

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 Stony Loam (Shadscale)

SITE NUMBER: 035XY242UT

MLRA: D-35

Original Site Description: Author: GSC

Date: 08/20/1984

Revised Site Description: Author: GSC

Date: 10/28/1993

Revised Site Description: Author: SM

Date: 06/10/2004

Approved by: Title: Signed:

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

1. SOILS

Depth: very deep (more than 60 inches)

Surface Textures: gravelly fine sandy loam, extremely stony fine sandy loam, gravelly loam, very stony sandy clay loam, extremely bouldery sandy clay loam

Surface Fragments (<=3" % cover, >3" % cover): 40 to 70%

Subsurface Textures: very cobbly fine sandy loam, very gravelly sandy loam, very cobbly sandy loam, gravelly loam, gravelly sandy clay loam, very gravelly sandy clay loam

Subsurface Fragments (<=3" % vol. >3" % vol.): 35 to 60%

Geologic Parent Materials: alluvium and colluvium derived from sandstone, siltstone and shale

Moisture Regime: Ustic Aridic

Temperature Regime: Mesic

Runoff: medium

Permeability (min-max): moderately slow to moderately rapid (0.2 to 6.0 in/hr)

Drainage Class (min-max): well drained

Water Erosion Hazard: slight to moderate

Wind Erosion Hazard: slight

Electrical Conductivity (EC in mmhos/cm): 0 to 2 mmhos/cm

Sodium Adsorption Ration (SAR): 0 (nonsodic)

Calcium Carbonate Equivalent (%): 3-30%

pH Range (1:1 water): 8.4 to 9.2

Available Water Capacity (inches): 3 to 7.5 inches

Soils usually have a cobbly or bouldery surface and over 50% rock fragments throughout the profile. The soils are slightly to moderately calcareous. Average annual soil loss in potential is approximately 1 tons/acre. Strych in the San Juan survey has slope of 30 to 50% which will cause more rapid runoff. Moderately slow permeability occurs when soils have a sandy clay loam texture. In general, soils with loam or sandy clay loam textures have higher available water capacity (5 to 7.5 inches) than sandy loam textured soils (3 to 5 inches). Also, in general, soils with greater than 50-60% rock fragments will have a lower available water capacity (3 to 5 inches) than soils with less than 50-60% rock fragments (5 to 7 inches).

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Major Soils Associated With This Site (*Soil Survey Area + Series Name*):

Henry Mountains Area (631): **Strych** in mapunit 109.
 San Juan County, Utah – Central part (638): **Strych** in mapunit 64.
 Capitol Reef NP (685): **Clapper** in mapunit 260; **Nihill Family** in mapunit 213; **Strych** in mapunit 265.

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Landslide, sideslopes and tops of structural benches, dissected alluvial fans, fans terraces, and valleysides.

Aspect: 3,500 ft on north aspects to 6,200 ft. on south and west aspects

	<u>Minimum</u>	<u>Maximum</u>
Slope:	2%	30%
Elevation:	5,000 ft.	6,200 ft.
Flooding:		
Frequency:	none	
Duration:		
Ponding:		
Depth (inches):	none	
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 8 to 12 inches

Mean Annual Air Temperature: 47°F to 50°F

Mean Annual Soil Temperature: 49°F to 52°F

Frost Free Period (days): 120 to 160 days

Freeze Free Period (days): 120 to 150 days

Temperature and Moisture Distribution:

Climate Stations: St. ID. : 422592 Location: Escalante, Utah Period: From: 5/1901 To: 7/2003

Temperature	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
High Mean	40.4	45.6	54.4	63.2	72.8	83.6	88.7	85.6	78.4	66.8	52.6	41.9	64.5
Average Mean	27.2	32.9	40.3	47.9	56.3	65.4	71.4	69.0	61.3	50.8	38.4	29.0	49.2
Low Mean	13.9	20.2	26.2	32.5	39.9	47.2	54.2	52.4	44.2	34.8	24.2	16.1	33.8

Precipitation	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Highest	4.44	3.06	3.46	3.30	2.50	2.50	5.41	4.50	5.70	5.57	4.65	3.76	21.70
Average Mean	0.95	0.79	0.84	0.57	0.60	0.47	1.20	1.83	1.16	1.06	0.65	0.80	10.91
Lowest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	4.79

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Climate Stations: St. ID. : 421168 Location: Canyonlands The Needle, Utah Period: From: 6/1965 To: 7/2003

Temperature	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
High Mean	40.9	49.0	58.8	67.4	78.2	89.2	95.2	92.5	83.4	69.7	54.0	42.4	68.4
Average Mean	28.6	35.8	44.4	51.9	62.0	72.1	78.5	76.5	66.8	53.7	40.4	30.1	53.4
Low Mean	16.3	22.7	30.1	36.6	45.8	55.1	61.9	60.3	50.3	37.8	26.9	17.8	38.5

Precipitation	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Highest	1.56	1.34	2.59	1.99	2.61	2.03	2.27	3.03	2.42	4.43	1.58	1.59	11.19
Average Mean	0.53	0.42	0.74	0.69	0.62	0.38	0.87	1.04	0.86	1.09	0.68	0.54	8.45
Lowest	0.0	0.0	0.01	0.0	0.0	0.0	0.05	0.0	0.0	0.01	0.0	0.0	4.25

(Includes factors such as storm intensity, precipitation dependability, origin and pattern of storms, driest and wettest months, orographic effects, etc.)

Approximately 70-75% occurs as rain from March through October. On the average, February, May, and June are the driest months and July through October are the wettest months. Precipitation is extremely variable from month to month and from year to year. Much of the summer precipitation occurs as convection thunderstorms.

Influencing Water Features (if any):

Wetland Description (Cowardin System) System Subsystem Class
 None

Stream Types (Rosgen System) System
 None

C. PLANT COMMUNITY CHARACTERISTICS

1. Potential Plant Community Description and Ecological Factors

(Includes dominant vegetative aspect, cool-season and warm-season components, typical plant spacing, etc.)

The dominant aspect of the plant community is shadscale and galleta. The composition by air-dry weight is approximately 45% perennial grasses, 10% forbs, and 45% shrubs. In average years, plants begin growth around February 20 and end growth around October 30.

2. Plant Community Composition by Weight and Percentage

Grasses and Grasslike, 40-50%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Galleta	PLJA	0	150	220	30	40
Indian Ricegrass	ACHY	0	25	55	5	10
Sand Dropseed	SPCR	1	5	17	1	3
Blue Grama	BOGR2	1	5	17	1	3
Purple Threeawn	ARPU9	1	5	17	1	3
Needleandthread	HECO8	1	5	17	1	3
Bottlebrush Squirreltail	ELEL5	1	5	17	1	3
Other Perennial Grasses	PPGG	1	15	28	3	5
Other Annual Grasses	AAGG	1	15	28	3	5

Forbs, 5-10%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Woolly Locoweed	ASMO7	0	15	28	3	5
Gooseberryleaf Globemallow	SPGR2	2	5	17	1	3
Woolly Plantain	PLPA2	2	5	17	1	3
Manybranched Ipomopsis	IPPO2	2	5	17	1	3
Stemless Four-nerve Daisy	TEACA2	2	5	17	1	3
Cushion Buckwheat	EROV	2	5	17	1	3
Badland Mules-ears	WYSC	2	5	17	1	3
Other Perennial Forbs	PPFF	2	15	28	3	5
Other Annual Forbs	AAFF	2	15	28	3	5

Shrubs, 40-50%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Shadscale	ATCO	0	75	138	15	25
Torrey Mormontea	EPTO	0	25	55	5	10
Bigelow Sagebrush	ARBI3	0	15	28	3	5
Winterfat	KRLA2	0	15	28	3	5
Fourwing Saltbush	ATCA2	3	5	17	1	3
Yellow Rabbitbrush	CHVI8	3	5	17	1	3
Plains Pricklypear	OPPO	3	5	17	1	3
Sulphur-flower Buckwheat	ERUM	3	5	17	1	3
Broom Snakeweed	GUSA2	3	5	17	1	3
Spineless Horsebrush	TECA2	3	5	17	1	3

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Other Shrubs	SSSS	3	25	55	5	10
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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	650	700
Average Year	500	550
Unfavorable Year	250	300

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range	Percent Basal Area Cover
Grasses & Grass-like (perennial)	20	2.00	10
Forbs (perennial)	5	1.00	2
Shrubs	30	2.00	20
Trees	-	-	-
Cryptogams	0-1%	0.5 cm	0-1%

b. Other

Litter	0.5-3%
Coarse Fragments	50-70%
Bare Ground	20-30%

5. Ecological Dynamics of the Site

(Includes a discussion of seral stages; fire influence and effects; effects of prolonged wet or dry periods; resistance to change; the influence of such things as grazing, rodent concentrations, insects, diseases, introduced species, and soil erosion or deposition; other stable vegetative states associated with this site as a result of extreme disturbance)

As ecological condition deteriorates due to overgrazing, Indian ricegrass, needleandthread, Bigelow sagebrush, and Torrey mormontea decrease while galleta, rusty lupine, locoweed, big sagebrush, shadscale, and broom snakeweed increase. When the potential natural community is burned, Bigelow sagebrush, winterfat, and big sagebrush decrease while perennial grasses, some forbs, broom snakeweed, and rabbitbrush increase. Cheatgrass, common sunflower, pinyon pine, and Utah juniper are most likely to invade this site.

Suitability for rangeland seeding is very poor. The major limiting factors are low precipitation, steep slopes in some areas, the stony surface, low available water capacity, and the compacted soil. Practices needed to maintain or improve the vegetation include a planned grazing system, proper grazing use, good water distribution, and proper season of use.

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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	UT2421											
Description	Excellent Condition											

7. Similar Sites

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

8. Associated Sites Within MLRA

(Give site name and number)

Semidesert Shallow Sandy Loam (Shadscale)	035XY230UT
Semidesert Very Steep Stony Loam (Salina Wildrye)	035XY260UT

9. Correlated Sites in Other States

(Give site name and number)

D. MAJOR USES OF THIS SITE

1. Livestock

a. Site Factors Influencing Management

The suitability for livestock grazing is fair to good. This site provides proper grazing for cattle and sheep during fall, winter, and spring.

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

Species – Cattle	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep
Galleta	VG	F, G	VG	VG
Indian Ricegrass	F, G	VG	VG	VG
Woolly Locoweed	-	-	P	P
Shadscale	F, G	F, G	F, G	F, G
Torrey Mormontea	F, G	F, G	P	P
Bigelow Sagebrush	F, G	P	P	P
Winterfat	VG	VG	F, G	F, G

Species – Sheep	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep
Galleta	F, G	F, G	VG	F, G
Indian Ricegrass	F, G	VG	VG	VG
Woolly Locoweed	-	-	F	P
Shadscale	VG	VG	VG	F, G
Torrey Mormontea	F, G	F, G	P	P
Bigelow Sagebrush	P	F, G	F, G	F, G
Winterfat	VG	VG	VG	VG

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

2. Wildlife

a. Site Factors Influencing Management

This site provides food and limited cover for wildlife.

b. List of Potential Species Present

Wildlife using this site includes coyote, bobcat, jackrabbit, snake, hawk, 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 →	Mule deer		Elk	
	Use	Season	Use	Season
Galleta	B	F, W, Sp, Su	B	F, W, Sp, Su
Indian Ricegrass	A	F, W, Sp, Su	A	F, W, Sp, Su
Woolly Locoweed	B	Sp, Su	C	Sp, Su
Shadscale	B	F, W, Sp, Su	C	F, W, Sp, Su
Torrey Mormontea	B	F, W, Sp, Su	C	F, W, Sp, Su
Bigelow Sagebrush	B	F, W, Sp, Su	C	F, W, Sp, Su
Winterfat	A	F, W, Sp, Su	A	F, W, Sp, Su

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)

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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					

4. Other References