

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 Gravelly Loam (Wyoming big sagebrush) South

SITE NUMBER: 028AY214UT

MLRA: 028A

Original Site Description: Author: DJS

Date: 04/01/1988

Revised Site Description: Author: DJS

Date: 06/17/1993

Approved by: Title: State Range Cons.

Signed: Pat Shaver

Date: 08/30/1993

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:

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

Subsurface Textures: Very Gravelly Loam & Very Cobbly Loam

Subsurface Fragments(<=3" % vol, >3" % vol): 35-60%

Geologic Parent Materials:

Moisture Regime:

Temperature Regime:

Runoff:

Permeability(min-max):

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): 3.5-5.0

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Major Soils Associated With This Site:

Soil Survey Area: 634

Hiko peak GSL 2-15%

Annabella GRV-L 2-15% Slopes

Bannion GR-L 2-5%

Dixie GRV-L 8-25%

Hiko Peak GR-SL 8-15%

Decca CB-SL 10-30%

Decca RV-L

Dixie GR-L

Annabella Variant 2-5%

Debab CBV-L 2-15%

Dixie GR-L 2-8%

Festus GR-SL 2-18%

Junket CBV-L 2-8%

Hiko Peak CSL

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Gently and Strongly Sloping Fans, Terraces, and Plains

Aspect: All

	<u>Minimum</u>	<u>Maximum</u>
Slope:	1	15
Elevation:	5200	6200
Flooding:		
Frequency:		
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 8-12

Mean Annual Air Temperature: 46-51

Mean Annual Soil Temperature: 49-54

Frost Free Period (days): 0-0

Freeze Free Period (days): 110-130

Temperature and Moisture Distribution:

Temp	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High	40	46	53	62	71	82	89	86	79	67	53	42
Mean												
Low	14	20	24	30	38	46	54	53	43	33	23	16

ppt	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
High												
Mean	0.80	0.80	1.00	0.80	0.70	0.40	1.20	1.40	0.80	0.90	0.60	0.70
Low												

Climate Stations: St. ID.:

Location:

Period:

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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 this plant community is Wyoming big sagebrush and Indian ricegrass. The composition by air-dry weight is approximately 45 percent perennial grasses, 10 percent forbs, and 45 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		90	150	15	25
Galleta	HIJA		60	90	10	15
Bluebunch wheatgrass	PSSP6		18	30	3	5
Bottlebrush squirreltail	ELEL5	1	18	30	3	5
Muttongrass	POFE	1	18	30	3	5
Needleandthread	HECO26	1	18	30	3	5
Sand dropseed	SPCR	1	18	30	3	5
Blue grama	BOGR	1	18	30	3	5
Purple threeawn	ARPU	1	18	30	3	5
Nevada bluegrass	PONE3	1	18	30	3	5
Other perennial grasses	PPGG	1	30	60	5	10
Other annual grasses	AAGG	1	30	60	5	10

Forbs, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Scarlet globemallow	SPCO	2	6	18	1	3
Longleaf phlox	PHLO2	2	6	18	1	3
Roundspike catseye	CRHU2	2	6	18	1	3
Utah milkvetch	ASUT	2	6	18	1	3
Cushion wild buckwheat	EROV	2	6	18	1	3
Northwestern Indian paintbrush	CAAN7	2	6	18	1	3
Other perennial forbs	PFFF	2	30	60	5	10
Other annual forbs	AAFF	2	30	60	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		120	180	20	30
Fourwing saltbush	ATCA2		18	30	3	5
Nevada jointfir	EPNE		18	30	3	5
Winterfat	KRLA2		18	30	3	5
Black sagebrush	ARNO4	3	6	18	1	3
Bud sagebrush	ARSP5	3	6	18	1	3
Sulphurflower wild buckwheat	ERUM	3	6	18	1	3
Low rabbitbrush	CHV18	3	6	18	1	3
Fringed sagebrush	ARFR4	3	6	18	1	3
Nuttall horsebrush	TENU2	3	6	18	1	3
Broom snakeweed	GUSA2	3	6	18	1	3
Central pricklypear	OPPO	3	6	18	1	3
Shadscale	ATCO	3	6	18	1	3
Rattail cholla	OPWH	3	6	18	1	3
Other shrubs	SSSS	3	30	60	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:

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	Low	High
Favorable Year	750	800
Average Year	550	600
Unfavorable Year	350	400

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	15
Forbs (perennial)	10	2	5
Shrubs	35	3	15
Trees			
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, bluebunch wheatgrass, Indian ricegrass, black sagebrush, fourwing saltbush, and winterfat decrease, while low rabbitbrush, snakeweed, blue grama, galleta, threeawn, and undesirable forbs increase.

When the potential natural plant community is burned, Wyoming big sagebrush, black sagebrush, fourwing saltbush, and winterfat decrease while low rabbitbrush, snakeweed, blue grama, galleta, threeawn, and undesirable forbs increase.

Cheatgrass, Russian thistle, and Utah juniper are most likely to invade this site.

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	30	5	5	0	0	0	0

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Name	UT2141
ID Number	PNC
Description	Excellent Condition

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

028AY224UT
 Semidesert Sandy Loam (Winterfat)

028AY220UT
 Semidesert Loam (Wyoming big sagebrush)

028AY232UT
 Semidesert Shallow Hardpan (Utah juniper)

028AY230UT
 Semidesert Shallow Hardpan (10-14 PPT)

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 not suited for grazing by cattle or sheep during fall, winter, and spring.

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 provides food and cover for wildlife.

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b. List of Potential Species Present

Wildlife using this site include rabbit, coyote, fox, badger, pronghorn antelope, mule deer, and dove.

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

Resources that have special aesthetic and landscape values are wildflowers. Some recreation uses of this site are hiking, hunting, and motorcycling.

4. Wood Products

None

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants

2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah

County:

Latitude:

Longitude:

Modal Soil: Hiko Peak GR-SL – loamy-skeletal, mixed, mesic Xerollic Calciorthids

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Type Location: SWA'S-D454, S153 SO81 SO-82, FOO3, GO47. These site areas are located in Cedar City BLM District, New Castle, Utah, near dump.

General Legal Description:

Field Office Site Location

Logan

Murray

Provo

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	21				
UTAH - RANGE - 2	27				
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: 6/17/04 MLRA: 028A Ecological Site: Semidesert Gravelly Loam (028AY214UT)
Indian ricegrass, Wyoming big sagebrush (South) 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. The presence of surface coarse fragments may reduce rill formation.

2. Presence of water flow patterns: Flow patterns wind around surface rock & perennial plant bases and show minor evidence of erosion. They are short and stable and there is little evidence of deposition. Evidence of flow may increase somewhat with slope.

3. Number and height of erosional pedestals or terracettes: Plants should show only minor 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%. Lower where surface coarse fragments occur.

5. Number of gullies and erosion associated with gullies: None to few. Any gullies present should show little sign of active erosion and should be stabilized with vegetation. The presence of surface rock may mask erosion indicators.

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 redistribution caused by both wind and water. Minor litter removal may occur in flow channels with deposition occurring at points of obstruction. Litter movement will increase with slope. Fine litter may be removed from the site by wind action.

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. 10 to 30% may have a rating of 3 to 5. The average should be a 5. Litter accumulation and cryptogamic crusts reduce erosion. The presence of surface rock also reduces site 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 3 inches. Structure is weak platy to loose granular. Color is brown (10YR5/3). An ochric epipedon extends to about 14 inches.

10. Effect of plant community composition (relative proportion of different functional

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<p>groups) & spatial distribution on infiltration & runoff: When perennial grasses decrease, reducing ground cover and increasing bare ground, runoff will increase and infiltration can be reduced. A reduction in vegetative structure can reduce snow capture.</p>	
<p>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 a calcium hardpan at 10 to 20 inches that could be mistaken for a compaction layer.</p>	
<p>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 & Russian thistle. Dominants: Indian ricegrass & Wyoming big sagebrush; Sub-dominants: Galleta & Bluebunch wheatgrass. The perennial grass/non-sprouting shrub functioning group is expected on this site.</p>	
<p>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.</p>	
<p>14. Average percent litter cover (5-15%) and depth (.25-.50 inch).</p>	
<p>15. Expected annual production (this is TOTAL above-ground production, not just forage production): 550 - 600 #/acre on an average year.</p>	
<p>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": Utah juniper, Cheatgrass, Green rabbitbrush, Snakeweed, Threeawn & Annual forbs.</p>	
<p>17. Perennial plant reproductive capability: All perennial plants should have the ability to reproduce in all years, except in extreme drought years.</p>	