

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 Shallow Loam (Utah juniper-Pinyon)

SITE NUMBER: 034XY233UT

MLRA: 034

Original Site Description: Author: JLB GWL

Date: 05/12/1981

Revised Site Description: Author: JLB GWL

Date: 01/03/1994

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: 10-20 inches

Surface Textures:

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

Subsurface Textures:

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

Geologic Parent Materials: Colluvium from Sedimentary

Moisture Regime:

Temperature Regime: Mesic

Runoff: Medium to Rapid

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):

Major Soils Associated With This Site:

Soil Survey Area: 047

Atchee CNX 4-25%

Atchee CNX-SL Eroded 25-50%

Curhollow L 4-8%

Gerst L Eroded 4-40%

Travessilla FSL 4-25%, 25-50%

Winona CBV-L 8-25% Eroded

Winona CBV-L 25-50 Eroded

Shalako GR-SL 3-8%

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

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2. PHYSIOGRAPHIC FEATURES

Landform and Position: Pediment Slopes, Hill Slopes, Hogback Dip Slopes and Back Slopes

Aspect: North (low elev.); South (high elev.)

	<u>Minimum</u>	<u>Maximum</u>
Slope:	15	50
Elevation:	4900	7200
Flooding:		
Frequency:		
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 8-12

Mean Annual Air Temperature: 44-49

Mean Annual Soil Temperature: 47-51

Frost Free Period (days): 0-0

Freeze Free Period (days): 110-140

Temperature and Moisture Distribution:

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 Utah juniper and pinyon. The understory composition by air-dry weight is approximately 30 percent perennial grasses, 5 percent forbs, 50 percent shrubs, and 10 percent trees.

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
Salina wildrye	LESAS		30	45	10	15
Bluebunch wheatgrass	PSSP6		9	15	3	5
Galleta	HIJA		9	15	3	5
Indian ricegrass	ACHY		9	15	3	5
Needleandthread	HECO26		9	15	3	5
Bottlebrush squirreltail	ELEL5	1	3	9	1	3
Sandberg bluegrass	POSE	1	3	9	1	3
Western wheatgrass	PASM	1	3	9	1	3
Blue grama	BOGR2	1	3	9	1	3
Other perennial grasses	PPGG	1	9	15	3	5
Other annual grasses	AAGG	1	9	15	3	5

Forbs, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Roughseed catseye	CRFL6	2	0	3	0	1
Cushion wild buckwheat	EROV	2	0	3	0	1
Thickleaf beardtongue	PEPA6	2	0	3	0	1
Mountain pepperweed	LEMO2	2	0	3	0	1
Hedge mustard	SIOF	2	0	3	0	1
Scarlet globemallow	SPCO	2	0	3	0	1
Carpet phlox	PHHO	2	0	3	0	1
Grassy rockgoldenrod	PEPU7	2	0	3	0	1
Hooker sandwort	ARHO4	2	0	3	0	1
Tufted milkvetch	ASSP6	2	0	3	0	1
Northwestern Indian paintbrush	CAAN7	2	0	3	0	1
Hairy false goldenaster	HEVI4	2	0	3	0	1
Gumweed tansyaster	MAGR2	2	0	3	0	1
Other perennial forbs	PPFF	2	15	30	5	10
Other annual forbs	AAFF	2	15	30	5	10

Shrubs/Vines, %

Common Name	National	Group	Pounds per Acre	% by Weight of
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	Symbol				Total Composition	
			Low	High	Low	High
Black sagebrush	ARNO4		45	60	15	20
Birchleaf mountainmahogany	CEMO2		15	30	5	10
Mormon tea	EPVI		15	30	5	10
Bigelow sagebrush	ARBI3	3	3	15	1	5
Wyoming big sagebrush	ARTRW	3	3	15	1	5
Fourwing saltbush	ATCA2	3	3	15	1	5
Shadscale	ATCO	3	3	15	1	5
Mexican cliffrose	PUME	3	3	15	1	5
Winterfat	KRLA2	3	3	15	1	5
Spiny greasewood	GLSPM	3	3	15	1	5
Broom Snakeweed	GUSA2	3	3	15	1	5
Stemless mock buckwheat	STACA	3	3	15	1	5
Crispleaf wild buckwheat	ERCO14	3	3	15	1	5
Central pricklypear	OPPO	3	3	15	1	5
Spanish bayonet	YUHA	3	3	15	1	5
Other shrubs	SSSS	3	30	60	10	20

Trees, %

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Utah juniper	JUOS		9	15	3	5
Pinyon pine	PIED		9	15	3	5

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	350	400
Average Year	250	300
Unfavorable Year	150	200

4. Ground Cover and Structure

a. Vegetative

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Vegetation Type	Percent Canopy Cover	Height Range (ft.)	Percent Basal Area Cover
Grasses & Grass-like (perennial)	20	2	10
Forbs (perennial)	5	1	2
Shrubs	20	3	10
Trees	30	10	15
Cryptogams			

b. Other

Litter	
Coarse Fragments	
Bare Ground	

5. Ecological Dynamics of the Site

As ecological condition deteriorates due to overgrazing, grasses, birchleaf mountainmahogany and black sagebrush decrease while Utah juniper, pinyon, broom snakeweed and unpalatable forbs increase.

When the potential natural plant community is burned, Utah juniper, pinyon, and black sagebrush decrease while grasses, rabbitbrush and annuals increase. However, fire is of only minor importance in this system.

Cheatgrass and annual weeds 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	45	35	0	0	0	0	0	0
Name	PNC											
ID Number	UT2331											
Description	Excellent Condition											

7. Aspect Differences Near MLRA Boundaries

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

8. Associated Sites Within MLRA

034XY212UT
 Semidesert Loam (Wyoming big sagebrush)

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 034XY227UT
 Semidesert Shallow Loam (Black Sagebrush)

034XY230UT
 Semidesert Shallow Loam (Salina wildrye)

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 receives limited grazing by cattle and sheep because of steep slopes and low production of forage.

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.

b. List of Potential Species Present

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

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

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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 offers some hunting but very limited other recreational opportunities because of rough terrain.

4. Wood Products

This site produces firewood and posts.

5. Other Uses

E. THREATENED AND ENDANGERED SPECIES

1. Plants
2. Animals

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County:
 Latitude: Longitude:

Modal Soil: Atchee CNX-SL 4-25% 25-50% Eroded — loamy-skeletal, mixed (calc.), mesic Lithic Ustic Torriothents

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Type Location: NE ¼, SW ¼, NW ¼; Section 15, Township 12S, Range 21E 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

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 Shallow loam (034XY233UT)
Pinyon-juniper, Salina wildrye, Black sagebrush 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 should be short on flatter slopes but may become longer (4 to 12 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. 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 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: Plants may show minor pedestaling on their down slope side. Terracettes should be few and stable.

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bareground): 10 - 20%. (Surface rock covers 25 - 80% of this site).

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. 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 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): 60 to 70% of this site should have an erosion rating of 4 or 5. 30 to 40% may have a rating of 2 to 4. The average should be a 4. 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 4 inches. Structure varies from fine granular to subangular blocky. Color varies from brown (10YR5/3) to pale brown (10YR6/3). Little difference in color under vegetation.

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<p>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. Significant increases in Pinyon-juniper canopy reduces understory vegetation and increases runoff.</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. Bedrock occurs at 8 to 15 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 40-60 years. Perennial grasses, non-sprouting shrubs > sprouting shrubs, annual forbs > invaders such as Cheatgrass & annual forbs. Dominants: Salina wildrye, Bluebunch wheatgrass; Sub-dominants: Black sagebrush, Mormontea & Birchleaf mountainmahogany. The perennial grass/non-sprouting shrub functioning group is expected as understory 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 and overstory trees could occur near the end of the fire cycle.</p>	
<p>14. Average percent litter cover (10-15%) and depth (.25-.50 inch).</p>	
<p>15. Expected annual production (this is TOTAL above-ground production, not just forage production): 250 - 300 #/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": Cheatgrass, Snakeweed, Sandberg bluegrass & 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. Understory reproduction is reduced as overstory canopy closes.</p>	