

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** 070XA011NM

**Site Name:** Cinder

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

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

## **PHYSIOGRAPHIC FEATURES**

### **Narrative:**

This site is on volcanic cones and adjacent fans. Elevation ranges from 6,900 to 9,000 feet above sea level. Slopes range from 0 to 50 percent and are on all aspects.

### **Land Form:**

1. Cinder cone

2.

3.

### **Aspect:**

1. N/A

2.

3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	6,900	9,000
<b>Slope (percent)</b>	0	50
<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>	<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:	To:	Period
293706	Grenville, NM	01/01/41	12/31/01	
294856	Las Vegas FAA Airport, NM	01/01/41	12/31/01	
295490	Maxwell, NM	01/01/14	12/31/01	
297280	Raton KRTN Radio, NM	12/01/78	12/31/01	
298501	Springer, NM	01/01/14	12/31/01	
299330	Valmora, NM	03/01/17	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 are moderately deep to deep; well drained to somewhat excessively drained. The surface layers are gravelly loam or silt loam. The subsurface is gravelly loam or loose cinders. Permeability is rapid. Available water-holding capacity is low. Effective rooting depth is 20 to 40 inches. These soils are droughty. The gravel in these soils is volcanic cinder.

**Parent Material Kind:** Volcanic ash

**Parent Material Origin:** Basalt

**Surface Texture:**

1. Gravelly loam
2. Gravelly silty loam
3.

**Surface Texture Modifier:**

1. Gravel
2.
3.

**Subsurface Texture Group:** Loamy

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

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

**Subsurface Fragments  $\leq 3"$  (%Volume):** 35 to 60

**Subsurface Fragments  $\geq 3"$  (%Volume):** N/A

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Somewhat excessively
<b>Permeability Class:</b>	Moderately slow	Rapid
<b>Depth (inches):</b>	20	$> 72$
<b>Electrical Conductivity (mmhos/cm):</b>	N/A	N/A
<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

This site produces vegetation dominated by warm-season mid-grasses with a variety of shrubs, forbs and cool-season grasses. This site occurs as the lower portions of volcanic cones and the adjacent fans. The surface cinder acts much like mulch to retain surface moisture. Cinder also heats the soil. During years of favorable winter moisture, this site is the first to green-up in early spring or late winter.

Canopy Cover:

Trees	0 – 5 %
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	25 – 30
Bare ground	15 – 20
Surface gravel	30 – 35
Surface cobble and stone	3 – 5
Litter (percent)	8 – 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	329	639	949
Forb	36	68	104
Tree/Shrub/Vine	59	111	169
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	450	875	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	SCSC	Little Bluestem	131 – 175	131 – 175
2	BOHI2 BOGR2	Hairy Grama Blue Grama	131 – 175	131 – 175
3	BOCU	Sideoats Grama	88 – 131	88 – 131
4	ANGE	Big Bluestem	44 – 88	44 – 88
5	FEAR	Arizona Fescue	44 – 88	44 – 88
6	MUMO	Mountain Muhly	44 – 88	44 – 88
7	LYPH	Wolftail	26 – 44	26 – 44
8	2GRAM	Other Grasses	26 – 44	26 – 44

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	HEVI2	Hairy False Goldenaster	18 – 44	18 – 44
10	SPHAE	Globemallow spp.	18 – 44	18 – 44
11	2FA 2FP	Other Annual Forbs Other Perennial Forbs	18 – 44	18 – 44

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	QUERC	Oak spp.	44 – 88	44 – 88
13	CEMOP	Hairy Mountainmahogany	26 – 44	26 – 44
14	JUNIP PIED	Juniper spp. Pinyon Pine	26 – 44	26 – 44
15	2SD	Other Shrubs	26 – 44	26 – 44

**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 include: threeawn spp., green needlegrass, Indian ricegrass and prairie junegrass.

Other shrubs that could appear include: yucca spp., skunkbush sumac and chokecherry.

Other forbs that could appear include: western ragweed, prairie coneflower, dotted gayfeather, prairieclover, whorled milkweed, Indian paintbrush and lupine spp.

**Plant Growth Curves**

Growth Curve ID 3711NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season mid-grass grassland with a variety of shrubs, forbs and cool-season grasses.

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, spotted skunk, desert cottontail, rock squirrel, great horned owl, scrub jay, rufous-sided towhee, garter snake and fence lizard.

There is seasonal use by the blue grouse, turkey and mountain lion. Band-tailed pigeons will flock to these habitats during years of high mast production

### **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>
Bandera	B
Cinders	B

### **Recreational Uses:**

This site has good aesthetic appeal because of its association with volcanic cones and the uniqueness within the area in which the site occurs. Its large variety of plants blooms from early spring to fall. It is fair for camping and picnicking. The site provides poor hiking because of small cinder gravel surface. Hunting is poor to fair for deer, rabbits and upland game birds.

### **Wood Products:**

This site produces no significant wood production except fuel for campfires.

**Other Products:**

**Grazing:**

This site can be used all season of the year. Because of this site's potential to green up early, it is better suited for early spring grazing when grazing is not in successive years. Site is best suited for cattle and horses. Steer and young heifers could best utilize the site because of the cinder on the soil surface and slope. Approximately 80 percent of the total annual yield are from species that furnish forage for livestock. Continuous grazing during the growing season will cause the more desirable forage plants such as little bluestem, big bluestem, Arizona fescue, mountain muhly and mountainmahogany to decrease. Species most likely to invade the site are ring muhly and broom snakeweed. Species most likely to increase are blue grama, threeawn, oak brush, oneseed juniper and annual forbs. A system of deferred grazing, which varies the time of grazing and rest in a pasture during successive years, is needed to maintain or improve the plant community. Rest during April, May and June allows species such as Arizona fescue, green needlegrass and prairie junegrass to grow and reproduce. Late spring and early summer rest is beneficial to big bluestem and little bluestem.

**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 – 2.9
75 – 51	2.8 – 5.0
50 – 26	4.9 – 9.8
25 – 0	9.8+

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	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P	
Arizona Fescue	Festuca arizonica	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	
Mountain Muhly	Muhlenbergia montana	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	
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	
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	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	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P	
Arizona Fescue	Festuca arizonica	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	
Arizona Fescue	Festuca arizonica	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:** 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	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P	
Oak	Quercus spp.	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	

**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, Union

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Township: \_\_\_\_\_

Range: \_\_\_\_\_

Section: \_\_\_\_\_

Is the type locality sensitive?    Yes             No

General Legal Description: \_\_\_\_\_

**Relationship to Other Established Classifications:**

--

**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:**

Bandera	Cinders
---------	---------

**Other Soils included are:**

--	--

**Site Description Approval:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	04/25/80	Durwood E. Ball	04/29/80

**Site Description Revision:**

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	08/26/02	George Chavez	12/17/02