	LIRU4	2	15	45	1	3
Eaton fleabane	EREA	2	15	45	1	3
Shortstem wild buckwheat	ERBR5	2	15	45	1	3
Lobeleaf groundsel	SEMU3	2	15	45	1	3
Rocky mountain dwarfsunflower	HEUN	2	15	45	1	3
Dustymaiden	CHDO	2	15	45	1	3
Arrowleaf balsamroot	BASA3	2	15	45	1	3
Thickleaf peavine	LALA3	2	15	45	1	3
Meadow thistle	CISC2	2	15	45	1	3
Other perennial forbs	PPFF	2	75	150	5	10
Other annual forbs	AAFF	2	75	150	5	10

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Basin big sagebrush	ARTRV		150	300	10	20
Bitterbrush	PUTR2		75	150	5	10
Creeping Oregon grape	MARE11	4	15	30	1	2
Spineless horsebrush	TECA2	4	15	30	1	2
Stickyleaf low rabbitbrush	CHVI4	4	15	30	1	2
Winterfat	KRLA2	4	15	30	1	2
Other shrubs	SSSS	4	45	75	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	1600	2000
Average Year	1200	1500
Unfavorable Year	900	1000

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	50	1.5	10
Forbs (perennial)	10	1	5
Shrubs	25	3	10
Trees			
Cryptogams			

b. Other

Litter	
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Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As this site deteriorates big sagebrush, rubber rabbitbrush, snakeweed and low rabbitbrush increase. In poor condition, almost pure stands of these species may occur with strong invasion of cheatgrass and Russian thistle in the understory.

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	UT3081											
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	UT3082											
Description	Bluegrass, Big sagebrush											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

047AY301UT
 Upland Clay Loam (Mountain 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 is valuable for use by sheep, cattle, and horses. Due to elevation position and plant growing conditions, its best use is by livestock in the spring and fall. In some locations, it is used as summer range.

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 is fair to poor potential for openland habitat, good to fair potential for woodland habitat, very poor potential for wetland habitat and good to fair potential for rangeland habitat. This site is extremely valuable for wildlife habitat because of a variety and abundance of grasses and relatively high abundance of forbs and shrubs within the site. It is also adjacent to other sites that are high in value for wildlife habitat.

b. List of Potential Species Present

This site is used by deer as a winter feeding area especially where Big sagebrush is abundant when in fair and poor condition. This site provides food and cover at least part of the year for quail, Hungarian partridge, chukars, sage grouse, song birds, cottontail rabbit, pigmy rabbit, jack rabbit, mule deer, elk, coyotes, golden eagle, bald eagle and hawks.

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 to good aesthetic appeal and natural beauty. It has a relatively large number of forbs and several shrubs, which have flowers in bloom from early spring to mid-summer. It has little value for screening

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because of the low growing nature of the plants. It has only fair to poor value for camping and picnicking.

Hunting is good for upland birds, jack rabbits, pigmy rabbits, cottontail, but poor hunting for mule deer.

Snowmobiling is a good opportunity on this site. Fishing opportunities are excellent on streams, lakes, and reservoirs in and adjacent to this site.

4. Wood Products

Basin big sagebrush is used for firewood for campfires especially as it increases when the climax plant community becomes depleted. No other woodland values exist.

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah

County:

Latitude:

Longitude:

Modal Soil: Richsum SIL 4-50% — fine-loamy, mixed, frigid Calcixerollic Xerochrepts

Type Location: NW ¼, NW ¼, SE ¼, Section 27, Township 5N, Range 7E

General Legal Description:

Field Office Site Location

Logan

Provo

Cedar City

Murray

Price

Richfield

Data Collected and References

Sampling Source	Number of Records	Range Similarity Index			
		> 76%	51-75%	26-50%	0-25%
NRCS - ECS - 417	11				

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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: 6/23/04 MLRA: 047A Ecological Site: Upland Loam (047AY308UT) Bluebunch wheatgrass, Needleandthread, Basin 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): 30 - 40%.

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 10 inches. Structure varies from fine granular to medium platy. Color varies from dark grayish brown (10YR4/2) to dark brown (7.5YR3/3). There is an orhric pipepedon to 14 inches deep and organic matter runs 1 to 4%.

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.

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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 increase in clay content at about 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: Bluebunch wheatgrass & Basin 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 (20-25%) and depth (.75-1.25 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 1200 - 1500 #/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.