

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XA008NM

Site Name: Sandstone Breaks

Precipitation or Climate Zone: 14 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on steep and very steep slopes and escarpments. Elevation ranges from 4,000 to 7,000 feet above sea level. The landscape consists of interbedded sandstone, limestone and shale with soil on steep fans and small ravine bottoms. Elevation differences on individual areas range from 150 to 800 feet. This site is a barrier to the movement of livestock. Slopes are usually 35 to 60 percent but range from 20 to 75 percent. Slopes are on all aspects and vegetation varies with aspect. North and east-facing slopes have lower temperatures and rainfall is more effective than on the south and west-facing slopes.

Land Form:

1. Break
2. Escarpment
- 3.

Aspect:

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

	Minimum	Maximum
Elevation (feet)	4,000	7,000
Slope (percent)	20	75
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 well drained, shallow to deep and usually stony. Surface textures vary greatly. The slope of these soils is the predominant characteristic.

Parent Material Kind: Colluvium

Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Stony sandy loam
2.
3.

Surface Texture Modifier:

1. Stone
2.
3.

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): N/A

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

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

Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	<10	60
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	0	3
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 vegetation of this site is dominated by grasses but may have the appearance of being dominated by woody species. Warm-season mid-grasses dominate the annual grass production. Pinyon pine, oneseed juniper, oak and hairy mountainmahogany are the main woody species.

Canopy Cover:

Trees	5 – 10 %
Shrubs and half shrubs	10 – 15 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30 – 35
Bare ground	10 – 15
Surface gravel	0
Surface cobble and stone	30 – 35
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	378	567	756
Forb	48	72	96
Tree/Shrub/Vine	138	207	276
Lichen			
Moss			
Microbiotic Crusts			
Total	600	900	1,200

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	180 – 225	180 – 225
2	BOCU	Sideoats Grama	180 – 225	180 – 225
3	BOGR2 BOHI2	Blue Grama Hairy Grama	135 – 180	135 – 180
4	LYPH	Wolftail	27 – 45	27 – 45
5	MUWR	Spike Muhly	27 – 45	27 – 45
6	MURI2	Deergrass	27 – 45	27 – 45
7	PIFI	Pinyon Ricegrass	27 – 45	27 – 45
8	PAVI2	Switchgrass	27 – 45	27 – 45
9	HECO26	Needleandthread	27 – 45	27 – 45
10	2GRAM	Other Grasses	27 – 45	27 – 45

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	ERIOG	Wavyleaf Buckwheat Wildbuckwheat	27 – 45	27 – 45
12	2FA	Other Annual Forbs	27 – 45	27 – 45
13	2FP	Other Perennial Forbs	27 – 45	27 – 45

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	PIED JUNIP	Pinyon Pine Juniper spp.	90 – 135	90 – 135
15	QUERC	Oak spp.	45 – 90	45 – 90
16	CEMOP	Hairy Mountainmahogany	27 – 45	27 – 45
17	ARFR4 RHTR PUME	Fringed Sagewort Skunkbush Sumac Cliffrose	9 – 45	9 – 45
18	2SD	Other Shrubs	9 – 45	9 – 45

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., galleta, ring muhly and bottlebrush squirreltail.

Other shrubs that could appear include: broom snakeweed, cholla cactus and plains pricklypear cactus.

Other forbs that could appear include: fetid marigold and aster.

Plant Growth Curves

Growth Curve ID 3708NM

Growth Curve Name: HCPC

Growth Curve Description: Grassland with a major component of shrubs and a minor component of 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, bobcat, gray fox, spotted skunk, eastern cottontail, rock squirrel, pinyon mouse, southern plains woodrat, great horned owl, ferruginous hawk, plain titmouse, brown towhee, scrubjays, western diamondback rattlesnake and red-spotted toad.

The mountain lion hunts through these habitats. There is seasonal use by band-tailed pigeons in years of heavy 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
Travessilla	D

Recreational Uses:

This site has good aesthetic appeal and natural beauty. It has a large variety of plants. It is fair to good for hiking and poor to fair for camping and picnicking. Hunting for deer is good.

Wood Products:

Some pinyon and juniper can be harvested for fence posts and as firewood.

Other Products:

Grazing:

Distribution of domestic livestock is a problem on this site. All ages and classes of livestock will graze the flatter slopes, leaving the steeper slopes ungrazed. Younger livestock tend to graze the steeper slopes better than the older cows. This site can be grazed during the spring, summer and fall. Approximately 70 percent of the total annual yield are from species that furnish forage for livestock when accessible. The potential plant community has a large variety of grasses, forbs and shrub species that provide a well-balanced feed and good nutrition for livestock and wildlife. Continuous grazing will cause the plant community to deteriorate and little bluestem, sideoats grama, blue grama, pinyon ricegrass, New Mexico feathergrass and hairy mountainmahogany to decrease. Pinyon pine, oneseed juniper, broom snakeweed, threeawns and ring muhly to increase. Sleepygrass will invade the site as the plant community deteriorates.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.3 – 4.4
75 – 51	4.3 – 6.5
50 – 26	6.4 – 12.6
25 – 0	12.6+

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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D	D
Switchgrass	<i>Panicum virgatum</i>	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	N/S
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P	P

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
Switchgrass	<i>Panicum virgatum</i>	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	N/S
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	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	
Blue Grama	<i>Bouteloua gracilis</i>	EP	D	D	D	D	P	P	P	P	P	P	D	D	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	D	D	D	D	P	P	P	P	P	P	D	D	D
Hairy Mountainmahogany	<i>Cercocarpus montanus</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	N/S
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D	D
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	P	P	P	P	D	D	D	D	D	D	D	P

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
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
Hairy Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Cliffrose	Purshia mexicana	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:

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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:

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	04/24/80	Durwood E. Ball	04/29/80

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	08/22/02	George Chavez	12/17/02