

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: 025XY310UT

MLRA: 025

Original Site Description: Author: GBB

Date: 01/15/1985

Revised Site Description: Author: GBB

Date: 02/09/1994

Approved by: Title: State Range Cons.

Signed: Pat Shaver

Date: 04/25/1994

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: Moderately Fine and Fine Textured

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

Subsurface Textures: Accumulation of Clay and Carbonates

Subsurface Fragments(<=3" % vol, >3" % vol): <15%

Geologic Parent Materials: Alluvium & Colluvium from Mixed Sedimentary Rock

Moisture Regime:

Temperature Regime:

Runoff:

Permeability(min-max): Moderately Slow

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): 9-11

Major Soils Associated With This Site:

Soil Survey Area: 601

Koosharem SiL Ant Flat

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

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1. Potential Plant Community Description and Ecological Factors

The general view of this site is basin big sagebrush. The composition by air-dry weight is approximately 60 percent perennial grasses, 15 percent forbs, and 25 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
Bluebunch wheatgrass	PSSP6		200	250	20	25
Western wheatgrass	PASM		150	200	15	20
Idaho fescue	FEID		50	100	5	10
Great basin wildrye	LECI4	1	30	50	3	5
Muttongrass	POFE	1	30	50	3	5
Bottlebrush squirreltail	ELEL5	1	30	50	3	5
Prairie junegrass	KOMA	1	30	50	3	5
Other perennial grasses	PPGG	1	50	10	5	10
Other annual Grasses	AAGG	1	50	10	5	10

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Arrowleaf balsamroot	BASA3	2	30	50	3	5
Longleaf hawksbeard	CRAC2	2	30	50	3	5
Spurred lupine	LUCAC3	2	30	50	3	5
Longleaf phlox	PHLO2	2	30	50	3	5
Freakled milkvetch	ASLE8	2	30	50	3	5
White stoneseed	LIRU4	2	30	50	3	5
Shortstem wild buckwheat	ERBR5	2	30	50	3	5
Twolobe larkspur	DENU2	2	30	50	3	5
Common yarrow	ACMI2	2	30	50	3	5
Nevada onion	ALNE	2	30	50	3	5
Other perennial forbs	PPFF	2	100	150	10	15
Other annual forbs	AAFF	2	100	150	10	15

Shrubs/Vines, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Basin big sagebrush	ARTRT		150	200	15	20
Low rabbitbrush	CHVI8	3	30	50	3	5
Bitterbrush	PUTR2	3	30	50	3	5
Rubber rabbitbrush	ERNA10	3	30	50	3	5
Other shrubs	SSSS	3	50	100	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

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	900	1000
Unfavorable Year	500	600

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	50	2	20
Forbs (perennial)	10	1	5
Shrubs	15	4	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 grazing pressure bluebunch wheatgrass, and Idaho fescue decreases while basin big sagebrush, milkvetch, and lupine increase. When the potential natural plant community is burned, basin big sagebrush, Idaho fescue, and bitterbrush decrease while rabbitbrush, and western wheatgrass 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											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

025XY316UT
 Upland Shallow Loam (Black sagebrush)

025XY322UT
 Upland Juniper Savanna (Utah juniper)

025XY320UT
 Upland Stony Clay (Low 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 provides proper grazing for cattle and sheep during 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

This site has shrubs for cover and many plants for food.

b. List of Potential Species Present

Wildlife species using this site include sage grouse, blacktail jackrabbit, 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

Recreation uses include hunting, hiking, and camping.

4. Wood Products

None

5. Other Uses

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E. THREATENED AND ENDANGERED SPECIES

1. Plants
2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County: Box Elder
 Latitude: Longitude:

Modal Soil: Koosharem SiL – fine-loamy, mixed, frigid Culmulic Haploxerolls

Type location: Cotton Creek NE ¼ NE ¼ Section 20, Township 13N, Range 17W; Meadow Creek SE ¼ NE ¼ Section 19, Township 13N, Range 18W

General Legal Description:

Field Office Site Location

Legal Description:

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	12				
Permanent Transect Location					

Other References

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Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): Shane A. Green

Contact for lead author: 801-524-4567 Reference site used? No

Date: 6/27/06 MLRA: D25 Ecological Site: Upland Loam (Basin big sagebrush)(025XY310UT)

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: None to few. Any rills present should be somewhat short in length (less than 6 feet long). They are somewhat widely spaced (4 to 8 feet) and follow the surface micro-features. Old rills should be weathered and muted in appearance. An increase in rill formation may be seen after disturbance events such as recent fire or thunderstorms.

2. Presence of water flow patterns: Flow patterns wind around perennial plant bases and show little to slight evidence of erosion. They are short and stable and there is minor evidence of deposition.

3. Number and height of erosional pedestals or terracettes: Plants should show little or no pedestaling. Terracettes should be absent or very few.

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 25-35%.

5. Number of gullies and erosion associated with gullies: None to few. Any gullies present should show little sign of erosion and should be stabilized with vegetation.

6. Extent of wind scoured, blowouts and/or depositional areas: Minor 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): Most litter resides in place with some redistribution caused by water movement. Minor litter removal may occur in flow channels with deposition occurring at points of obstruction.

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 a soil stability rating of 5 to 6. 10 to 20% may have a rating of 3 to 5. The average should be a 5.

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 about 8 inches. Color is dark brown (7.5YR 4/2) loam, very dark brown (7.5YR 2/2) moist; weak fine granular structure; soft, friable. Little difference in color under vegetation.

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 be reduced. A reduction in vegetative structure can reduce snow capture.

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 3 to 9 inches that could be mistaken for a compaction layer.

12. Functional/Structural Groups (list in order of descending dominance by above-ground

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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 > rhizomatous grasses, sprouting shrubs, annual forbs > invaders such as Cheatgrass & Annual forbs. Dominants: Bluebunch Wheatgrass, Western Wheatgrass, Basin big sagebrush; Sub-dominants: Rabbitbrush, bitterbrush, Idaho Fescue. The perennial grass/non-sprouting shrub functioning groups 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 (15-25%) and depth (.50-.75 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 900 - 1000 #/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, Snakeweed, Green rabbitbrush, & Annual forbs.

17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years. Green rabbitbrush sprouts vigorously following fire.