

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: High Mountain Clay (Northern mulesears)

SITE NUMBER: 047AY505UT

MLRA: E47

Original Site Description: Author: TW DJS

Date: 01/05/1993

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:

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

Subsurface Textures:

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

Geologic Parent Materials: Limestone and Shale Rocks

Moisture Regime:

Temperature Regime:

Runoff:

Permeability(min-max): Moderately Slow-Slow

Drainage Class(min-max): Poorly-Well

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: Neutral to Medium Acid

Available Water Capacity (inches): 16-30

Major Soils Associated With This Site:

Soil Survey Area: 613

Herd CB-CL, 3-15%

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

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2. PHYSIOGRAPHIC FEATURES

Landform and Position: Gently Sloping to Very Steep Mountain Slopes and Rolling or Hilly Plateaus

Aspect: NE (low elev.) — All (high elev.)

	<u>Minimum</u>	<u>Maximum</u>
Slope:	15	40
Elevation:	8000	9500
Flooding:		
Frequency:		
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 25-30

Mean Annual Air Temperature: 38-40

Mean Annual Soil Temperature: 0-0

Frost Free Period (days): 55-60

Freeze Free Period (days): 0-0

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	28	27	33	34	44	55	62	65	56	46	31	21
Low												

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	2.14	2.21	2.76	2.66	2.33	1.85	1.70	2.09	2.40	2.91	2.45	2.79
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):

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 vegetation of this site is dominantly grass. The plant community is composed of approximately 60 percent perennial grasses, 30 percent forbs, and 10 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
Slender wheatgrass	ELTR7		285	380	15	20
Mountain brome	BRCA5		95	190	5	10
Sheep fescue	FEOV		95	190	5	10
Prairie junegrass	KOMA		57	95	3	5
Blue wildrye	ELGL		57	95	3	5
Geyer sedge	CAGE2	1	19	38	1	2
Alpine timothy	PHAL2	1	19	38	1	2
Letterman needlegrass	ACLE9	1	19	38	1	2
Muttongrass	POFE	1	19	38	1	2
Other perennial grasses	PPGG	1	95	190	5	10
Other annual grasses	AAGG	1	95	190	5	10

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Northern mulesears	WYAM		285	380	15	20
Fall sneezeweed	HEAN	2	19	57	1	3
Sweetanice	OSOC	2	19	57	1	3
Common yarrow	ACMI2	2	19	57	1	3
Showy false goldeneye	HEMU3	2	19	57	1	3
Woodland strawberry	FRVE	2	19	57	1	3
Other perennial forbs	PPFF	2	190	285	10	15
Other annual forbs	AAFF	2	190	285	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 snowberry	SYOR2	3	57	95	3	5
Silver sagebrush	ARCA13	3	57	95	3	5
Bitterbrush	PUTR2	3	57	95	3	5
Other shrubs	SSSS	3	190	285	10	15

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	2200	2300
Average Year	1800	1900
Unfavorable Year	1500	1600

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	40	5	15
Forbs (perennial)	15	1	5
Shrubs	5	4	5
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

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Species that are not a part of the climax that are most likely to invade this site if plants deteriorate are annual grasses and annual forbs. Plants such as sagebrush, mulesears, and snowberry may greatly increase and may become the dominant plants under excessive grazing.

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	0	0	20	35	30	10	5	0	0	0
Name	PNC											
ID Number	UT5051											
Description	Excellent Condition											

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Percent Growth	0	0	0	0	10	40	45	5	0	0	0	0
Name	Good Condition											
ID Number	UT5052											
Description	needlegrass, bluegrass, snowberry											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

047AY516UT

High Mountain Loam (Mountain big sagebrush)

047AY517UT

High Mountain Loam (Silver sagebrush)

047AY508UT

High Mountain Loam (Aspen)

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 predominantly grasses but has enough forbs and shrubs to supply a fairly good balance of nutritious feed. It is well adapted for summer and fall use for horses, cattle and sheep. It has plants which remain green until frost, maintaining animal gains throughout the grazing period.

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 potential is poor for openlands habitat, good for woodland habitat, very poor for wetland and good for rangelands.

b. List of Potential Species Present

This site supports elk, mule deer, snowshoe hares, small rodents, songbirds, cougars, bear, golden eagles, bald eagles, weasels, ferrets, and coyotes for at least part of each year.

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 excellent values for aesthetics and natural beauty. It is good for elk and deer hunting. It has high potential for skiing and snowmobiling. Primitive type camping and picnicking are possible.

4. Wood Products

None

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5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants
2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
 Latitude: Longitude:

Modal Soil: Herd CB-CL, 3-15% — fine, montmorillonitic Mollic Cryoboralfs

Type Location: Anchutes Ranch; Section 10, Township 2N, Range 9E

General Legal Description:

Field Office Site Location

Logan
 Provo
 Murray
 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					
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: 6/26/04 MLRA: 047A Ecological Site: High Mountain Clay (047AY505UT) Northern mulesears, Slender wheatgrass, Mountain brome 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: Very minor rill development in exposed areas. Any rills present should be short on flatter slopes but may become longer (3 to 6 feet) as slope steepens. They should be somewhat widely spaced (4 to 8 feet), and follow the surface micro-features. Old rills should be weathered and muted in appearance. Surface cracking should not be mistaken for rills.

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. Some surface cracking may be evident during dry periods.

3. Number and height of erosional pedestals or terracettes: None. Some minor frost heaving could be evident but should not be mistaken for pedestaling.

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 litter 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 3 to 4 inches. Structure is typically fine granular. Color is typically very dark brown (10YR2/2).

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 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, large perennial forbs, > sprouting shrubs, xeric perennial forbs > invaders such as Tarweed, Coneflower & Annual forbs. Dominants: Slender wheatgrass, Mountain brome, Sheep fescue; Sub-dominants: Prairie junegrass, Northern mulesears, Bitterbrush. The perennial bunchgrass/large perennial forb 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 forbs should be present. Slight decadence in the principle shrubs could occur near the end of the fire cycle.

14. Average percent litter cover (30-40%) and depth (.75-1.75 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): 1800 - 1900 #/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": Northern mulesears, snowberry, Kentucky bluegrass & Xeric perennial forbs.

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