

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R070XC114NM

**Site Name:** Shallow Sand

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

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

## **PHYSIOGRAPHIC FEATURES**

### **Narrative:**

This site occurs on nearly level to gently sloping undulating topography with slopes ranging up to 15 percent. Slope average is 3 to 5 percent by may range as high as 15 percent. Aspect varies but is not significant. It occurs at elevations ranging from 4,400 to 6,600 feet above sea level. The differentiating characteristics of this site are shallow sandy loams occurring from 5 to 10 inches over caliche.

### **Land Form:**

1. Alluvial flat,
2. Plain
- 3.

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	4,400	6,600
<b>Slope (percent)</b>	3	15
<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 the area is ‘semi-arid continental.’”

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are common. Seventy-five percent of the precipitation falls during the frost-free season. Most of the summer moisture falls in the form of high-intensity, short-duration thunderstorms. Winter precipitation is mostly in the form of snowfalls of less than 6 inches.

Temperatures are characterized by moderately warm summers and fairly cool, dry winters. The average annual temperature is 50 degrees F with extremes of –29 degrees F in the winter to 103 degrees F in the summers.

The average frost-free season is 130 to 160 days. The last killing frost falls in early May and the first killing frost in early October.

Both temperature and precipitation favor warm season perennial species. However, about 40 percent of the annual precipitation falls at a time favorable to cool season plant growth. This allows the cool season species to occupy an important component of the site. Strong winds blow across this area from the west and southwest from February through June, which can dry the soil profile rapidly during a critical period for cool season plant growth.

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>131</u>	<u>173</u>
<b>Freeze-free period (days):</b>	<u>155</u>	<u>187</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	.34	.92	15.6	42.1
February	.34	.81	19.9	52.9
March	.23	.98	24.4	59.7
April	.39	.96	31.4	68.9
May	.85	1.61	39.2	77.7
June	.89	1.62	46.9	87.1
July	1.77	2.75	53.1	88.5
August	2.46	3.22	51.9	85.7
September	1.54	2.26	44.3	80.4
October	1.00	1.51	32.8	70.5
November	.57	1.02	22.2	57.5
December	.34	1.16	15.9	49.3

**Climate Stations:**

Station ID	Location	Period
291918	Clines Corners 7SE, NM	From: 12/10/68 To: 11/30/00
292096	Corona 11SSW, NM	From: 12/01/77 To: 09/30/92
293060	Estancia, NM	From: 01/01/14 To: 12/31/00
293649	Gran Quivira Natl. Monument, NM	From: 06/01/38 To: 12/31/00
295965	Mountainair, NM	From: 03/01/14 To: 12/31/00
299405	Vaughn, NM	From: 01/01/71 To: 12/31/00

**INFLUENCING WATER FEATURES**

**Narrative:**

This site is not influenced by water from 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:**

The soils on this site are shallow to very shallow over hard caliche. The surface texture ranges from fine sandy loam to sandy loam. Depth is usually less than 10 inches occurring over hard caliche. The soils are well drained. Permeability is rapid to moderately rapid. Available water-holding capacity is low. The plant-water-air-soil relationship is good.

**Parent Material Kind:** Alluvium

**Parent Material Origin:** Sandstone - unspecified

**Surface Texture:**

1. Fine sandy loam
2. Sandy loam
3. Loamy fine sand

**Surface Texture Modifier:**

1. N/A
2.
3.

**Subsurface Texture Group:** Sandy

**Surface Fragments <=3" (% Cover):** N/A

**Surface Fragments >3" (% Cover):** N/A

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

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

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Well
<b>Permeability Class:</b>	Moderately rapid	Rapid
<b>Depth (inches):</b>	5	20
<b>Electrical Conductivity (mmhos/cm):</b>	0.00	2.00
<b>Sodium Absorption Ratio:</b>	N/A	N/A
<b>Soil Reaction (1:1 Water):</b>	7.9	8.4
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	N/A	N/A
<b>Available Water Capacity (inches):</b>	2	2
<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

This site is a grassland characterized by a mixture of warm-season, short and mid-grasses with half-shrubs and shrubs widely scattered. Woody species and forbs are a minor component of the plant community. Forbs are plentiful during years of abundant rainfall. Cool-season grasses make up a minor component of the plant community.

Canopy Cover:

Trees	0
Shrubs and half shrubs	3 to 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 25
Bare ground	35 – 45
Surface cobble and stone	0 – 5
Litter (percent)	5 – 10
Litter (average depth in cm.)	2

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

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	390	663	936
Forb	40	68	96
Tree/Shrub/Vine	40	68	96
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	500	850	1,200

**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	BOER4	Black Grama	170 – 213	170 – 213
2	BOCU	Sideoats Grama	85 – 128	85 – 128
3	SCSC	Little Bluestem	85 – 128	85 – 128
4	HENE5 HECO26	New Mexico Feathergrass Needleandthread	85 – 128	85 – 128
5	BOHI2 BOGR2	Hairy Grama Blue Grama	85 – 128	85 – 128
6	SPCR	Sand Dropseed	26 – 43	26 – 43
7	ARIST	Threawn spp.	26 – 43	26 – 43
8	2GRAM	Other Grasses	26 – 43	26 - 43

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	CRPOP ERIOG PLPA2	Leather Croton Wildbuckwheat Wooly Indianwheat	26 – 43	26 – 43
10	2FORBS	Other Perennial and Annual Forbs	26 – 43	26 - 43

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	KRLA2 YUGL	Winterfat Small Soapweed	26 – 43	26 – 43
12	JUMO RHTR NOMI	Oneseed Juniper Skunkbush Sumac Sacahuista (Nolina)	26 – 43	26 – 43
13	2SD	Other Shrubs	26 – 43	26 - 43

**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 grasses that could appear on this site include: sand muhly, sand bluestem, mesa dropseed, plains bristlegrass, red lovegrass, wolftail, bush muhly, Indian ricegrass, and Arizona cottontop. Other shrubs can include: cholla cactus, broom snakeweed, sand sagebrush and Bigelow sagebrush.

Other forbs can include: scarlet globemallow, silverleaf nightshade, verbena, annual mustard and astragalus species.

**Plant Growth Curves**

**Growth Curve ID** 4314NM

**Growth Curve Name:** HCPC

**Growth Curve Description:** Warm-season, mixed short/mid grasses w/ shrub and half-shrub component

<b>Jan.</b>	<b>Feb.</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
<b>0</b>	<b>0</b>	<b>5</b>	<b>7</b>	<b>10</b>	<b>15</b>	<b>25</b>	<b>25</b>	<b>8</b>	<b>5</b>	<b>0</b>	<b>0</b>

## **ECOLOGICAL SITE INTERPRETATIONS**

### **Animal Community:**

Habitat for wildlife:

This site provides habitat which support a resident animal community that is characterized by pronghorn antelope, blacktail jackrabbit, spotted ground squirrel, plains pocket mouse, southern plains woodrat, horned lark, scaled quail, round-tailed horned lizard.

### **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>
Pastura	D

### **Recreational Uses:**

Recreation potential is limited. Suitability for camping, picnicking and hiking are poor to fair and limited mainly by the lack of live water and the lack of shade. Hunting is good for antelope, quail, dove and small game. The terrain typical of the “wide open spaces” enhances aesthetic appeal. The natural beauty of this site is enhanced by the variety of flowering plants that bloom from early spring to late fall with the availability of precipitation.

### **Wood Products:**

This site produces no significant wood products. There may be enough wood produced for campfire purposes.

**Other Products:**

**Grazing:**

This site is suitable for grazing by all kind and classes of livestock during all seasons of the year. Approximately 80 percent of the total annual yield are from species that furnish forage to grazing animals. Continuous grazing during the growing season will cause the more desirable forage plants such as black grama, sideoats grama, little bluestem, and New Mexico feathergrass to decrease. Species most likely to increase are hairy grama, sand dropseed, threeawn, oneseed juniper, sacahuista and skunkbush sumac. As the ecological conditions deteriorate, it is accompanied by a sharp increase of hairy or blue grama. Most of the mid-grass species will disappear as the deterioration advances. In some areas, there may be large patches of skunkbush sumac, sacahuista or oneseed juniper that will increase to the point that it is dominating the site. As the condition deteriorates, it is usually accompanied by the loss of plant cover, which causes a wind erosion hazard, and a loss of productivity. A system of deferred grazing, which varies the time of grazing and rest in pastures during successive years is needed to maintain or improve the plant community. Rest during April, May and June benefit cool species such as New Mexico feathergrass and needleandthread. Late spring and summer rest is needed for little bluestem and sideoats grama to grow and reproduce. Rest during the winter is beneficial mainly to black grama. Cattle show a definite preference to black grama during the late winter and it is usually over utilized. Winter rest will reduce the grazing pressure on black grama. Where sheep have historically grazed New Mexico feathergrass or needleandthread grass may increase and dominate the site.

**Other Information:**

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

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	2.4 – 3.2
75 – 51	3.0 – 4.3
50 – 26	4.0 – 6.9
25 – 0	6.9+

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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	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
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	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:** 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	P	P	P	P	P	P	P	P	P	P	P	P
Perennial/annual Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P

**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
Perennial/annual forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D

**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: Chavez, De Baca, Guadalupe, Lincoln, San Miguel, Santa Fe, Torrance

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

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

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

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

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

Is the type locality sensitive?    Yes             No

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

**Relationship to Other Established Classifications:**

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**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: Chaves, De Baca, Guadalupe, Lincoln, Sna Miguel, Santa Fe, Torrance.

**Characteristic Soils Are:**

Pastura	
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**Other Soils included are:**

Yeso	
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**Site Description Approval:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	02/02/82	Donald H. Fulton	03/03/82

**Site Description Revision:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	06/20/02	George Chavez	12/17/02