

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R077BY028NM

**Site Name:** Sandy Plains

**Precipitation or Climate Zone:** 15 to 19 inches

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

## PHYSIOGRAPHIC FEATURES

### **Narrative:**

This site occurs on level to gently undulating sloping eolian and alluvial sediments on the uplands. Characteristically, the landscape is hummocky. Elevation ranges from 3,600 to 4,800 feet above sea level. Slope ranges from 0 to 9 percent. Exposure varies and is not significant.

### **Land Form:**

1. Plain
2. Sheet sand
- 3.

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
Elevation (feet)	3,600	4,800
Slope (percent)	0	9
Water Table Depth (inches)	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Flooding:</b>		
Frequency	N/A	N/A
Duration	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Ponding:</b>		
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	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 15 to 19 inches. Seventy percent of the moisture usually falls during the six-month period 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. Spring precipitation (March, April, May) accounts for approximately 25 percent of the annual precipitation. Most of this comes as light rain showers. Winter moisture may occur as either rain or snow and usually averages less than ½ inch per month.

Temperatures are characterized by distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm; maximum temperatures average above 90 degrees F in July and August. Temperatures usually fall rapidly after sundown and range in the low 60’s on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in mid-winter usually rise to the 50’s. However, freezing temperatures normally occur at night from mid-November to mid-March.

The frost-free season ranges from 181 to 199 days. Dates of the last freeze vary from April 10<sup>th</sup> to April 23<sup>rd</sup> and the first freeze varies from October 18<sup>th</sup> to October 26<sup>th</sup>.

Wind velocities in this area are high and average about 5.3 miles per hour on an annual basis. The spring months are characterized by frequent windstorms with velocities in excess of 45 miles per hour, which cause excessive erosion on soils not protected by a good ground cover of vegetation. Humidity is low and evaporation is high.

Both temperature and rainfall distribution favor production of warm-season, perennial plants in this area. However, sufficient late winter and early spring moisture allows cool-season species to occupy an important component within most plant communities.

Climate data was obtained from the WCCR web site using 50 % probabilities for freeze-free and frost-free season using 28.5 degrees F and 32.5 degrees F respectively.

	<b>Minimum</b>	<b>Maximum</b>
<b>Frost-free period (days):</b>	<u>175</u>	<u>183</u>
<b>Freeze-free period (days):</b>	<u>191</u>	<u>202</u>
<b>Mean annual precipitation (inches):</b>	<u>15</u>	<u>19</u>

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.43	.50	21.8	52.8
February	.43	.66	25.0	57.7
March	.68	.80	30.0	64.7
April	.90	1.05	38.1	73.4
May	2.01	2.35	47.3	81.8
June	2.13	2.67	56.1	90.9
July	2.80	3.25	60.6	93.4
August	2.80	3.05	59.4	91.2
September	1.66	2.17	52.4	85.1
October	1.29	1.37	41.5	75.0
November	.59	.72	30.3	62.5
December	.49	.65	22.1	53.5

**Climate Stations:**

Station ID	Location	From:	To:
291332	Cameron, NM	01/01/48	05/31/98
295516	McCarty Ranch, NM	11/01/83	12/31/01
297226	Ragland 3SSW, NM	02/01/35	12/31/01
297867	San Jon, NM	01/01/14	12/31/01

**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 of this site are deep and well drained. The surface textures are fine sandy or loamy fine sand from 10 to 36 inches thick. The textures of the argillic subsoil are sandy clay loam, fine sandy loam or loamy fine sand. In some soils, a calcic horizon occurs at a depth of 20 to 40 inches. The soils have moderately rapid or moderate permeability. The available water-holding capacity is moderate to high. The plant-soil-air-water relationship is good. Because of the coarse surface textures, the soils, if unprotected by plant cover and organic residue, becomes wind blown and low hummocks or dunes are formed around shrubs.

**Parent Material Kind:** Eolian sands

**Parent Material Origin:** Sandstone - unspecified

### **Surface Texture:**

1. Loamy fine sand
2. Fine sand
3.

### **Surface Texture Modifier:**

1. N/A
2.
3.

**Subsurface Texture Group:** Loamy

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

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

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

**Subsurface Fragments >=3" (%Volume):** N/A

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Well
<b>Permeability Class:</b>	Moderately slow	Moderately rapid
<b>Depth (inches):</b>	40	>72
<b>Electrical Conductivity (mmhos/cm):</b>	0.00	4.00
<b>Sodium Absorption Ratio:</b>	N/A	N/A
<b>Soil Reaction (1:1 Water):</b>	6.1	9.0
<b>Soil Reaction (0.1M CaCl2):</b>	N/A	N/A
<b>Available Water Capacity (inches):</b>	6	12
<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 dominated by warm-season, tall and mid-grasses. Cool-season bunchgrasses, shrubs and half-shrubs, and forbs occupy approximately 40 to 45 percent of the plant community and are evenly distributed. The forb composition fluctuates from year to year depending upon moisture conditions.

Canopy Cover:

Trees	0
Shrubs and half shrubs	15 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30
Bare ground	30
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	25
Litter (average depth in cm.)	4

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

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	1,050	1,575	2,100
Forb	225	338	450
Tree/Shrub/Vine	225	338	450
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	1,500	2,250	3,000

**Plant Community Composition and Group Annual Production:** Plant species are grouped by annual production **not** by functional groups.

**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	ANHA	Sand Bluestem	405 – 450	405 – 450
2	SCSC	Little Bluestem	225 – 270	225 – 270
3	SPCR SPCO4	Sand Dropseed Spike Dropseed	158 – 225	158 – 225
4	HENE5	New Mexico Feathergrass	135 – 180	135 – 180
5	NECO26	Needleandthread	68 – 113	68 – 113
6	BOHI2	Hairy Grama	68 – 113	68 – 113
7	ARIST	Threeawn spp.	68 – 113	68 – 113
8	BOCU	Sideoats Grama	68 – 113	68 – 113
9	BOER4	Black Grama	68 – 113	68 – 113
10	PASE5 DICOA RESE SEVU2	Sand Paspalum Fall Witchgrass Red Lovegrass Plains Bristlegrass	68 – 113	68 – 113
11	SONU2 PAVI2	Indiangrass Switchgrass	68 – 113	68 – 113
12	ACHY	Indian Ricegrass	23 – 68	23 – 68
13	2GA CAREX	Other Annual Grasses Sedges	0 – 45	0 - 45

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	STSY SPHAE ERAN4 HEAN3	Queensdelight Globemallow spp. Annual Buckwheat Annual Sunflower	68 – 113	68 – 113
15	2FA	Other Annual Forbs	45 – 90	45 – 90
16	2FP	Other Perennial Forbs	45- 90	45 – 90
17	AMPS MEMU3 GAVI2 BRASS2 DALEA	Western Ragweed Stickleaf Wooly Beeblossom Annual Mustard Dalea spp.	0 – 68	0 – 68



**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
18	ARFI2	Sand Sagebrush	113 – 158	113 – 158
19	YUGL	Small Soapweed	68 – 113	68 – 113
20	ERICA	Rabbitbrush (Plains) spp.	23 – 68	23 – 68
21	PRANW	Sand Plum	23 – 68	23 – 68
22	RHTR	Skunkbush Sumac	23 – 68	23 – 68
23	SENEC GUSA2	Groundsel spp. Broom Snakeweed	23 – 45	23 – 45
24	OPPO EPVI	Plains Pricklypear Cactus Mormon-tea	0 – 45	0 – 45

**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 5203NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season, tall and mid-grasses grassland with major forb and shrub components.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

## **ECOLOGICAL SITE INTERPRETATIONS**

### **Animal Community:**

Habitat for Wildlife:

No Data

### **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>
Amarillo	B
Arch	B
Brownfield	A
Clovis	B
Drake	B
Gomez	B
Mansker	B
Springer	A, B

### **Recreational Uses:**

Recreation potential is limited due to the lack of access roads for two-wheel drive vehicles, lack of live water and the lack of shade. The terrain typical of the “wide open spaces” of the area enhances aesthetic appeal. Hunting for upland game birds and antelope is fair. The natural beauty is enhanced by the variety of flowering plants that bloom from early spring to fall and the varying color hues of vegetation as it matures.

### **Wood Products:**

This site produces no wood products.

**Other Products:**

**Grazing:**

This site can be grazed any season of the year by all classes of livestock, generally without regard to age. However, cattle most efficiently utilize it. The variety of grasses, forbs and half-shrubs furnishes good nutrition to grazing animals during most seasons of the year.

Approximately 90 percent of the annual production furnish forage for grazing animals.

Continuous grazing or grazing continually during the period from April to October by cattle will result in a plant community dominated by low forage value species such as sand dropseed, sand sagebrush, yucca and threeawn spp. Sand sagebrush and yucca may increase to the extent that they are the dominant vegetation. A system of deferred grazing, which varies the season of grazing and rest, is needed to maintain or to improve a healthy well-balanced plant community. Rest in different seasons benefits different plants. Winter rest will benefit all woody species. Spring rest (April-June) encourages forb production and will benefit New Mexico feathergrass, Indian ricegrass and needleandthread. Summer rest (July-September) benefits warm-season grasses such as sand bluestem, sideoats grama and little bluestem to grow and reproduce. Fall rest allows plants to complete their growth cycle. New Mexico feathergrass and needleandthread are utilized readily by cattle in the spring and fall and least utilized in the summer when the awns interfere with utilization and may injure cattle. Although utilization in June is detrimental to stands of needleandthread and New Mexico feathergrass, a quick, moderate cropping when the heads are in the boot state of development can remove the heads and prevent subsequent interference and injury to cattle by awns. For this purpose, the timing and degree of use must be determined on limited areas, preferably when soil moisture is adequate for regrowth, and should be followed by a period of deferment. Sand sagebrush can be controlled by concentrating cattle during the late winter and early spring followed by deferment until October.

**Other Information:**

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

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	1.8 – 3.0
75 – 51	2.3 – 4.3
50 – 26	3.0 – 8.6
25 – 0	8.6+

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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Silver Bluestem	<i>Bothriochloa saccharoides</i>	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
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	P	P	P	P	D	D	D	D	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	<i>Hesperostipa comata</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Sand Bluestem	<i>Andropogon hallii</i>	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
Indiangrass	<i>Sorghastrum nutans</i>	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
Switchgrass	<i>Panicum virgatum</i>	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
Plains Bristlegrass	<i>Setaria vulpiseta</i>	EP	D	D	D	D	P	P	P	P	P	D	D	D
Indian Ricegrass	<i>Achnatherum hymenoides</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U

**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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	P	P	P	P	D	D	D	D	D
Indian Ricegrass	<i>Achnatherum hymenoides</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P

**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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	D	D	D	D	P	P	P	P	P	D	D	D
Plains Bristlegrass	<i>Setaria vulpiseta</i>	EP	D	D	D	D	P	P	P	P	P	D	D	D
Indian Ricegrass	<i>Achnatherum hymenoides</i>	EP	P	P	P	P	D	D	D	D	D	D	P	P
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U
Globemallow	<i>Sphaeralcea spp.</i>	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
Buckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	U	U	U	U
Perennial 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
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
Globemallow	Sphaeralcea spp.	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: Curry, Harding, Quay

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 Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Curry, Harding, & Quay.

Characteristic Soils Are:

Amarillo, Arch, Brownfield, Clovis, Drake	Gomez, Mansker, Springer
<u>Other Soils included are:</u>	

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester		Don Sylvester	

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	08/29/02	George Chavez	09/12/02