

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R070XC119NM

**Site Name:** Gravelly

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

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

## PHYSIOGRAPHIC FEATURES

### **Narrative:**

This site occurs on piedmont slopes and ridges, usually at the toe of slopes of higher hills and mountains. Slopes vary from 0 to 30 percent, but are generally 5 to 15 percent. Direction of slope varies but is not significant. Elevations range from 5,400 to 7,000 feet above sea level.

### **Land Form:**

1. Fan piedmont
2. Ridge
- 3.

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	5,400	7,000
<b>Slope (percent)</b>	0	30
<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 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 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 this 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 very deep. Surface textures range from loam to sandy loam with gravels and stones on the surface and throughout the profile. They usually make up 25 to 60 percent of the volume of the soil profile and are the key soil factor, which characterizes this site. Permeability is moderate to moderately rapid. The water-holding capacity is moderate. Due to the elevated position on the landscape, this soil is subject to scouring by high winds. Soils on this site cause quick plant response to light showers since gravels in the soil concentrate available moisture.

**Parent Material Kind:** Alluvium

**Parent Material Origin:** Mixed

**Surface Texture:**

1. Gravelly loam

2. Gravelly sandy loam

3. Stony clay

4. Gravelly clay

**Surface Texture Modifier:**

1. Gravel

2. Stone

3.

**Subsurface Texture Group:** Loamy

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

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

**Subsurface Fragments <=3" (%Volume):** 15 to 60

**Subsurface Fragments >=3" (%Volume):** 15 to 60

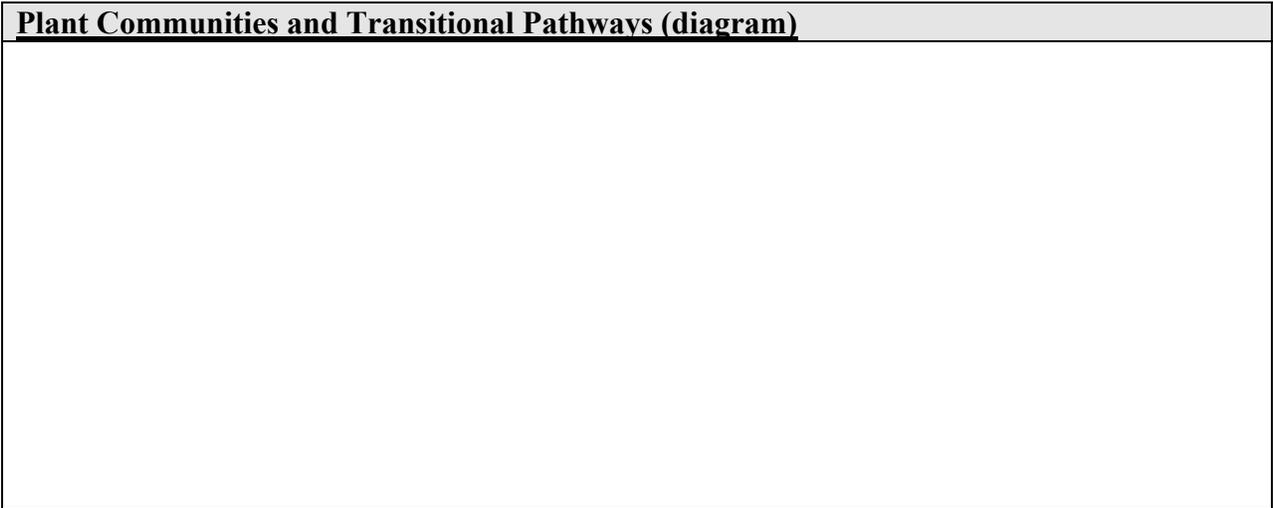
	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Excessively
<b>Permeability Class:</b>	Very slow	Moderately rapid
<b>Depth (inches):</b>	4	>72
<b>Electrical Conductivity (mmhos/cm):</b>	0.00	4.00
<b>Sodium Absorption Ratio:</b>	N/A	N/A
<b>Soil Reaction (1:1 Water):</b>	6.6	9.0
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	N/A	N/A
<b>Available Water Capacity (inches):</b>	2	5
<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 characterized by mid- and short grasses with scattered shrubs and half-shrubs also quite prevalent. Scattered oneseed juniper and occasional pinyon are also found on this site, increasing in density with increase in elevation.

Canopy Cover:

Trees	3 – 5 %
Shrubs and half shrubs	3 – 5
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	10 – 15
Bare ground	20 – 35
Surface cobble and stone	35 – 65
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	292	548	803
Forb	32	60	88
Tree/Shrub/Vine	60	113	165
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	BOER	Black Grama	113 – 225	113 – 225
2	BOGR2 BOHI	Blue Grama Hairy Grama	75 – 150	75 – 150
3	BOCU	Sideoats Grama	75 – 225	75 – 225
4	NECO26 NEHE5	Needleandthread New Mexico Feathergrass	113 – 225	113 – 225
5	LYPH	Wolftail	38 – 75	38 – 75
6	ERIN SEVU2	Plains Lovegrass Plains Bristlegrass	38 – 60	38 – 60
7	ELEL5	Bottlebrush Squirreltail	23 – 38	23 – 38
8	PASM PAOB	Western Wheatgrass Vine-mesquite	0 – 38	0 – 38
9	ARIST	Threeawn	23 – 38	23 – 38
10	PLJA	Galleta	8 – 38	8 – 38
11	2GRAM	Other Grasses	8 – 38	8 - 38

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	PENST	Penstemon	8 – 23	8 – 23
13	SPCO	Scarlet Globemallow	8 – 23	8 – 23
14	CACO17	Indian Paintbrush	8 – 23	8 – 23
15	SEFLF	Threadleaf Groundsel	4 – 23	4 – 23
16	2FORBS	Other Forbs	4 – 15	4- 15

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
17	JUNIP PIED	Juniper Pinyon	15 – 38	15 – 38
18	FAPA	Apacheplume	8 – 38	8 – 38
19	RHTR RHMI3	Skunkbush Sumac Littleleaf Sumac	8 – 38	8 – 38
20	KRLA2	Winterfat	38 – 75	38 – 75
21	EPVI	Mormontea	8 – 23	8 – 23
22	YUCCA	Yucca	15 – 38	15 – 38
23	MATR3	Algerita	8 – 23	8 – 23
24	2SD	Other Shrubs	8 – 38	8 - 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 grasses that can appear on this site include: threeawn, pinyon and littleseed ricegrass, sand dropseed, little bluestem, curlyleaf muhly, cane and silver bluestem, scribner needlegrass, and bush muhly.

Other shrubs can include: fourwing saltbush, Bigelow sagebrush, sagewort spp., fringed sage, wolfberry, sacahuista, broom snakeweed.

Other forbs can include: soft groundcherry, wooly Indianwheat, and fleabane.

**Plant Growth Curves**

**Growth Curve ID** 4319NM

**Growth Curve Name:** HCPC

**Growth Curve Description:** Mixed short/mid-grassland w/ major shrub component and scattered oneseed juniper and pinyon.

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 for a wildlife community characterized by pronghorn antelope, blacktailed jackrabbit, desert cottontail, coyote, pocket mouse, collared lizard, short-horned lizard, meadowlark, and horned lark. On portions of this site with juniper and pinyon, mule deer, white-throated woodrat, scrub jay, and chipping sparrow characterize this site.

### **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>
Andergeorge	B
Andok	B
Chilton	B
Hogadero	B
Ildefonso	B
Oro Grande	B
Pajara	C
Patos	C
Pena	B
Plack	D
Scholle	B
Tesajo	B
Washoe	B

### **Recreational Uses:**

This site offers limited potential for camping, backpacking, or hiking. Hunting for antelope and small game is fair. This site provides natural beauty in spring with wildflowers and as a foreground to hills and mountains, which usually rise above it.

**Wood Products:**

This site has very limited potential for wood products. Those areas, which do support trees generally, have very low productivity potential.

**Other Products:**

Grazing:

This site is suited for grazing by all classes and kinds of livestock during all seasons of the year. Grazing animals tend to prefer this and other shallow upland sites early in the spring due to warmer soil temperatures, and earlier growth of plants than nearby lowland sites. Due to the variety of potentially grazeable plants and their growth response during different seasons of the year, this site is well suited to grazing management, which includes deferment on a regular basis during the growing season of the key grazing species. Spring and fall deferment will aid in increasing New Mexico feathergrass, needleandthread, and bottlebrush squirreltail. Summer deferment will favor an increase of the grama grasses, plains lovegrass, and plains bristlegrass. Continuous yearlong grazing will lead to a decrease in these desirable species and an increase in unpalatable species such as threeawn, sand dropseed, broom snakeweed, and undesirable forbs, and a subsequent increase in wind and water erosion.

**Other Information:**

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.3 – 3.3
75 – 51	3.0 – 4.0
50 – 26	4.0 – 6.5
25 – 0	6.5+

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
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	D	P
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Plains Lovegrass	<i>Eragrostis intermedia</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
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	P	P	P	P	P	P	D	D	D	D
Blue Grama	<i>Bouteloua gracilis</i>	EP	D	D	D	D	P	P	P	P	P	P	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
Penstemon	<i>Penstemon spp.</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
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	D	P
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	D	D	D	D	D	D	U
Vine-mesquite	<i>Panicum obtusum</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
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	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
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	P	P	P	U	U	U	U	U	U	U
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Sumac	<i>Rhus spp.</i>	L/S	P	P	P	D	D	D	D	D	D	P	P	P

**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, Socorro, 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:**

Andergeorge, Andok, Chilton, Hogadero	Ildefonso, Oro Grande, Pajara, Patos, Plack
Scholle, Tesajo, Washoe	

**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	06/20/02	George Chavez	12/17/02