

**UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE**

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R070XB072NM

**Site Name:** Shallow Sandstone

**Precipitation or Climate Zone:** 13 to 16 inches

**Phase:** \_\_\_\_\_

## PHYSIOGRAPHIC FEATURES

### **Narrative:**

This site is on gently sloping to moderately steep canyon walls, hillsides and mesa tops. Elevation ranges from 4,000 to 5,500 feet above sea level. The landscape is typically a complex of small pockets of soil and sandstone outcrop in the form of ledges.

Slopes are usually 5 to 15 percent but may range for 0 (flat rock areas) to 25 percent with inclusions of short steeper slopes.

### **Land Form:**

1. Mesa
2. Scarp slope
3. Break

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	4,000	5,500
<b>Slope (percent)</b>	0	25
<b>Water Table Depth (inches)</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Flooding:</b>		
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Ponding:</b>		
<b>Depth (inches)</b>	N/A	N/A
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A

### **Runoff Class:**

Negligible to medium.

## CLIMATIC FEATURES

### **Narrative:**

The climate of this area can be classified as “semi-arid continental”.

Annual average precipitation ranges from 13 to 16 inches. About seventy eight percent of the moisture usually falls during the six-month period of May through October. Most of this summer precipitation falls in the form of brief and heavy afternoon and evening thunderstorms. Hail may accompany the more severe summer storms. In the winter, there is normally only one day a month when as much as one-tenth inch of moisture falls, usually in the form of snow. Snow seldom lies on the ground for more than a few days.

Temperatures are characterized by a distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm. Maximum temperature average above 90 degrees F from July to August and an average summer includes about 80 days with high readings exceeding 90 degrees F and 10 days with readings above 100 degrees F. Temperatures usually fall rapidly after sundown and low of 60 degrees F on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in midwinter usually rise to the 50's. However, freezing temperatures normally occur at night from mid-November to mid-March.

The freeze-free season ranges from 190 to 197 days. Dates of the last freeze are April 11<sup>th</sup> to April 17<sup>th</sup> and the first freeze varies from October 20<sup>th</sup> to October 25<sup>th</sup>.

Both temperature and rainfall distribution favor warm-season, perennial plant communities in the area. However, sufficient late winter and early spring moisture allows a cool-season species to occupy a minor component within the plant community

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	<b>Minimum</b>	<b>Maximum</b>
<b>Frost-free period (days):</b>	<u>164</u>	<u>196</u>
<b>Freeze-free period (days):</b>	<u>190</u>	<u>218</u>
<b>Mean annual precipitation (inches):</b>	<u>13</u>	<u>16</u>

**Monthly moisture (inches) and temperature (°F) distribution:**

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.23	0.46	21.6	57.3
February	0.30	0.44	24.0	59.2
March	0.46	0.65	29.1	68.0
April	0.36	0.92	36.3	78.3
May	0.42	1.68	45.7	82.6
June	1.20	1.86	52.2	91.2
July	2.03	2.73	59.1	92.9
August	2.09	2.75	58.1	91.0
September	1.65	1.92	51.1	84.8
October	1.23	1.93	40.1	74.7
November	0.46	0.88	28.9	63.0
December	0.37	0.62	22.1	54.6

**Climate Stations:**

Station ID	Location	Period
290205	Alamogordo Dam, NM	From: 1972 To: 2000
293292	Fort Sumner, NM	From: 01/01/14 To: 2000
297254	Ramon 8SW, NM	From: 03/04/57 To: 122/31/01
298596	Sumner Lake. NM	From: 01/0121 To: 12/31/01
299851	Yeso, NM	From: 01/01/48 To: 12/31/01

**INFLUENCING WATER FEATURES**

**Narrative:**

This site is not influenced by water form a wetland or stream.

**Wetland description:**

System	Subsystem	Class
N/A		

**If Riverine Wetland System enter Rosgen Stream Type:**

N/A

## REPRESENTATIVE SOIL FEATURES

### **Narrative:**

These are well drained, shallow soils on sandstone bedrock. The surface texture is fine sandy loam, silt loam or stony types of these textures. The texture of the subsurface layer is stony loam to sandy clay loam. Sandstone is at depths of less than 20 inches. Air-water relationship is favorable for plant growth. Rock fragments make up 5 to 30 percent of the soil profile.

**Parent Material Kind:** Colluvium

**Parent Material Origin:** Sandstone-unspecified

### **Surface Texture:**

1. Fine sandy loam
2. Loam
3. Silt loam
4. Stony fine sandy loam
5. Stony loam
6. Stony silt loam

### **Surface Texture Modifier:**

1. Stone
2. Rock
- 3.

**Subsurface Texture Group:** Loamy

**Surface Fragments <=3" (% Cover):** 0

**Surface Fragments >3" (% Cover):** 15 to 35

**Subsurface Fragments <=3" (%Volume):** 0

**Subsurface Fragments >=3" (%Volume):** 15 to 35

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Well
<b>Permeability Class:</b>	Moderately slow	Moderately rapid
<b>Depth (inches):</b>	<10	20
<b>Electrical Conductivity (mmhos/cm):</b>	N/A	N/A
<b>Sodium Absorption Ratio:</b>	N/A	N/A
<b>Soil Reaction (1:1 Water):</b>	6.6	8.4
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	N/A	N/A
<b>Available Water Capacity (inches):</b>	0	3
<b>Calcium Carbonate Equivalent (percent):</b>	N/A	N/A

## **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:** Historic Climax Plant Community

Short and mid-grasses dominate this site. Juniper and shrubs are associated with the very shallow soils near the bare ledges of rock outcrops. Grasses occupy approximately 70 percent of the total annual herbage production with shrubs and perennial and annual forbs evenly distributed.

Canopy Cover:

Trees	0 – 3 %
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 25
Bare ground	20 – 25
Surface gravel	5
Surface cobble and stone	15 – 20
Litter (percent)	20
Litter (average depth in cm.)	2

**Plant Community Annual Production (by plant type):** \_\_\_\_\_

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	336	630	924
Forb	32	60	88
Tree/Shrub/Vine	32	60	88
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	400	750	1,100

**Plant Community Composition and Group Annual Production:**

**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2	Blue Grama	75 – 113	75 – 113
2	BOCU	Sideoats Grama	75 – 113	75 – 113
3	SCSC	Little Bluestem	75 – 113	75 – 113
4	HENE5	New Mexico Feathergrass	38 – 75	38 – 75
5	BOER4	Black Grama	38 – 75	38 – 75
6	ANHA	Sand Bluestem	38 – 75	38 – 75
7	BOHI2 LYPH	Hairy Grama Wolftail	23 – 38	23 – 38
8	ARIST	Threeawn spp.	23 – 38	23 – 38
9	SPCR	Sand Dropseed	23 – 38	23 – 38
10	2GRAM	Other Grasses	23 – 38	23 – 38

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	LATHY	Peavine	23 – 38	23 – 38
12	LESQU CACO17 SPHAE ASTRA	Bladderpod Indian Paintbrush Globemallow spp. Astragalus spp.	23 – 38	23 – 38
13	2FORB	Other Forbs	23 – 38	23 – 38

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	JUNIP	Juniper spp.	0 – 38	0 – 38
15	PIED YUCCA RHTR NOMI ARFI2 2SD	Pinyon Pine Yucca spp. Skunkbush Sumac Sacahuista Sand Sagebrush Other Shrubs	23 – 38	23 – 38

**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

Other species that could appear include: silver bluestem, cane bluestem, rough tridens, catclaw acacia, broom snakeweed, mesquite and woolly groundsel.

**Plant Growth Curves**

Growth Curve ID 4012NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed short and mid-grasses with evenly scattered forbs and shrubs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

## **ECOLOGICAL SITE INTERPRETATIONS**

### **Animal Community:**

Habitat for Wildlife:

This site provides habitat, which support a resident animal community that is characterized by mule deer, bobcat, spotted skunk, eastern cottontail, rock squirrel, rock mouse, great horned owl, scrub jay, canyon wren, prairie rattlesnake and eastern fence lizard.

There is nesting use of the juniper and shrub foliage by roadrunner, magpie, mockingbird and loggerhead shrike.

### **Hydrology Functions:**

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

#### **Hydrologic Interpretations**

<b>Soil Series</b>	<b>Hydrologic Group</b>
Lacoca	D
Latom	D
Minor Components	D
Travessilla	D

### **Recreational Uses:**

This site has good aesthetic appeal and natural beauty with its large variety of plants that bloom from early spring to late fall. The physiographic features break the “wide open space” of the plains. This site has fair suitability for camping, hiking and picnicking. Hunting is fair for deer, rabbits and quail hunting is fair to good. This site provides fair screening. Photography and birdwatching for small birds and raptors is fair.

### **Wood Products:**

Production of juniper and pinyon provide limited fuel for firewood and a limited quantity of fence posts.

**Other Products:**

**Grazing:**

This site can be grazed any season of the year by all classes and ages of livestock. Because of the slopes and rock outcrops, a younger age of livestock utilized this site best. Browsing animals should be considered because of the site's potential to produce shrubs and forbs. Continuous yearlong grazing or grazing continually during the potential growing season (April – October) by cattle will result in a decrease of species such as sideoats grama, little bluestem, New Mexico feathergrass, black grama and winterfat. Species such as hairy grama, juniper, ring muhly and broom snakeweed will increase. On sites with scattered juniper continuous heavy grazing pressure will allow juniper to increase to give the appearance of dominating the site. A system of deferred grazing by domestic livestock, which varies the season of grazing and rest during successive years, will result in a healthy, well-balanced plant community. Fall and winter rest will benefit shrubby species such as winterfat. Spring rest (April – June) will allow cool-season grasses to complete their life cycle. Cattle show a definite seasonal preference on black grama and usually utilize it heavily during the late winter from January to March. A large variety of grasses, forbs and shrubs provide a well-balanced feed and good nutrition for all grazing animals. Ninety percent of the annual production is from species that provide forage for grazing animals.

**Other Information:**

**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	3.4 – 4.4
75 – 51	4.3 – 5.7
50 – 26	5.6 – 8.0
25 – 0	8.0 +

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

**Plant Preference by Animal Kind:**

**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
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	P	P	P	P	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Sand Bluestem	Andropogon hallii	EP	D	D	D	D	P	P	P	P	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	P	P	P	P	P	P	D	D	D	D

**Animal Kind:** Livestock

**Animal Type:** Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sand Bluestem	Andropogon hallii	EP	D	D	D	D	P	P	P	P	D	D	D	D

**Animal Kind:** Livestock

**Animal Type:** Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	P	P	P	P	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Bigelow Sagebrush	Artemisia bigelovii	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	Castilleja coccinea	EP	U	U	D	D	D	D	D	D	U	U	U	U

**Animal Kind:** Wildlife

**Animal Type:** Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Sand Sagebrush	<i>Artemisia filifolia</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Bigelow Sagebrush	<i>Artemisia bigelovii</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Bladderpod	<i>Lesquerella</i> spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Peavine	<i>Lathyrus</i> spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	<i>Castilleja coccinea</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U

**SUPPORTING INFORMATION**

**Associated sites:**

Site Name	Site ID	Site Narrative

**Similar sites:**

Site Name	Site ID	Site Narrative

**State Correlation:**

This site has been correlated with the following sites: \_\_\_\_\_

**Inventory Data References:**

Data Source	# of Records	Sample Period	State	County

**Type Locality:**

State: New Mexico

County: De Baca

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Township: \_\_\_\_\_

Range: \_\_\_\_\_

Section: \_\_\_\_\_

Is the type locality sensitive?    Yes             No

General Legal Description: \_\_\_\_\_

**Relationship to Other Established Classifications:**

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: San Miguel, Quay, Guadalupe, De Baca and Chaves.

Characteristic Soils Are:

Lacoca	Latom
Minor Components	Travessilla
<u>Other Soils included are:</u>	

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	07/26/78	Don Sylvester	07/26/78

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	12/24/02	George Chavez	2/12/03