

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: Desert Very Shallow Gypsum (Torrey Mormontea)

SITE NUMBER: 035XY142UT

MLRA: D-35

Original Site Description: Author: GSC

Date: 04/15/1984

Revised Site Description: Author: GSC

Date: 09/22/1993

Revised Site Description: Author: SM

Date: 04/29/2004

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 shallow to shallow over gypsum (4 to 20 inches)

Surface Textures: channery loam, and loam

Surface Fragments (<=3" % cover, >3" % cover): 0 to 15%

Subsurface Textures: loam, channery loam, fine sandy loam, loamy very fine sand

Subsurface Fragments (<=3" % vol. >3" % vol.): 0 to 35%

Geologic Parent Materials: residuum derived mainly from gypsiferous sandstone and shale

Moisture Regime: Typic Aridic

Temperature Regime: Mesic

Runoff: rapid

Permeability (min-max): moderately rapid (2.0 to 6.0 in/hr)

Drainage Class (min-max): well to excessively drained

Water Erosion Hazard: severe

Wind Erosion Hazard: slight to moderate

Electrical Conductivity (EC in mmhos/cm): 0 to 8 mmhos/cm (nonsaline to slightly saline)

Sodium Adsorption Ration (SAR): 0 (nonsodic)

Calcium Carbonate Equivalent (%) 10 to 30%

pH Range (1:1 water): 7.9 to 8.4

Available Water Capacity (inches): 0.5 to 2 inches

Average annual soil loss in potential is approximately 5 tons/acre.

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

Henry Mountains (631): **Goblin** in mapunits 37, 55, 84, 85, 100 & 112.

Capitol Reef NP: **Goblin** in mapunits 110, 130 & 258.

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: remnant hillsides, rolling hills, pediment surfaces, alluvial fans, dissected benches, and upland valley plains.

Aspect: all

	<u>Minimum</u>	<u>Maximum</u>
Slope:	2%	50%
Elevation:	4,300 ft.	6,800 ft.
Flooding:	None	
Frequency:		
Duration:		
Ponding:	None	
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:		

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 5 to 9 inches

Mean Annual Air Temperature: 50°F to 57°F

Mean Annual Soil Temperature: 52°F to 59°F

Frost Free Period (days): 140 to 190 days

Freeze Free Period (days): 140 to 190 days

Temperature and Moisture Distribution:

Climate Stations: St. ID. : 420688 Location: Big Water, Utah Period: From: 5/1986 To: 7/2003

Temperature	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
High Mean	47.4	54.1	65.0	75.3	84.3	95.2	99.8	96.4	88.3	75.3	58.7	47.0	73.9
Average Mean	35.7	41.4	50.1	59.0	67.3	77.3	82.8	80.5	72.0	59.5	45.3	35.1	58.8
Low Mean	24.1	28.7	35.2	42.6	50.2	59.4	65.9	64.6	55.6	43.7	32.0	23.3	43.8

Precipitation	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Highest	3.16	1.66	2.93	2.14	1.18	0.67	1.33	2.29	2.66	3.53	1.33	0.93	9.00
Average Mean	0.52	0.66	0.64	0.43	0.33	0.14	0.52	0.72	0.74	0.85	0.43	0.29	6.27
Lowest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	3.22

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

Influencing Water Features (if any):

<u>Wetland Description</u> (Cowardin System)	<u>System</u>	<u>Subsystem</u>	<u>Class</u>
None			

<u>Stream Types</u> (Rosgen System)	<u>System</u>
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 Torrey Mormontea, shadscale, and matted crinklemat. The composition by air-dry weight is approximately 20% perennial grasses, 20% forbs, and 60% shrubs. Of note, Comb Wash Wild Buckwheat (*Eriogonum clavellatum*) is endemic to this site, possible only found in San Juan County. 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, 15-25%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Galleta	PLJA	0	3	10	5	10
Indian Ricegrass	ACHY	0	3	10	5	10
Sand Dropseed	SPCR	0	2	5	3	5
Alkali Sacaton	SPAI	1	1	3	1	3
Sandhill Muhly	MUPU2	1	1	3	1	3
Needleandthread	HECOC8	1	1	3	1	3
Other Perennial Grasses	PPGG	1	2	5	3	5
Other Annual Grasses	AAGG	1	2	5	3	5

Forbs, 15-25%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Matted Crinklemat	TILA6	0	3	10	5	10
Scarlet Globemallow	SPCO	0	1	5	2	5
Brenda's Yellow Cryptantha	CRFL5	0	1	5	2	5
Badlands Mules-ears	WYSC	0	1	5	2	5
Nakedstem Sunray	ENNU	2	1	3	1	3
Stemless Four-nerve Daisy	TEACA2	2	1	3	1	3
Desert Trumpet	ERIN4	2	1	3	1	3
Redroot Buckwheat	ERRA3	2	1	3	1	3
Rusty Lupine	LUPUP	2	1	3	1	3
Prairie Sunflower	HEPE	2	1	3	1	3
Crescent Milkvetch	ASAM5	2	1	3	1	3
Other Perennial Forbs	PPFF	2	2	5	3	5
Other Annual Forbs	AAFF	2	2	5	3	5

Shrubs, 55-65%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Torrey Mormontea	EPTO	0	10	30	20	30
Shadscale	ATCO	0	5	15	10	15
Rubber Rabbitbrush	ERNAN5	0	5	15	10	15
Yellow Rabbitbrush	CHVI8	3	1	3	1	3
Crispleaf Buckwheat	ERCOA	3	1	3	1	3
Comb Wash Wild Buckwheat	ERCL2	3	1	3	1	3
Broom Snakeweed	GUSA2	3	1	3	1	3
Basin Saltbush	ATTR3	3	1	3	1	3
Narrowleaf Yucca	YUAN2	3	1	3	1	3
Spiny Hopsage	GRSP	3	1	3	1	3
Plains Pricklypear	OPPO	3	1	3	1	3
Other Shrubs	SSSS	3	3	10	5	10

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	150	200
Average Year	50	100
Unfavorable Year	25	50

4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range	Percent Basal Area Cover
Grasses & Grass-like (perennial)	10	0.5-2 ft.	2
Forbs (perennial)	10	0.5-1 ft.	2
Shrubs	40	1-3 ft.	15
Trees	-	-	-
Cryptogams	0-10	0.1-1.0 cm	0-10

b. Other

Litter	0-1%
Coarse Fragments	0-10%
Bare Ground	45-55%

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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, sand dropseed, globemallow, and Needleandthread decrease while Sandhill muhly, matted crinklemat, annual forbs, and desert trumpet increase. Only plants that can tolerate high gypsum and drought could invade this site. Fire does not play an important part in this site.

The suitability for rangeland seeding is very poor to poor. The major limiting factors are the very shallow soil, low available water capacity, high content of gypsum, and low precipitation.

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	25	65	5	0	0	0	0	0	0
Name	PNC											
ID Number	UT1421											
Description	Excellent Condition											

7. Similar Sites

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

Desert Gypsum Loam (Torrey Mormontea) 035XY106UT

8. Associated Sites Within MLRA

(Give site name and number)

Desert Gypsum Loam (Torrey Mormontea) 035XY106UT
 Desert Sand (Sand Sagebrush) 035XY115UT
 Desert Sandy Loam (Fourwing Saltbush) 035XY118UT
 Semidesert Sandy Loam (Fourwing Saltbush) 035XY215UT
 Semidesert Very Steep Stony Loam (Salina Wildrye) 035XY263UT

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 poor. This site provides proper grazing for cattle and sheep during all seasons of the year.

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
Sand Dropseed	P	P	F,G	F,G
Scarlet Globemallow	F,G	P	F,G	F,G
Brenda's Yellow Cryptantha	-	-	P	P
Badlands Mule-ears	P	P	F,G	P
Torrey Mormontea	F,G	F,G	P	P
Shadscale	F,G	F,G	F,G	F,G
Rubber Rabbitbrush	P	P	P	P

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
Sand Dropseed	P	P	F,G	F,G
Scarlet Globemallow	F,G	P	F,G	F,G
Brenda's Yellow Cryptantha	-	-	F	F
Badlands Mule-ears	P	P	F,G	P
Torrey Mormontea	F,G	F,G	P	P
Shadscale	VG	VG	VG	F,G
Rubber Rabbitbrush	P	P	P	P

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 includes jackrabbit, coyote, bobcat, kangaroo rat, mice, snakes, and hawks.

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
Sand Dropseed	C	F, W, Sp, Su	C	F, W, Sp, Su
Scarlet Globemallow	B	F, W, Sp, Su	B	F, W, Sp, Su
Brenda's Yellow Cryptantha	B	Sp, Su	B	Sp, Su
Badlands Mule-ears	C	F, W, Sp, Su	C	F, W, Sp, Su
Torrey Mormontea	B	F, W, Sp, Su	C	F, W, Sp, Su
Shadscale	B	F, W, Sp, Su	C	F, W, Sp, Su
Rubber Rabbitbrush	C	F, W, Sp, Su	C	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)

3. Recreational Uses

Recreation activities are hiking and hunting.

4. Wood Products

None.

5. Other Uses

The soil is in hydrologic group D. The hydrologic curve numbers are 80 to 89 depending on the watershed condition.

E. THREATENED AND ENDANGERED SPECIES

1. Plants – This section will be added as information is available.

2. Animals – This section will be added as information is available.

