

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC120NM

Site Name: Shallow Plains

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site is nearly level to undulating in topography with some slopes ranging up to 10 percent. Aspect varies but is not significant. It occurs at elevations ranging from 4,400 to 6,000 feet above sea level. The differentiating characteristics of this site are the shallow sands occurring from 10 to 20 inches over bedrock or caliche.

Land Form:

1. Plain
2. Sand sheet
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4,400	6,600
Slope (percent)	0	10
Water Table Depth (inches)	N/A	N/A
	Minimum	Maximum
Flooding:		
Frequency	N/A	N/A
Duration	N/A	N/A
	Minimum	Maximum
Ponding:		
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 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 and 103 degrees F in the summer.

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 rainfall distribution favor warm-season, perennial plant communities in this area. However, sufficient late winter early spring moisture allows cool-season species to occupy a minor component within the plant community. Wind velocities in this area are high. The spring months are characterized by frequent windstorms with velocities in excess of 45 miles per hour. Excessive erosion occurs on soils not protected by good cover vegetation. Humidity is low and evaporation is high.

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.

	Minimum	Maximum
Frost-free period (days):	<u>131</u>	<u>173</u>
Freeze-free period (days):	<u>155</u>	<u>187</u>
Mean annual precipitation (inches):	<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 of this site consist of fine sands and loamy sands that are shallow in depth. Depth is from 10 to 20 inches occurring over caliche, gypsum, sandstone or limestone. The soils are well drained. Permeability is rapid. Available water-holding capacity is low. The plant-water-soil-air relationship is good.

Parent Material Kind: Eolian sands

Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Fine sands

2. Loamy sands

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

	Minimum	Maximum
	<u>Well</u>	<u>Well</u>
Drainage Class:	Moderately rapid	Rapid
Permeability Class:	10	20
Depth (inches):	0.00	2.00
Electrical Conductivity (mmhos/cm):	N/A	N/A
Sodium Absorption Ratio:	7.4	8.4
Soil Reaction (1:1 Water):	N/A	N/A
Soil Reaction (0.1M CaCl2):	0	3
Available Water Capacity (inches):	N/A	N/A
Calcium Carbonate Equivalent (percent):		

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, mid and tall grasses. The grassland is dotted with shrubs and half-shrubs. Forbs are a minor component of the plant community but are plentiful during years of abundant rainfall. Cool season grasses make up a minor component of the plant community.

Canopy Cover:

Trees	2 – 5 %
Shrubs and half shrubs	3 – 6 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 25
Bare ground	40 – 50
Surface cobble and stone	0
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	546	819	1,092
Forb	56	84	112
Tree/Shrub/Vine	91	137	182
Lichen			
Moss			
Microbiotic Crusts			
Total	700	1,050	1,400

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 BOHI2	Blue Grama Hairy Grama	105 – 158	105 – 158
2	SCSC	Little Bluestem	105 – 158	105 – 158
3	BOCU	Sideoats Grama	158 – 210	158 – 210
4	BOER4	Black Grama	53 – 158	53 – 158
5	HENE5	New Mexico Feathergrass	53 – 105	53 – 105
6	ANHA	Sand Bluestem	105 – 158	105 – 158
7	SEVU	Plains Bristlegrass	32 – 53	32 – 53
8	SPCR SPFL2	Sand Dropseed Mesa Dropseed	32 – 53	32 – 53
9	2GRAM	Other Grasses	32 – 53	32 - 53

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	PLPA2 CRPOP SPCO SRIOG	Wooly Indianwheat Leatherweed Croton Scarlet Globemallow Annual Wildbuckwheat	32 – 53	32 – 53
11	2FORBS	Other Perennial & Annual Forbs	32 – 53	32 - 53

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	RHTR MIACB NOMI JUNIP	Skunkbush Sumac Catclaw Mimosa Sacahuista Juniper	53 – 105	53 – 105
13	YUGL	Small Soapweed	32 – 53	32 – 53
14	2SD	Other Shrubs	32 – 53	32 - 53

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: threeawns, bottlebrush squirreltail, plains, bush and sand muhly, Arizona cottontop, and Indian ricegrass.

Other shrubs include: broom snakeweed, algerita, sand and Bigelow sagebrush, cactus spp., fourwing saltbush, and winterfat.

Other forbs include: verbena, annual mustard, purple nightshade, curly dock, tansymustard, Russian thistle, and astragalus spp.

Plant Growth Curves

Growth Curve ID 4320NM

Growth Curve Name: HCPC

Growth Curve Description: Warm season mixed short/mid & tall grasses w/ shrubs & half-shrubs and a minor forb component.

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

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

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

Hydrology Functions:

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

Hydrologic Interpretations

Soil Series	Hydrologic Group
Cardenas	D

Recreational Uses:

Recreation potential is limited. The suitability for camping, picnicking and hiking is poor to fair and limited mainly by lack of live water and the lack of shade. Hunting is good for antelope, quail, dove and small game. The terrain typical of "wide open spaces" enhances aesthetic appeal. The natural beauty of the 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 has no significant potential for wood products.

Other Products:

Grazing:

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Approximately 80 percent of the total yield are from species that furnish forage for grazing animals. Continuous grazing during the growing season will cause the more desirable forage plants such as little bluestem, sideoats grama, black grama, New Mexico feathergrass, and sand bluestem to decrease. Species most likely to invade the site are annual forbs, western ragweed, mesquite, and oneseed juniper. Species most likely to increase are blue grama, hairy grama, sand muhly, threeawn, sand dropseed, skunkbush sumac, or sacahuista. As the ecological condition deteriorates, it is accompanied by a sharp increase in blue grama. Most of the tall and mid-grass species will disappear as deterioration advances. In some areas, there may be large patches of skunkbush sumac, catclaw acacia or sacahuista that will increase to the point where it is dominating the site. As the condition deteriorates, it is usually accompanied by loss in plant cover, which causes 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 benefits cool-season species such as New Mexico feathergrass and early forbs. Late spring and summer rest is needed for little bluestem, sideoats grama, and sand bluestem 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 can easily be over utilized. Winter rest will reduce the grazing pressure on black grama.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.5 – 3.8
75 – 51	3.5 – 5.0
50 – 26	4.6 – 8.0
52 – 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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Sand Bluestem	Andropogon hallii	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	Setaria vulpiseta	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

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
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
Woolly Indianwheat	Plantago purshii	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
Leatherweed Croton	Pottsii pottsii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Scarlet Globemallow	Sphaeralcea coccinea	EP	U	U	P	P	P	D	D	D	D	D	D	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
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
Woolly Indianwheat	Plantago purshii	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
Leatherweed Croton	Pottsii pottsii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Scarlet Globemallow	Sphaeralcea coccinea	EP	U	U	P	P	P	D	D	D	D	D	D	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, Guadalupe

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:

Cardenas	
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Other Soils included are:

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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	07/01/02	George Chavez	12/17/02