

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XA003NM

Site Name: Shallow Upland

Precipitation or Climate Zone: 14 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This occurs on nearly level to rolling upland areas through the area. This site usually occurs as low, rounded ridges or as low hills (convex position of the landscape). Steep-sided canyons frequently dissect the landscape.

Elevation ranges from approximately 5,000 to 7,500 feet above sea level. Slopes are generally 2 to 8 percent but may range from 0 to 15 percent.

Land Form:

1. Ridge
2. Hill
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	5,000	7,500
Slope (percent)	0	15
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:

These are well-drained shallow soils. Surface texture is fine sandy loam, loam, gravelly loam, channery loam, silt loam or clay loam. The subsoil or subsurface texture is loam, clay loam, sandy clay loam or clay. The parent material or root restriction layer is at depths of 20 inches or less and is igneous rock, limestone, shale or indurated caliche. Permeability is moderate to slow. Available water-holding capacity is low. Air-water relation is favorable for plant growth. Rock fragments make up from 0 to 15 percent of the soil.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Sandy loam
2. Loam
3. Silty loam
4. Channery silty loam
5. Channery loam
6. Clay loam
7. Fine sandy loam
8. Gravelly loam

Surface Texture Modifier:

1. Gravel

2. Channery

3.

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

	Minimum	Maximum
	Well	Well
Drainage Class:	Very slow	Moderately slow
Permeability Class:	<10	20
Depth (inches):	0.00	2.00
Electrical Conductivity (mmhos/cm):	N/A	N/A
Sodium Absorption Ratio:	5.6	8.4
Soil Reaction (1:1 Water):	N/A	N/A
Soil Reaction (0.1M CaCl₂):	3	6
Available Water Capacity (inches):	N/A	N/A
Calcium Carbonate Equivalent (percent):		

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 a grassland dominated by mid-grasses such as sideoats grama, blue grama and little bluestem, with a minor amount of perennial and annual forbs. Shrub species also make up a minor portion of the plant community. Oneseed juniper is widely scattered on some sites.

Canopy Cover:

Trees	0
Shrubs and half shrubs	5 – 10 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 25
Bare ground	40 – 45
Surface gravel	5 – 10
Surface cobble and stone	0 – 2
Litter (percent)	5 – 8
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	312	585	858
Forb	32	60	88
Tree/Shrub/Vine	32	60	88
Lichen			
Moss			
Microbiotic Crusts			
Total	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	BOCU	Sideoats Grama	113 – 150	113 – 150
2	BOGR2 BOHI2	Blue Grama Hairy Grama	113 – 150	113 – 150
3	SCSC	Little Bluestem	113 – 150	113 – 150
4	HECO26 HENE5	Needleandthread New Mexico Feathergrass	75 – 113	75 – 113
5	ARIST	Threeawn spp.	8 – 38	8 – 38
6	LYPH	Wolftail	8 – 38	8 – 38
7	PASM ELEL5	Western Wheatgrass Bottlebrush Squirreltail	8 – 38	8 – 38
8	2GRAM	Other Grasses	8 – 38	8 – 38

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ERIOG	Wildbuckwheat spp.	8 – 38	8 – 38
10	SPHAE	Globemallow spp.	8 – 38	8 – 38
11	2FA	Other Annual Forbs	15 – 38	15 – 38
12	2FP	Other Perennial Forbs	15 – 38	15 – 38

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
13	ARFR4	Fringed Sagewort	8 – 38	8 – 38
14	ARBI3 KRLA2	Bigelow Sagebrush Winterfat	15 – 23	15 – 23
15	RHTR	Skunkbush Sumac	15 – 38	15 – 38
16	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 could appear include: ring muhly, big bluestem, Indian ricegrass and galleta. Other shrubs that could appear include: broom snakeweed, yucca spp., cudweed sagewort and juniper.

Other forbs that could appear include: hairy goldaster, nailwort, locoweed spp., dalea and silverleaf nightshade.

Plant Growth Curves

Growth Curve ID 3703NM

Growth Curve Name: HCPC

Growth Curve Description: Mid-grassland with minor components of shrubs and 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 pronghorn antelope, coyote, gray fox, black-tailed jackrabbit, northern grasshopper mouse, hispid pocket mouse, marsh hawk, horned lark, meadowlark, prairie rattlesnake, six-lined racerunner and great plains toad.

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
Bernal	D
Crews	D
Dean	B
Mion	D
Pastura	D
Penrose	D
Plack	D

Recreational Uses:

This site has fair aesthetic appeal because of the open space. It provides poor camping, hiking and picnicking. Hunting is fair for rabbits and upland game birds. The site may provide limited winter use by big game (deer) when sites are closely associated with breaks in physiographic features of the landscape. Hunting antelope on this site is good.

Wood Products:

This site has no significant value for wood products.

Other Products:**Grazing:**

This site can be grazed any season of the year by all classes and kinds of livestock. Because of the potential for forb production, this site may favor sheep or antelope grazing. Approximately 90 percent of the annual yield are from species that furnish forage for grazing animals. Continuous grazing during the growing season will cause the more desirable forage plants such as sideoats grama, little bluestem, needleandthread, New Mexico feathergrass and western wheatgrass to decrease. The species most likely to invade this site is oneseed juniper where there is an available seed source. Species most likely to increase are blue grama, threeawn spp., ring muhly and broom snakeweed. As the ecological condition deteriorates, it is accompanied by a sharp decrease in plant cover. This allows greater runoff and the production is greatly reduced. 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 is needed to allow New Mexico feathergrass, needleandthread and western wheatgrass to grow and reproduce.

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

Similarity Index	Ac/AUM
100 - 76	3.0 – 3.5
75 – 51	3.4 – 4.5
50 – 26	4.4 – 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	<i>Bouteloua hirsuta</i>	EP	D	D	D	D	P	P	P	P	P	P	D	D	D
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	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	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D	D
Needleandthread	<i>Hesperostipa comata</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D	D
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	P	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	
Hairy Grama	<i>Bouteloua hirsuta</i>	EP	D	D	D	D	P	P	P	P	P	P	D	D	D
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	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	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
Bottlebrush Squirreltail	<i>Elymus Elymoides</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	U	U	U	U	U	U	D	D	D	D
Bigelow Sagebrush	<i>Artemisia bigelovii</i>	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

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
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	D	D	D	D	D	D	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
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Bigelow Sagebrush	<i>Artemisia bigelovii</i>	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
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	D	D	D	D	D	D	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, San Miguel, Union

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:

Bernal, Crews, Dean, Mion, Pastura	Penrose, Plack
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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. Ball	04/29/80

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	08/20/02	George Chavez	12/17/02