

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 Loam (Oak)

SITE NUMBER: 047AY432UT

MLRA: E47

Original Site Description: Author: DLT TW

Date: 12/16/1992

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

Surface Textures:

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

Subsurface Textures: Fine to Medium- May Contain Gravel and Cobble

Subsurface Fragments(<=3" % vol, >3" % vol): <35%

Geologic Parent Materials: Sandstone, Shale, Limestone, Quartzite, and Igneous Rock

Moisture Regime:

Temperature Regime:

Runoff: None to Slight if Managed Properly

Permeability(min-max): Slow to Moderate

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 CaCl₂):

pH Range:

Available Water Capacity (inches): 10-14

Major Soils Associated With This Site:

Soil Survey Area: 613

Hades L-Organic SU., 15-60%

Harter GR-L, ORG-SUR 8-40%

Broadhead L to CBV-L 5-60%

Deer Creek L, 1-25%

Charcol GR-FSL, 30-50%

Cloud Rim L, 30-60%

Morgala L, 30-60%

Norcan L, 30-60%

Ostler L, 20-50%

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Gentle to Steep Mountain Slopes, Terminal Moraines and Fan Terraces
 Aspect: NE

	<u>Minimum</u>	<u>Maximum</u>
Slope:	15	60
Elevation:	5100	8500
Flooding:		
Frequency:		
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 16-25
 Mean Annual Air Temperature: 41-45
 Mean Annual Soil Temperature: 43-47
 Frost Free Period (days): 50-110
 Freeze Free Period (days): 0-0

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	34	39	46	56	67	77	86	84	75	63	46	37
Mean												
Low	10	14	20	28	36	42	49	47	39	30	17	13

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	2.71	2.35	2.22	1.80	1.68	1.27	0.79	1.04	1.11	1.69	1.70	1.87
Low												

Climate Stations: St. ID.: _____ Location: _____ Period: _____
 From: _____ To: _____
 (Includes factors such as storm intensity, precipitation dependability, origin and pattern of storms, driest and wettest months, orographic effects, etc.)

Influencing Water Features (if any):

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Wetland Description(Cowardin System) System Subsystem Class
Stream Types(Rosgen System) System

C. PLANT COMMUNITY CHARACTERISTICS

1. Potential Plant Community Description and Ecological Factors

The dominant aspect of the plant community is shrubs with Gambel oak being the primary species. The composition is approximately 25% grasses, 10% forbs, and 65% shrubs by average annual 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
Slender wheatgrass	ELTR7		82.5	165	5	10
Geyer sedge	CAGE2		49.5	82.5	3	5
Bluebunch wheatgrass	PSSP6		49.5	82.5	3	5
Mountain brome	BRCA5	1	16.5	49.5	1	3
Great basin wildrye	LECI4	1	16.5	49.5	1	3
King fescue	LEKI4	1	16.5	49.5	1	3
Muttongrass	POFE	1	16.5	49.5	1	3
Columbia needlegrass	ACNE9	1	16.5	49.5	1	3
Blue wildrye	ELGL	1	16.5	49.5	1	3
Sheep fescue	FEOV	1	16.5	49.5	1	3
Western wheatgrass	PASM	1	16.5	49.5	1	3
Indian ricegrass	ACHY	1	16.5	49.5	1	3
Letterman needlegrass	ACLE9	1	16.5	49.5	1	3
Other perennial grasses	PPGG	1	82.5	165	5	10
Other annual grasses	AAGG	1	82.5	165	5	10

Forbs, %

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Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Thickleaf peavine	LALA3		49.5	82.5	3	5
Sticky purple cranesbill	GEVI2		16.5	49.5	1	3
Fendler meadowrue	THFE		16.5	33	1	2
Low beardtongue	PEHU	2	16.5	16.5	1	1
Western mountain aster	ASOC	2	16.5	16.5	1	1
Showy false goldeneye	HEMU3	2	16.5	16.5	1	1
Coast goldenrod	SOSP	2	16.5	16.5	1	1
Northern mulesears	WYAM	2	16.5	16.5	1	1
Cutleaf balsamroot	BAMA4	2	16.5	16.5	1	1
Rocky Mountain dwarfsunflower	HEUN	2	16.5	16.5	1	1
Common yarrow	ACMI2	2	16.5	16.5	1	1
Spurred lupine	LUCAC3	2	16.5	16.5	1	1
Silverleaf milkvetch	ASAR4	2	16.5	16.5	1	1
Mountain desert parsley	LOGR	2	16.5	16.5	1	1
Feathery false solomonsseal	MARAR	2	16.5	16.5	1	1
Littleleaf alumroot	HEPA11	2	16.5	16.5	1	1
Little leaf pussytoes	ANMI3	2	16.5	16.5	1	1
Longleaf hawksbeard	CRAC2	2	16.5	16.5	1	1
Other perennial forbs	PPFF	2	49.5	82.5	3	5
Other annual forbs	AAFF	2	49.5	82.5	3	5

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Gambel oak	QUGA		495	742.5	30	45
Mountain snowberry	SYOR2		82.5	165	5	10
Saskatoon serviceberry	AMAI2		49.5	82.5	3	5
Creeping Oregon grape	MARE11		49.5	82.5	3	5
Bitterbrush	PURT2	3	16.5	49.5	1	3
Mountain big sagebrush	ARTRV	3	16.5	49.5	1	3
Birchleaf mountain mahogany	CEMO2	3	16.5	49.5	1	3
Slender wild buckwheat	ERMI4	3	16.5	49.5	1	3
Chokecherry	PRVI	3	16.5	49.5	1	3
Stickyleaf low rabbitbrush	CHVIV4	3	16.5	49.5	1	3
Woods rose	ROWO	3	16.5	49.5	1	3
Other shrubs	SSSS	3	82.5	165	5	10

Trees, %

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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	2200	2300
Average Year	1550	1650
Unfavorable Year	1350	1450

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	20	2	10
Forbs (perennial)	10	1	5
Shrubs	40	8	15
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

Plant species not a part of the climax plant community that are most likely to invade the site if plant cover deteriorates are: cheatgrass, annual forbs, dandelion, houndstongue, Utah juniper, pinyon pine, rubber rabbitbrush, and snakeweed.

Gambel oak sprouts from the roots following fire or mechanical control.

Plant Communities & Transitional Pathways

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

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6. Plant Growth Curves

	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	UT4321											
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	UT4322											
Description	needlegrass, bluegrass, and snowberry											

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)

047AY406UT
 Mountain gravelly 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 has a fair amount of grass, a small amount of forbs, and an exceptionally high amount of shrubs. There is a large variety of species. This site is especially valuable to sheep but can also be used by cattle and horses. This combination of plants provides a balanced nutrition for grazing animals. It should be grazed in spring, summer and fall.

b. Guide to Forage Quality(Plant preference by season)

Species	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep

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VG = Very Good G = Good F = Fair P = Poor

2. Wildlife

a. Site Factors Influencing Management

It is fair to poor for openland habitat, good for woodland habitat, very poor for wetland habitat and good for rangeland habitat.

b. List of Potential Species Present

It provides good to fair habitat for chukars, quail, forest grouse, mule deer, elk, squirrels, snowshoe hare, songbirds, and coyotes, especially in those areas where oakbrush is interspersed with grassy openings. It is fair to poor habitat for bobcats, 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 site has good values for aesthetic and natural beauty. It has a large number of forbs and shrubs which have flowers in bloom from early spring throughout the summer and into the fall. It has a combination of grasses, forbs, small shrubs and large shrubs which offer some possibilities for screening and value as camping and picnicking areas. Hunting for elk and mule deer is good to excellent on this site. Fishing is opportune on some streams through and adjacent to this site. This site has some value for snowmobiling through a fairly long period of the winter season.

4. Wood Products

No values exist for lumber. Some values exist for fuel for campfires and fireplace wood from gambel oak and bigtooth maple. These two species are also used for fence products produced for this purpose on this site and the volume increases whenever the range is depleted by overgrazing

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

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 2. Animals

American peregrine falcon may occasionally seek their prey on this site.

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
 Latitude: Longitude:

Modal Soil: Hades Loam Organic Surface, 15-60% — fine-loamy, mixed, frigid Pachic Argixerolls

Type Location: SW ¼, NW ¼, NE ¼, Section 21, Township 3S, Range 5E

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	28				
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: 6/24/04 MLRA: 047A Ecological Site: Mountain Loam (047AY432UT) Gambel oak, Mountain snowberry, Slender wheatgrass, Bluebunch wheatgrass, Geyer sedge 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 surface rock and 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: None.

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: 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 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 5 to 26 inches. Structure varies from fine subangular blocky to thin platy. Color varies from dark grayish brown (10YR3/2) to dark grayish brown (10YR4/2). There is a mollic epipedon that typically ranges from 26 to 34 inches deep.

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 argillic horizon at about 12 to 26 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, large sprouting shrubs > sprouting shrubs, perennial forbs > invaders such as Cheatgrass, Curlycup gumweed & Annual forbs. Dominants: Gambel oak, Mountain snowberry, Slender wheatgrass; Sub-dominants: Bluebunch wheatgrass, Geyer sedge, Saskatoon serviceberry. The perennial bunchgrass/ large 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): 1550 - 1650 #/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": Gambel oak, Green rabbitbrush, curlycup gumweed, Kentucky bluegrass & Xeric perennial & Annual forbs.

17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years. Gambel oak sprouts vigorously following fire and with repeated fire may completely dominate the site.