

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R077BY005NM

**Site Name:** Shallow Sandstone (CP-1, HP-2)

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

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

## **PHYSIOGRAPHIC FEATURES**

### **Narrative:**

This site is on gently sloping to moderately steep canyon walls, hillsides and mesa tops at elevations of 5,500 to 7,500 feet above sea level. The landscape is typically a complex of small pockets of soil and sandstone outcrop in the form of ledges and escarpments.

Slopes are usually 5 to 15 percent but may range 0 to 25 percent with inclusions of short, steeper slopes.

### **Land Form:**

1. Hillside
2. Mesa
- 3.

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	5,500	7,500
<b>Slope (percent)</b>	0	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 is 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 on 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>	<u>132</u>	<u>149</u>
<b>Freeze-free period (days):</b>	<u>153</u>	<u>171</u>
<b>Mean annual precipitation (inches):</b>	<u>14</u>	<u>16</u>

**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:**

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

These are well drained, shallow soils on sandstone bedrock. The surface texture is fine sandy loam, loam, silt loam or the channery, flaggy, or stony types of these textures. The texture of the subsurface layers is flaggy or stony loam to clay loam. Sandstone bedrock is at depths of less than 20 inches. Permeability is moderate. The available water-holding capacity is low. Effective rooting depth is 6 to 20 inches. Air-water relationship is favorable for plant growth. Rock fragments make up 5 to 35 percent of the soil profile and occupy 0 to 25 percent of the surface.

**Parent Material Kind:** Colluvium

**Parent Material Origin:** Sandstone-unspecified

### **Surface Texture:**

1. Loam
2. Stony loam
3. Sandy loam

### **Surface Texture Modifier:**

1. Stone
2. Channery
3. Flag

**Subsurface Texture Group:** Loamy

**Surface Fragments  $\leq 3''$  (% Cover):** 15 to 35

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

**Subsurface Fragments  $\leq 3''$  (%Volume):** 15 to 35

**Subsurface Fragments  $\geq 3''$  (%Volume):** 15 to 35

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Well
<b>Permeability Class:</b>	Moderately slow	Moderate
<b>Depth (inches):</b>	4	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>	6.6	8.4
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	N/A	N/A
<b>Available Water Capacity (inches):</b>	3	6
<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

On this site the dominant vegetation is grass. Small trees and shrubs are associated with the very shallow soils near the bare ledges or rock outcrops. Mid-grasses such as sideoats grama and little bluestem are dominant with scattered junipers or shrubs. Several species of perennial and annual forbs are evenly distributed.

Canopy Cover:

Trees	5 – 10 %
Shrubs and half shrubs	1 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	15 – 20
Bare ground	30 – 35
Surface gravel	1 – 5
Surface cobble and stone	20 – 25
Litter (percent)	10 – 15
Litter (average depth in cm.)	2

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

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	351	800	1,248
Forb	14	31	48
Tree/Shrub/Vine	59	133	208
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	450	1,025	1,600

**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	BOCU	Sideoats Grama	256 – 308	256 – 308
2	SCSC	Little Bluestem	205 – 256	205 – 256
3	BOGR2 BOHI2	Blue Grama Hairy Grama	205 – 256	205 – 256
4	HECO26 HENE5	Needleandthread New Mexico Feathergrass	51 – 103	51 – 103
5	ANGE	Big Bluestem	51 – 103	51 – 103
6	BOSA PIFI	Silver Bluestem Pinyon Ricegrass	31 – 51	31 – 51
7	LYPH	Wolftail	31 – 51	31 – 51
8	ELEL5	Bottlebrush Squirreltail	10 – 51	10 – 51
9	2GRAM	Other Grasses	31 – 51	31 – 51

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ERIOG	Wild Buckwheat	21 – 51	21 – 51
11	ASTER	Aster spp.	21 – 51	21 – 51
12	2FP	Other Perennial Forbs	21 – 51	21 – 51
13	2FA	Other Annual Forbs	21 – 51	21 – 51

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	ARGL9 ARFR4	Cudweed Sagewort Fringed Sagewort	21 – 51	21 – 51
15	QUERC	Oak spp.	21 – 51	21 – 51
16	RHTR CEMOP	Skunkbush Sumac Hairy Mountainmahogany	21 – 51	21 – 51
17	JUNIP PIED	Juniper spp. Pinyon Pine	21 – 51	21 – 51
18	2SD	Other Shrubs	21 – 51	21 – 51

**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: slender tridens, threeawn spp., and ring muhly.

Other shrubs include: broom snakeweed, winterfat and cholla.

Other forbs include: locoweed spp., globemallow spp., dalea, silverleaf nightshade, peavine, paintbrush spp., gilia, rayless goldenrod, and prairie coneflower.

**Plant Growth Curves**

**Growth Curve ID**   NM3705  

**Growth Curve Name:**   HCPC  

**Growth Curve Description:**   Mid-grass grassland with scattered shrubs and evenly distributed forbs.  

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, bobcat, bridled weasel, black-tailed jackrabbit, thirteen-lined ground squirrel, rock squirrel, ferruginous hawk, canyon wren, prairie rattlesnake and the red spotted toad.

The great horned owl and the prairie falcon nest in these habitats if suitable rock cliffs occur.

### **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>
Rizozo	D
Travessilla	D

### **Recreational Uses:**

This site has fair esthetic appeal and natural beauty. It has a variety of plants that bloom from early spring to late summer. Fair for camping, hiking and picnicking. Hunting is fair for deer and rabbits.

### **Wood Products:**

Production of juniper and pinyon provides limited amounts of firewood and fence posts.

**Other Products:**

**Grazing:**

This site can be grazed any season of the year by all classes and kinds of livestock. Because of the slopes and rock outcrops, a younger class of livestock utilize this site best. Browsing animals may be favored because of the site's potential to produce shrubs and forbs. Continuous grazing during the grazing season will cause the more desirable forage plants such as sideoats grama, little bluestem, New Mexico feathergrass, big bluestem and pinyon ricegrass to decrease. Species most likely to increase are blue grama, oneseed juniper, ring muhly, oak brush and cholla cactus. As the ecological condition deteriorates, it is accompanied by a sharp increase in juniper, which may give the appearance of dominating the site. Small patches of oak brush will also increase to the point where it may dominate. A system of deferred grazing that varies the time of grazing and rest in a pasture during successive years is needed to maintain or improve the plant community. A late winter, early summer rest is beneficial to shrubby species such as winterfat and mountainmahogany. Rest during April, May and June is beneficial to New Mexico feathergrass, needleandthread and pinyon ricegrass. This site provides a large variety of grasses, forbs and shrubs that provide a well-balanced feed and good nutrition for all grazing animals.

**Other Information:**

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

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	3.0 – 3.8
75 – 51	3.7 – 4.7
50 – 26	4.6 – 12.0
25 – 0	12.0+

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
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	D	P	P	P	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Big Bluestem	Andropogon gerardii	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
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	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
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U

**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
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	D	D	D	D	D	D	D	D	D	D	D	D
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	U	U	U	U
Fringed Sagewort	Artemisia frigida	EP	D	D	U	U	U	U	U	U	D	D	D	D

**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
Hairy Mountainmahogany	<i>Cercocarpus montanus</i>	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	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: Mora, San Miguel

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:**

Rizozo	Travessilla
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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	04/25/80	Durwood E. Bell	04/29/80

**Site Description Revision:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	06/11/01	George Chavez	12/17/02