

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R-037XA027NM

Site Name: Sandstone Upland

Precipitation or Climate Zone: 5-8" pz

Phase: _____

Original Site Description Approval:

Site Date: _____

Site Author: _____

Site Approval: George Chavez

Approval Date: 2/29/2000

Revisions:

Revision Date: 2/25/02

Revisor: DT

Revision Approval: _____

Approval Date: _____

Revision Notes: Update to new Ecological Site format.

PHYSIOGRAPHIC FEATURES

Narrative:

This upland site occurs on summits of mesas, structural benches, and dipslopes of cuestas on undulating plateaus. It occurs on all exposures, It is associated with sandstone rock outcrops. Slopes range from 1 to 25 percent. Elevations range from 4,900 to 6,100 feet.

Land Form:

1. Cuesta dipslope

2. Mesa summits

3. Cuesta escarpment

Aspect:

1. Occurs on all aspects

2.

3.

	Minimum	Maximum
Elevation (feet)	4900	6100
Slope (percent)	1	25
Water Table Depth (inches)	60	60
	Minimum	Maximum
Flooding:		
Frequency	None	None
Duration		
	Minimum	Maximum
Ponding:		
Depth (inches)		
Frequency	None	None
Duration	None	None

Runoff Class:

Medium to very high

CLIMATIC FEATURES

Narrative:

Mean annual precipitation varies from 7 to 10 inches. About 60 percent of this moisture come as rain during the months of April through October. May and June are the driest months. Most of the moisture from November through March comes as snow. Winds of high velocity during late winter and early spring are common.

Mean temperatures for the hottest month, July, are about 83⁰ F. The coldest month is January, when the mean temperature is about 27⁰ F. Extreme temperatures of 104⁰ F. for a high and -17⁰ F. for a low have been recorded. Frost-free period ranges from 140 to 160 days.

The cool-season plants start growth in March and end with plant maturity and seed dissemination about mid-June. During June, July, August and September, the warm-season plants make optimum growth taking advantage of the warm temperature and moisture from tropical air out of the Gulf of Mexico. About 40 percent of the total precipitation is received during these summer months. The other 60 percent received during the fall-winter-spring months influence cool-season plants.

	Minimum	Maximum
Frost-free period (days):	140	160
Freeze-free period (days):	145	165
Mean annual precipitation (inches):	7	10

Monthly moisture (inches) and temperature (⁰F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.52	.62	11	42.6
February	.43	.63	17.3	50.9
March	.45	.72	22.2	60.1
April	.46	.55	28.1	69.8
May	.38	.56	36.6	79.2
June	.27	.66	45.8	89.2
July	.58	1.43	53.9	94
August	.95	1.62	52	91.1
September	.83	1.28	43.5	83.7
October	.84	1.15	31.2	71.8
November	.66	.76	20.6	54.9
December	.59	.71	12.4	43.8

Climate Stations:					
Station ID		Location		Period	
				From:	To
298284		Shiprock NM		1961	1990
					:
293340		Fruitland 2 E, NM		1961	1990
					:
293134		Farmington 3 NE, NM		1961	1990
					:
291647		Chaco Canyon Natl. Mon, NM		1961	1990
					:
296465		Otis, NM		1961	1990
					:
					:

INFLUENCING WATER FEATURES

Narrative:
This site is not influenced by water from wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:
N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils are very shallow to shallow and well drained. They are formed in eolian, residuum and alluvium derived from sandstone. Surface textures include fine sand and channery loamy fine sand. Subsoil has textures of fine sandy loam, channery fine sandy loam and channery loamy fine sand. Hard sandstone is at depths ranging from 8 to 10 inches. Permeability based on the most restrictive horizon above 20 inches is slow to very slow. Available water capacity is very low. Runoff is medium to very high and the hazard of water erosion is moderate to severe. The hazard of soil blowing is severe. The soils are mildly to moderately alkaline (pH 7.4 – 8.4), non-saline to very slightly saline (EC0-4) and non-to slightly sodic (SAR 0-13).

Characteristic taxonomic units are:

Shiprock SSA:

115-Denazin-Farb fine sands (Farb Part)

135-Farb-Rock outcrop-Badland Complex (Farb part)

205-Shiprock-Farb Complex (Farb Part)

Other soils included are:

Parent Material Kind: Eolian, residuum and alluvium

Parent Material Origin: Sandstone and shale

Surface Texture:

1. Fine sand

2. Loamy fine sand

3.

Surface Texture Modifier:

1. Channery

2.

3.

Subsurface Texture Group: Sandy

Surface Fragments $\leq 3''$ (% Cover):	<u>0-35</u>
Surface Fragments $> 3''$ (% Cover):	<u>0-35</u>
Subsurface Fragments $\leq 3''$ (% Volume):	<u>0-35</u>
Subsurface Fragments $\geq 3''$ (% Volume):	<u>0-35</u>

	Minimum	Maximum
Drainage Class:	<u>Well drained</u>	<u>Excessively drained</u>
Permeability Class:	<u>Moderately rapid</u>	<u>Moderately rapid</u>
Depth (inches):	<u>8</u>	<u>10</u>
Electrical Conductivity (mmhos/cm):	<u>0</u>	<u>4</u>
Sodium Absorption Ratio:	<u>0</u>	<u>13</u>
Soil Reaction (1:1 Water):	<u>7.4</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl ₂):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>1</u>	<u>2</u>
Calcium Carbonate Equivalent (percent):	<u>?</u>	<u>?</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 Narrative Label: HCPC

Plant Community Narrative:

This site has a plant community made up primarily of grasses, shrubs and some forbs. In the original plant community there is a mixture of both cool and warm season plants.

Plant species most likely to invade or increase on this site when it deteriorates are broom snakeweed, alkali sacaton shadscale and annual forbs. Continuous livestock grazing use during the winter and spring periods will decrease the cool season grasses, which are replaced by lower forage value grasses and shrubs.

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs _____
Bare ground _____
Surface cobble and stone _____
Litter (percent) _____
Litter (average depth in cm.) _____

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	65	98	163
Forb	5	7	12
Tree/Shrub/Vine	30	45	75
Lichen			
Moss			
Microbiotic Crusts			
Totals	100	150	250

16	ARBI3	Bigelow sagebrush	8-15	8-15
17	EPTO	Torrey mormontea	2-5	2-5
18	EPAR	Sand mormontea	0-3	0-3
19	CHGR6	Greene rabbitbrush	0-5	0-5
20	GUSA2	Broom snakeweed	2-8	2-8
21	ATCA2	Fourwing saltbush	0-3	0-3
22	ATCO	Shadscale	0-5	0-5
23	YUAN2	Narrowleaf yucca	0-2	0-2
24	2SHRUB	Other shrubs	0-8	0-8

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Growth Curves

Growth Curve ID _____

Growth Curve Name: 037XA-1

Growth Curve Description: Average Precipitation Year

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
7	6	7	6	6	5	11	14	12	12	8	7

ECOLOGICAL SITE INTERPRETATIONS

Animal Community: _____

The potential plant community provides a variety of food and cover plants for wildlife. Where sandstone outcrops occur, they are important cover areas for various wildlife species.

Hydrology Functions:

This site normally receives approximately 7-10 inches annual precipitation. Most summer rainfall occurs as brief sometimes-heavy thunderstorms. Slopes range from 1 to 25 percent. . Soils are very shallow to shallow and rated as being in hydrologic group D. Permeability is slow to very slow. Available water capacity is very low. Runoff is medium to very high and the hazard of water erosion is moderate to severe.

Recreational Uses:

Wildlife observations, rock hounding, horseback riding, photography and hiking are all recreational activities that can be enjoyed on this site. Care must be taken to prepare for cold winters, and hot dry summer temperatures.

Wood Products:

This site has no significant value for wood products.

Other Products:

Grazing: This site is suitable for yearlong grazing by all classes of livestock. Planned grazing systems can be applied to this site. When deteriorated, this site responds rather slowly to good management.

Other Information:

Plant Preference by Animal Kind:

	Code	Species Preference	Code
Stems	S	None Selected	N/S
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruit/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Indian ricegrass	<i>Achnatherum hymenoides</i>	EP	P	P	P	P	P	D	D	D	P	P	P	P
Galleta	<i>Pleuraphis jamesii</i>	EP	D	D	D	D	D	D	P	P	P	D	D	D
NM feathergrass	<i>Hesperostipa neomexicana</i>	EP	P	P	P	P	D	D	D	D	D	D	D	P
Blue grama	<i>Bouteloua gracilis</i>	EP	D	D	D	D	D	D	P	P	P	D	D	D
Alkali sacaton	<i>Sporobolus airoides</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Fendler threeawn	<i>Aristida purpurea</i> var. <i>fendleriana</i>	EP	D	D	U	U	U	U	U	U	U	U	D	D
Bottlebrush squirreltail	<i>Elymus elymoides</i>	EP	P	P	P	D	D	D	D	D	D	D	D	D
Spike dropseed	<i>Sporobolus contractus</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Sand dropseed	<i>Sporobolus cryptandrus</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Eastwood sandwort	<i>Arenaria eastwoodiae</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Smallflower aster	<i>Chaetopappa ericoides</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Perennial forbs		EP	P	P	P	P	P	P	P	P	P	P	P	P
Annual forbs		EP	P	P	P	P	P	P	P	P	P	P	P	P
Bigelow sagebrush	<i>Artemisia bigelovii</i>	S, L	D	D	D	U	U	U	U	U	U	D	D	D
Torrey mormontea	<i>Ephedra torreyana</i>	S, L	U	U	U	U	U	U	U	U	U	U	U	U
Sand mormontea	<i>Ephedra x arenicola</i>	S, L	U	U	U	U	U	U	U	U	U	U	U	U
Greene rabbitbrush	<i>Chrysothamnus greenei</i>	S, L	U	U	U	U	U	U	U	U	U	U	U	U
Broom snakeweed	<i>Gutierrezia sarothrae</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Fourwing saltbush	<i>Atriplex canescens</i>	S, L	P	P	D	D	D	D	D	D	D	D	D	P
Shadscale	<i>Atriplex confertifolia</i>	S, L	D	D	D	U	U	U	U	U	D	D	D	D
Narrowleaf yucca	<i>Yucca angustissima</i>	F	U	U	U	P	P	P	U	U	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

Inventory Data References (narrative):

The potential historic climax plant community has been determined by study of range relict areas, or areas protected from excessive grazing. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures and historical accounts have also been used

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

State Correlation:

This site has been correlated with the following sites: _____

Type Locality:

State: NM

County: San Juan

Latitude: _____

Longitude: _____

Township: 26N

Range: 18W

Section: 3

Is the type locality sensitive? Yes No

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:
 Guide for assigning the Class of Permeability from Soil Properties (Exhibit 618-9) NSSH.
 (Runoff Classes Guide) part-618.50 NSSH.