

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: Semidesert Loam (Wyoming big sagebrush)

SITE NUMBER: 034XY212UT

MLRA: 034

Original Site Description: Author: JLB GWL

Date: 05/15/1981

Revised Site Description: Author: JLB GWL

Date: 12/28/1993

Approved by: Title: State Range Cons. Signed: Pat Shaver

Date: 06/25/1994

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: Loam, Fine Sandy Loam or Silty Clay Loam

Surface Fragments(<=3" % cover, >3" % cover): <=40%

Subsurface Textures: Fine Loamy

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

Geologic Parent Materials: Alluvium and Colluvium from Mixed Sedimentary

Moisture Regime:

Temperature Regime: Mesic

Runoff: Medium

Permeability(min-max): Moderate

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):

Site Type: Rangeland

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

Major Soils Associated With This Site:

Soil Survey Area: 047

Abra L 3-8%, 1-3% GR-SL 3-25%

Abra VFSL CL Cob Substr 1-3%

Hazmaz L 1-3%, 2-5% GR-L 3-8%

Lapoint CL 2-4%

Paradox CL 3-8% L 3-8%

Paradox SiC 1-3%

Mikim L 3-15% CB-CL 8-25%

Mikim GR-L 2-8%

Alldown L 2-5%, 5-8%

Cerrillos CL 2-5%

Glenberg Family 3-6%

Hernandez Family 1-3%, 3-8%

Sazi FLS 3-8%

Abra GR-SL 25-40% Eroded

Baldfield SiC 1-3%

Honlu SL 1-8% CBV-SL 8-15%

Curcreek VFSL Dry 3-8%

Paradox L 3-8%, 1-3%, 8-25% Eroded

Sinkson L 2-5%, 5-8%

Mikim L 25-40% Eroded 1-3%

Penistaja FSL 3-8%

Bowbac SL 2-5%

Creered SiL Dry 2-4%

Haverdady L 1-8%

Barx FSL 1-5%

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Alluvial Fans, Terraces, Pediment Foot Slopes, Toe Slopes and Occasionally in Drainages

Aspect: All

	<u>Minimum</u>	<u>Maximum</u>
Slope:	2	15
Elevation:	5200	7000
Flooding:		
Frequency:		
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 8-12

Mean Annual Air Temperature: 41-49

Mean Annual Soil Temperature: 44-51

Frost Free Period (days): 0-0

Freeze Free Period (days): 80-140

Temperature and Moisture Distribution:

Site Type: Rangeland

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	37	43	52	64	73	83	91	88	80	69	51	40
Mean	24	30	38	49	58	66	74	71	63	52	38	27
Low	11	17	25	33	42	49	56	54	46	36	24	14

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	0.65	0.63	0.65	0.53	0.70	0.80	0.92	1.23	1.09	0.84	0.57	1.14
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 dominant aspect of the plant community is Wyoming big sagebrush and Indian ricegrass. The composition by air-dry weight is approximately 50 percent perennial grasses, 10 percent forbs and 40 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
Indian ricegrass	ACHY		70	105	10	15
Galleta	HIJA		35	70	5	10
Bottlebrush squirreltail	ELEL5		35	70	5	10
Needleandthread	HECO26		35	70	5	10
Blue grama	BOGR2	1	7	21	1	3
Purple threeawn	ARPU9	1	7	21	1	3
Sand dropseed	SPCR	1	7	21	1	3
Nevada bluegrass	PONE3	1	7	21	1	3
Western wheatgrass	PASM	1	7	21	1	3
Salina wildrye	LESAS	1	7	21	1	3
Other perennial grasses	PPGG	1	21	35	3	5
Other annual grasses	AAGG	1	21	35	3	5

Forbs, %

Site Type: Rangeland

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Scarlet globemallow	SPCO		7	35	1	5
Woolly milkvetch	ASMO7	2	0	7	0	1
Small leaf pussytoes	ANMI3	2	0	7	0	1
Sego lily	CANU3	2	0	7	0	1
Twolobe larkspur	DENU2	2	0	7	0	1
Basin fleabane	ERPU9	2	0	7	0	1
Cushion wild buckwheat	EROV	2	0	7	0	1
Sprawling skyrocket	IPPO2	2	0	7	0	1
Mountain pepperweed	LEMO2	2	0	7	0	1
Mountain desert parsley	LOGR	2	0	7	0	1
Whitestem stickleaf	MEAL6	2	0	7	0	1
Longleaf phlox	PHLO2	2	0	7	0	1
Hedge mustard	SIOF	2	0	7	0	1
Western tansymustard	DEPI	2	0	7	0	1
Lapoint beardtongue	PEGO2	2	0	7	0	1
Barneby pepperweed	LEBA	2	0	7	0	1
Other perennial forbs	PPFF	2	35	70	5	10
Other annual forbs	AAFF	2	35	70	5	10

Shrubs/Vines, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Wyoming big sagebrush	ARTRW		105	140	15	20
Winterfat	KRLA2		35	70	5	10
Fourwing saltbush	ATCA2		21	35	3	5
Low rabbitbrush	CHVI8	3	7	21	1	3
Shadscale	ATCO	3	7	21	1	3
Nevada jointfir	EPNE	3	7	21	1	3
Mormontea	EPVI	3	7	21	1	3
Spiny hopsage	GRSP	3	7	21	1	3
Broom snakeweed	GUSA2	3	7	21	1	3
Central pricklypear	OPPO	3	7	21	1	3
Nuttall horsebrush	TENU2	3	7	21	1	3
Rubber rabbitbrush	ERNA10	3	7	21	1	3
Other shrubs	SSSS	3	35	70	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

Site Type: Rangeland

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

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	850	900
Average Year	650	700
Unfavorable Year	500	550

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range (ft.)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	30	2	10
Forbs (perennial)	5	1	2
Shrubs	25	3	10
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing by cattle, grasses will decrease while Wyoming big sagebrush will increase to dominate the site. If the site is overgrazed by sheep in the fall or winter, sagebrush may disappear entirely from the site.

When the potential natural plant community is burned, Wyoming big sagebrush will decrease while grasses and annual forbs will increase. Cheatgrass and annual weeds are most likely to invade this site. Utah juniper may invade where this site is located adjacent to juniper sites.

Plant Communities & Transitional Pathways

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

6. Plant Growth Curves

Site Type: Rangeland

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Percent Growth	0	0	5	15	45	35	0	0	0	0	0	0
Name	PNC											
ID Number	UT2121											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

034XY216UT

Semidesert Sandy Loam (Fourwing saltbush)

034XY247UT

Semidesert Stony Loam (Utah juniper-Pinyon)

034XY233UT

Semidesert Shallow Loam (Utah juniper-Pinyon)

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 provides proper grazing for sheep, cattle and horses all seasons of the year, but more particularly in the spring 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

Site Type: Rangeland
 Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)
 Site Number: 034XY212UT

This site provides food and cover for wildlife.

b. List of Potential Species Present

Wildlife using this site include jackrabbit, snake, coyote, mule deer, and hawk.

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 moderate recreational opportunities and often has scenic vistas.

4. Wood Products

Utah juniper and pinyon invade this site and may produce firewood or posts.

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants
2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah
 Latitude:

County:
 Longitude:

Site Type: Rangeland

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

Modal Soil: Abra L 3-8%, 1-3% — fine-loamy, mixed, mesic Ustollic Calciorthids

Type Location: SW ¼, SW ¼, SW ¼; Section 13, Township 5S, Range 19E SLBM

General Legal Description:

Field Office Site Location

Roosevelt

Price

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

Site Type: Rangeland
 Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)
 Site Number: 034XY212UT

Attachment 1

Ecological Reference Worksheet

Author(s)/participant(s): V. Keith Wadman
 Contact for lead author: _____ Reference site used? Yes/No
 Date: 6/21/04 MLRA: 034X Ecological Site: Semidesert Loam (034XY212UT) Wyoming big sagebrush, Indian ricegrass. 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) 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 few.
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 30 - 50%.
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): 70 to 80% of this site should have an erosion rating of 4 to 6. 20 to 30% may have a rating of 3 to 4. The average should be a 5. Litter accumulation and cryptogamic crust reduces 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 1 to 5 inches. Structure varies from fine granular or platy to subangular platy. Color is light brown (10YR6/2 to reddish brown 5YR5/4). Organic matter is > 2%. An ochric epipedon extends to about 10 inches.
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.

Site Type: Rangeland

10

Ecological Site Name: Semidesert Loam (Wyoming big sagebrush)

Site Number: 034XY212UT

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): **None. A few soils have a duripan at about 30+ 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 50-70 years. Perennial grasses, non-sprouting shrubs > sprouting shrubs, annual forbs > invaders such as Cheatgrass & annual forbs. Dominants: Wyoming big sagebrush, Indian ricegrass; Sub-dominants: Galleta, Winterfat, Fourwing saltbush. The perennial grass/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 (10-20%) and depth (.50-.1.0 inch).

15. Expected annual production (this is TOTAL above-ground production, not just forage production): **650 - 700 #/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, Cheatgrass, Purple Threeawn, & Annual forbs.**

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