

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XA014NM

Site Name: Hills

Precipitation or Climate Zone: 14 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on a complex landscape of steep slopes and narrow valleys. The slopes are usually smooth and range from 0 to 35 percent. Local relief, the difference in elevation of the bottom of the valley to the top of the ridges, is generally less than 500 feet but may be as much as 1,000 feet. Elevation ranges from 5,300 to 7,200 feet above sea level.

Land Form:

1. Hill
2. Hillside
- 3.

Aspect:

1. North and east
2. South and west
- 3.

	Minimum	Maximum
Elevation (feet)	5,300	7,200
Slope (percent)	0	35
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 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 9th through May 17th, and the first killing frost from September 27th to October 8th. 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.

	Minimum	Maximum
Frost-free period (days):	<u>132</u>	<u>149</u>
Freeze-free period (days):	<u>153</u>	<u>171</u>
Mean annual precipitation (inches):	<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 on this site are variable. The soils on the slopes are well drained, shallow to moderately deep loamy soils. The subsurface layers are loam, clay loam or clay. There are boulders and cobbles on some areas. The soils have moderate to slow permeability. The available water-holding capacity is low to high. The effective rooting depth is 10 to 40 inches. The soil on the valley bottoms is usually well drained, deep to moderately deep. The surface layer ranges from sandy to clayey and the subsurface layers are loamy to clayey. They have moderate to slow permeability. Available water-holding capacity is high. These soils receive added water as runoff from adjacent slopes.

Parent Material Kind: Slope alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Very channery loam
3. Sand
4. Clay

Surface Texture Modifier:

1. Channery
2. Cobble
3. Boulders

Subsurface Texture Group: Loamy

Surface Fragments $\leq 3''$ (% Cover): N/A

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

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

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

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	10	> 72
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	3	12
Calcium Carbonate Equivalent (percent):	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

The site is a grassland with an aspect dominance of pinyon-juniper with an understory of grasses, forbs and browse. Approximately 50 percent of the total vegetative production are made up of grasses. Grass species are dominated by warm-season mid-grasses. Woody species make up approximately 35 percent of the vegetative production. A variety of perennial and annual forbs make up approximately 10 percent of the vegetative production.

North and east facing slopes typically produce a denser vegetative cover and produce more vegetative growth than the south or west facing slopes.

Canopy Cover:

Trees	5 – 10 %
Shrubs and half shrubs	5 – 10 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 25
Bare ground	15 – 20
Surface gravel	5
Surface cobble and stone	30 – 40
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	212	557	901
Forb	32	84	136
Tree/Shrub/Vine	132	347	561
Lichen			
Moss			
Microbiotic Crusts			
Total	400	1,050	1,700

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	158 – 218	158 – 218
2	SCSC	Little Bluestem	105 – 158	105 – 158
3	MUMO	Mountain Muhly	32 – 53	32 – 53
4	BOCU	Sideoats Grama	53 – 105	53 – 105
5	ANGE	Big Bluestem	21 – 53	21 – 53
6	LYPH	Wolftail	21 – 53	21 – 53
7	PLJA	Galleta	21 – 53	21 – 53
8	2GRAM	Other Grasses	21 – 53	21 – 53

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ERIOG	Wildbuckwheat	21 – 32	21 – 32
10	2FA 2FP	Other Annual Forbs Other Perennial Forbs	53 – 105	53 – 105

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	JUNIP	Juniper spp.	105 – 158	105 – 158
12	PIED	Pinyon Pine	53 – 105	53 – 105
13	QUERC	Oak spp.	105 – 158	105 – 158
14	CEMOP	Hairy Mountainmahogany	53 – 74	53 – 74
15	RHTR	Skunkbush Sumac	21 – 53	21 – 53
16	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 include: pinyon ricegrass, western wheatgrass, vine-mesquite, threeawn spp., ring muhly, mat muhly and bottlebrush squirreltail.

Other shrubs that could appear include: winterfat, Bigelow sagebrush, Apacheplume and broom snakeweed.

Other forbs that could appear include: hairy false goldaster.

Plant Growth Curves

Growth Curve ID 3714NM

Growth Curve Name: HCPC

Growth Curve Description: Grassland with an aspect dominance of pinyon-juniper with and understory of grasses, forbs and browse.

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, eastern cottontail, grasshopper mouse, brush mouse, great horned owl, red-tailed hawk, plain titmouse, scrub jay, rufous sided towhee, western diamondback rattlesnake 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

Soil Series	Hydrologic Group
Dean	B
Dioxice	B
Dumas	B
Oro Grande	D
Penrose	D
Rock Outcrop	D

Recreational Uses:

The site has good aesthetic appeal and natural beauty. It is fair for screening and fair to good for hiking and picnicking. Poor to fair for camping. Hunting for deer is fair to good.

Wood Products:

Pinyon and juniper furnish some firewood. Juniper can be used as fence posts. A limited number of pinyon is used for Christmas trees. All are limited due to slopes.

Other Products:

Grazing:

This site is best suited to be grazed in the spring, summer and fall. Distribution of domestic livestock is a problem on this site due to the slopes. Cattle, horses and sheep tend to graze flatter slopes leaving the steeper slopes ungrazed. Goats are best suited for this site. A younger age of cattle would better utilize the site than the older cows. Approximately 80 percent of the total annual yield are from species, which furnish forage for grazing animals. These species are a large variety of grasses, forbs and shrubs that provide good nutrition for grazing animals. Continuous grazing during the growing season will cause the more desirable forage plants such as little bluestem, big bluestem, sideoats grama, pinyon ricegrass, western wheatgrass and mountainmahogany to decrease. Species most likely to increase are blue grama, oneseed juniper, oak brush, threeawn spp. and ring muhly. As the ecological condition deteriorates, it is accompanied by a sharp increase of oneseed juniper and oak. As further deterioration advances, ground cover is greatly reduced. Oneseed juniper and oak brush may increase to the point where it is dominating the site with very little forage production. A system of deferred grazing, which varies the time of grazing and rest in a pasture during successive years, is needed to maintain the plant community. Late spring and summer rest is especially beneficial to little bluestem, sideoats grama and big bluestem. Rest during April, May and June is needed to allow pinyon ricegrass, western wheatgrass and other cool-season grasses to grow and reproduce.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.1 – 4.0
75 – 51	3.8 – 5.1
50 – 26	5.0 – 11.7
25 – 0	11.7+

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
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

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	Bouteloua curtipendula	EP	D	D	D	D	P	P	P	P	P	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	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	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: Colfax, Mora, San Miguel, 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:

Dean, Dioxice, Dumas	Oro Grande, Penrose, Rock Outcrop
----------------------	-----------------------------------

Other Soils included are:

Litle	Mion
-------	------

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	08/28/02	George Chavez	12/17/02