

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: Sandy Bottom (Fourwing Saltbush)

SITE NUMBER: 035XY015UT

MLRA: D-35

Original Site Description: Author: GSC

Date: 04/01/1984

Revised Site Description: Author: GSC

Date: 09/09/1993

Revised Site Description: Author: SM

Date: 02/23/2004

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: fine sandy loam and loamy fine sand

Surface Fragments (≤ 3 " % cover, > 3 " % cover): none

Subsurface Textures: fine sandy loam, fine sand, loamy sand, sand, and loamy fine sand

Subsurface Fragments (≤ 3 " % vol. > 3 " % vol.): 0 to 15%

Geologic Parent Materials: mixed alluvium derived mainly from sandstone

(Geologic Formations: Entrada Sandstone; Navajo Sandstone; Alluvium from Upper Carmel Formation; Lower Member of Wahweap Formation; Tropic Shale)

Moisture Regime: Typic Aridic and Ustic Aridic

Temperature Regime: Mesic

Runoff: low

Permeability (min-max): moderately rapid (2.0 to 6.0 in/hr) to rapid (6.0 to 20.0 in/hr)

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

Water Erosion Hazard: slight

Wind Erosion Hazard: moderate to severe

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

Sodium Adsorption Ration (SAR): 0 (nonsodic)

Calcium Carbonate Equivalent (%): 0 – 15%

pH Range(1:1 water): 7.4 to 8.1

Available Water Capacity (inches): 3.5 to 6.0 inches

These soils are sandy with some stratification. Average annual soil loss in potential is approximately 0.5 tons/acre. Suwanee has an available water capacity of 8.8 and a slow (0.06 to 0.2 in/hr) permeability due to the loamier textures (i.e. loam and silt loam).

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

Capitol Reef NP: **Ustic Torrfluvents** in mapunit 215; **Trail** in mapunit 117.
 Grand Staircase Escalante NM (686): **Trail** in mapunits 5065 & 5121; and **Suwanee** in mapunit 5052
 Henry Mountains Area (631): **Glenberg Family** in mapunit 69
 San Juan County – Central Part (638): **Bankard Family** in mapunit 4
 Glen Canyon NRA: **Glenberg Family** in mapunit 145 and **Pherson Family** in mapunit 154
 Canyonlands Area (633): **Trail** in mapunit 95

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

2. PHYSIOGRAPHIC FEATURES

Landform and Position: Low stream terraces, flood plains, alluvial bottoms, channels and valley flats, and alluvial fans.

Aspect: all

	<u>Minimum</u>	<u>Maximum</u>
Slope:	1%	5%
Elevation:	3,800 ft	6,000 ft
Flooding:	Rare	Occasional
Frequency:	Flash Floods	
Duration:		
Ponding:		
Depth (inches):		
Frequency:		
Duration:		
Water Table Depth:	40 inches	greater than 60 inches

B. CLIMATIC FEATURES

Mean Annual Precipitation (inches): 6 to 12 inches

Mean Annual Air Temperature: 45°F to 57°F

Mean Annual Soil Temperature: 47°F to 59°F

Frost Free Period (days):120 to 190 days

Freeze Free Period (days):120 to 190 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.7	0.00	0.00	0.00	0.00	4.79

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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 70-75% occurs as rain from March through October. On the average, April, May, and June are the driest months and August 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

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 Fourwing saltbush and Indian ricegrass. The composition by air-dry weight is approximately 60% perennial grasses, 10% forbs, and 30% shrubs. In average years, plants begin growth around March 1 and end growth around October 15.

2. Plant Community Composition by Weight and Percentage

Grasses and Grasslike, 55-65%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Indian Ricegrass	ACHY	0	110	195	20	30
Galleta	PLJA	0	83	130	15	20
Sand Dropseed	SPCR	0	17	33	3	5
Needleandthread	HECOC8	1	6	20	1	3
Mesa Dropseed	SPFL2	1	6	20	1	3
Bottlebrush Squirreltail	ELEL5	1	6	20	1	3
Inland Saltgrass	DISP	1	6	20	1	3
Purple Threeawn	ARPU9	1	6	20	1	3
Other Perennial Grasses	PPGG	1	28	65	5	10

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Other Annual Grasses	AAGG	1	28	65	5	10
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Forbs, 5-10%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Scarlet Globemallow	SPCO	0	17	33	3	5
Pacific Aster	ASCH2	2	6	20	1	3
Brenda's Yellow Cryptantha	CRFL5	2	6	20	1	3
Desert Trumpet	ERIN4	2	6	20	1	3
James' Buckwheat	ERJA	2	6	20	1	3
Crescent Milkvetch	ASAM5	2	6	20	1	3
Annual Ragweed	AMAR2	2	6	20	1	3
Woolly Plantain	PLPA2	2	6	20	1	3
Rusty Lupine	LUPU	2	6	20	1	3
Skyblue Phacelia	PHCO	2	6	20	1	3
Flatspine Stickseed	LAOC3	2	6	20	1	3
Other Perennial Forbs	PPFF	2	17	33	3	5
Other Annual Forbs	AAFF	2	17	33	3	5

Shrubs/Vines, 25-35%

Common Name	National Symbol	Group	Pounds per Acre		% by Weight of Total Composition	
			Low	High	Low	High
Fourwing Saltbush	ATCA2	0	55	98	10	15
Green Mormontea	EPVI	0	17	33	3	5
Winterfat	KRLA2	0	17	33	3	5
Rubber Rabbitbrush	ERNAN5	3	6	20	1	3
Broom Snakeweed	GUSA2	3	6	20	1	3
Shadscale	ATCO	3	6	20	1	3
Basin Big Sagebrush	ARTRT	3	6	20	1	3
Sand Sagebrush	ARFI2	3	6	20	1	3
Plains Pricklypear	OPPO	3	6	20	1	3
Desert Pepperweed	LEFR2	3	6	20	1	3
Other Shrubs	SSSS	3	28	65	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	800	900
Average Year	550	650
Unfavorable Year	300	400

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4. Ground Cover and Structure

a. Vegetative

Vegetation Type	Percent Canopy Cover	Height Range	Percent Basal Area Cover
Grasses & Grass-like (perennial)	30	0.5 -2 ft.	15
Forbs (perennial)	5	0.5 -1 ft.	2
Shrubs	20	1-4 ft.	5
Trees	-	-	-
Cryptogams	0-5	0.1-1 cm	0-5

b. Other

Litter	1-5
Coarse Fragments	0-5
Bare Ground	30-45

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, and other perennial grasses decrease while galleta, purple threeawn, annual forbs, and broom snakeweed increase. When the potential natural community is burned, fourwing saltbush will decrease while cheatgrass, annual forbs, galleta, broom snakeweed, and some other perennial grasses will increase. Cheatgrass, rushpea, bird's beak, common ragweed, Russian thistle, and common sunflower 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	25	65	5	0	0	0	0	0	0
Name	PNC											
ID Number	UT0151											
Description	Excellent Condition											

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7. Similar Sites

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

8. Associated Sites Within MLRA

(Give site name and number)

Semidesert Sandy Loam (Fourwing Saltbush)	035XY215UT
Semidesert Sand (Fourwing Saltbush)	035XY212UT
Desert Sand (Sand Sagebrush)	035XY115UT
Semiwet Fresh Streambank (Fremont Cottonwood)	035XY013UT

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 cattle and sheep in the spring summer, and fall.

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

Species - Cattle	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep
Indian Ricegrass	F, G	VG	VG	VG
Galleta	VG	F, G	VG	VG
Sand Dropseed	P	P	F, G	F, G
Scarlet Globemallow	F, G	P	F, G	F, G
Fourwing Saltbush	F, G	VG	F, G	F, G
Green Mormontea	F, G	F, G	P	P
Winterfat	VG	VG	F, G	F, G

Species - Sheep	Oct-Nov	Dec-Feb	Mar-May	Jun-Sep
Indian Ricegrass	F, G	VG	VG	VG
Galleta	F, G	F, G	VF	F, G
Sand Dropseed	P	P	F, G	F, G
Scarlet Globemallow	F, G	P	F, G	F, G
Fourwing Saltbush	VG	VG	VG	VG
Green Mormontea	F, G	F, G	P	P
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 cover for wildlife.

b. List of Potential Species Present

Wildlife using this site includes jackrabbit, coyote, bobcat, dove, hawk, kangaroo rat, mice and snake.

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
Indian Ricegrass	A	F, W, Sp, Su	A	F, W, Sp, Su
Galleta	B	F, W, Sp, Su	B	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
Fourwing Saltbush	A	F, W, Sp, Su	B	F, W, Sp, Su
Green Mormontea	C	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)

3. Recreational Uses

Recreation activities are hunting and hiking.

4. Wood Products

None

5. Other Uses

The soil series is in hydrologic group A. The hydrologic curve numbers are between 39 and 68 depending on the condition of the watershed.

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.

F. MODAL LOCATION AND DOCUMENTATION

State: Utah County: Kane
 Latitude: Longitude:
 Section: Township: Range:

General Legal Description:

Capitol Reef: **Trail** – Lower Halls Creek; 1,500 ft. N of the SE corner of Sec. 12, T. 37S. R. 9E.
Ustic Torrfluvents – modal not in this site.
 Grand Staircase: **Trail** – SE of Escalante, along the Hole in the Rock Road, near the Dry Fork of Coyote Gulch; and between Lake Powell and Smokey Mountain in Smokey Hollow, Tibbet Canyon, Wesses Canyon, and Warm Creek. (Modal: Latitude 37° 27' 3.0" Longitude: 111° 9' 50.0") **Suwanee** – SE of Escalante, along the Hole in the Rock Road on Sunset Flat. (Modal: not in this site)

San Juan County – Central Part: Red Canyon Wash in section 27 & 34 T 36 S, R 14 E

Field Office Site Location

Legal Description:

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