

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R070XA016NM

**Site Name:** Gravelly Upland

**Precipitation or Climate Zone:** 14 to 16 inches

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

## **PHYSIOGRAPHIC FEATURES**

### **Narrative:**

This site is located on old alluvial terraces along drainageways and on fans along mountain foot slopes. Slopes are convex and range from 3 to 25 percent on all aspects. Elevation ranges from 5,300 to 7,200 feet above sea level.

### **Land Form:**

1. Alluvial fan
2. Terrace
- 3.

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	5,300	7,200
<b>Slope (percent)</b>	3	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”.

Precipitation averages 14 to 16 inches. Seventy seven percent of the year’s moisture normally falls during the period of May through October. Practically all of it is brought by brief afternoon and evening thunderstorms. In July and August, normally the wettest months of the year, one can expect about one day in five when rainfall exceeds one-tenth inch. Early spring precipitation in May benefits the cool-season plants. Winter precipitation, supplying 24 percent of the year’s moisture, normally has no more than two days a month with as much as one-tenth inch of moisture. Much of the winter precipitation falls as snow.

Air temperatures vary from a monthly mean of 20 degrees F in January to 69 degrees F in July. Daily high temperatures average in the 80’s and low 90’s during the summer. Winter low temperatures fall below the freezing mark much of the time from November through March with minimum temperatures approaching 25 degrees F below zero. Dates of the last killing frost may vary from May 9<sup>th</sup> through May 17<sup>th</sup>, and the first killing frost from September 27<sup>th</sup> to October 8<sup>th</sup>. The frost-free season ranges from 141 days to 153 days from early May to early October.

Wind velocities for the area average 10 to 12 miles per hour and prevail from the south and southwest. Generally, March is the windiest month. Strong winds during the spring cause rapid drying of the soil surface.

Nearby mountains to the west intercept much of the precipitation from the Pacific storms coming through this area during the winter. About 70 percent of the 14 to 16 inches of annual precipitation falls in the form of rainfall during the frost-free season. About 40 percent of the annual precipitation benefits cool-season plants, 50 percent benefits warm-season plants and 10 percent falls during the season of plant dormancy. Relative humidity is moderately low. The sun shines approximately 75 percent of the time.

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>	132	149
<b>Freeze-free period (days):</b>	153	171
<b>Mean annual precipitation (inches):</b>	14	16

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.27	.40	10.4	48.2
February	.26	.43	14.1	52.7
March	.56	.78	20.4	59.6
April	.85	1.20	28.7	67.9
May	1.68	2.49	38.3	76.4
June	1.77	2.21	46.3	85.7
July	2.53	3.43	50.9	88.8
August	2.95	3.57	50.6	86.6
September	1.56	2.02	42.9	80.7
October	1.02	1.20	31.4	71.4
November	.44	.59	19.9	57.6
December	.25	.51	12.3	50.5

**Climate Stations:**

		Period					
Station ID	<u>293706</u>	Location	<u>Grenville, NM</u>	From:	<u>01/01/41</u>	To:	<u>12/31/01</u>
Station ID	<u>294856</u>	Location	<u>Las Vegas FAA Airport, NM</u>	From:	<u>01/01/41</u>	To:	<u>12/31/01</u>
Station ID	<u>295490</u>	Location	<u>Maxwell, NM</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>297280</u>	Location	<u>Raton KRTN Radio, NM</u>	From:	<u>12/01/78</u>	To:	<u>12/31/01</u>
Station ID	<u>298501</u>	Location	<u>Springer, NM</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>299330</u>	Location	<u>Valmora, NM</u>	From:	<u>03/01/17</u>	To:	<u>12/31/01</u>

**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 are deep, well drained to somewhat excessively drained soils with gravelly loam and gravelly sandy loam surface layers. The subsurface layers are gravelly loam and gravelly sandy loam. They have moderate permeability. The available water-holding capacity is moderate to high. The effective rooting depth is 40 to 60 inches. Air and water move freely through these soils.

**Parent Material Kind:** Alluvium

**Parent Material Origin:** Mixed

### **Surface Texture:**

1. Gravelly loam
2. Gravelly sandy loam
3. Very gravelly sandy loam

### **Surface Texture Modifier:**

1. Gravel
2.
3.

**Subsurface Texture Group:** Loamy

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

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

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

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

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	<u>Well</u>	<u>Well</u>
<b>Permeability Class:</b>	<u>Moderately slow</u>	<u>Moderate</u>
<b>Depth (inches):</b>	<u>40</u>	<u>&gt;72</u>
<b>Electrical Conductivity (mmhos/cm):</b>	<u>0.00</u>	<u>2.00</u>
<b>Sodium Absorption Ratio:</b>	<u>N/A</u>	<u>N/A</u>
<b>Soil Reaction (1:1 Water):</b>	<u>7.4</u>	<u>8.4</u>
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	<u>N/A</u>	<u>N/A</u>
<b>Available Water Capacity (inches):</b>	<u>6</u>	<u>12</u>
<b>Calcium Carbonate Equivalent (percent):</b>	<u>N/A</u>	<u>N/A</u>

## **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 is a plant community that is dominated by mid-grasses, with scattered woody species making up an important part of the plant community. Perennial and annual forbs are evenly distributed and make up a minor part of the plant community. Blue grama, alkali sacaton and western wheatgrass are the most abundant species. Grasses make up 75 percent of the composition, woody species make up about 15 percent and forbs make up about 10 percent.

Canopy Cover:

Trees	0
Shrubs and half shrubs	15 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30
Bare ground	43
Surface gravel	2
Surface cobble and stone	0
Litter (percent)	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	456	722	988
Forb	48	76	104
Tree/Shrub/Vine	96	152	208
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	600	950	1,300

**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	190 – 238	190 – 238
2	SPAI	Alkali Sacaton	143 – 190	143 – 190
3	PASM	Western Wheatgrass	143 – 190	143 – 190
4	PAOB	Vine-mesquite	67 – 95	67 – 95
5	PLJA	Galleta	67 – 95	67 – 95
6	BOCU	Sideoats Grama	67 – 95	67 – 95
7	BUDA	Buffalograss	48 – 67	48 – 67
8	MUCU3	Plains Muhly	29 – 48	29 – 48
9	MUWR	Spike Muhly	29 – 48	29 – 48
10	MURI	Mat Muhly	10 – 29	10 – 29
11	ARIST	Threeawn spp.	29 – 48	29 – 48
12	MUTO2	Ring Muhly	29 – 48	29 – 48
13	ELEL5	Bottlebrush Squirreltail	0 – 19	0 – 19

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	AMPS	Western Ragweed	19 – 38	19 – 38
15	SPHAE	Globemallow spp.	10 – 29	10 – 29
16	ERWR	Wright Buckwheat	10 – 29	10 – 29
17	OXYTR	Locoweed spp.	10 – 29	10 – 29
18	ERIOG	Wild Buckwheat	10 – 29	10 – 29
19	2FP	Other Perennial Forbs	19 – 48	19 – 48
20	2FA	Other Annual Forbs	10 – 29	10 – 29

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
21	ATCA2	Fourwing Saltbush	67 – 95	67 – 95
22	KRLA2	Winterfat	29 – 48	29 – 48
23	OPSP2	Cholla Cactus	10 – 29	10 – 29
24	OPPO	Plains Pricklypear Cactus	10 – 29	10 – 29
25	GUSA2	Broom Snakeweed	10 – 29	10 – 29
26	QUERC	Oak spp.	19 – 48	19 – 48
27	JUNIP	Juniper spp.	10 – 29	10 – 29
28	LYPA	Pale Wolfberry	10 – 29	10 – 29
29	YUCCA	Yucca spp.	0 – 10	0 – 19
30	ARFR4	Fringed Sagewort	0 – 19	0 – 19

**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 3716NM

Growth Curve Name: HCPC

Growth Curve Description: Mid-grasses grassland with a major shrub component and a minor forb component.

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:

This site provides habitats which support a resident animal community that is characterized by mule deer, coyote, desert cottontail, thirteen-lined ground squirrel, marsh hawk, scaled quail, roadrunner, western racer and toad.

### **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>
Mion	C
Tinaja	B

### **Recreational Uses:**

This site has good aesthetic appeal and natural beauty. It is fair for screening, camping, hiking and picnicking. Hunting is fair for deer and rabbits and fair winter range for deer.

### **Wood Products:**

This site produces no significant wood products except limited wood from juniper for firewood.

**Other Products:****Grazing:**

Approximately 80 percent of the total annual yield are from species that furnish forage for grazing or browsing. A large variety of grasses, shrubs and forbs provide good nutrition to grazing animals. This site can be used any season of the year by all classes of animals.

Continuous yearlong grazing or grazing from the period of April through September will result in a plant community dominated by blue grama and galleta. Cholla cactus and juniper also increase, and the plant cover will be reduced. When adequate cover is lacking, this site is subject to severe sheet and gully erosion due to the very slow water intake rate of the soils. A system of deferred grazing, which varies the season of grazing and rest in pastures during successive years, results in a healthy well-balanced plant community. Winter rest will benefit shrubs such as fourwing saltbush and winterfat. Spring rest (April-June) will allow western wheatgrass to grow and to reproduce; it will also allow alkali sacaton sufficient time to green up. Summer rest (July-September) will benefit all other warm-season plants.

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

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	2.5 – 4.6
75 – 51	2.9 – 5.6
50 – 26	4.5 – 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
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Vine-mesquite	<i>Panicum obtusum</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Winterfat	<i>Krascheninnikovia lanata</i>	L/A	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
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	D	D	P	P	P	D	D	D	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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	D	D	D	D	P	P	P	P	P	D	D	D
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	U	U	U	U	U	U	D	D	D	D

**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
Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	EP	U	U	P	P	P	D	D	D	D	D	D	U

**Animal Kind:** Wildlife

**Animal Type:** Deer

Common Name	Scientific Name	Plant Part	Forage Preferences												
			J	F	M	A	M	J	J	A	S	O	N	D	
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	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: Colfax, Mora

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: Colfax, Mora, San Miguel, Union.

**Characteristic Soils Are:**

Mion	Tinaja
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**Other Soils included are:**

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**Site Description Approval:**

<b>{PRIVATE} Author</b>	<b>Date</b>	<b>Approval</b>	<b>Date</b>
Don Sylvester	07/27/77	Don Sylvester	07/27/77

**Site Description Revision:**

<b>{PRIVATE} Author</b>	<b>Date</b>	<b>Approval</b>	<b>Date</b>
Elizabeth Wright	08/28/02	George Chavez	12/17/02