

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB059NM

Site Name: Breaks (Northern Exposure)

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on steep and very steep slopes along the sides of valleys, streams and mesas at elevations of 4,300 to 5,000 feet above sea level. The landscape is characteristically low escarpments and has many outcrops of sandstone, caliche and red-bed shale with soil on moderately steep benches and fans. Relief averages about 400 feet. Slopes range from 20 to 80 percent. This site is north facing. The vegetation usually is denser with a greater variety of species.

Land Form:

1. Break
2. Scarp slope
- 3.

Aspect:

1. North
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4,300	5,000
Slope (percent)	20	80
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:

Medium to high.

CLIMATIC FEATURES

Narrative:

The climate of this area can be classified as “semi-arid continental”.

Annual average precipitation ranges from 13 to 16 inches. About seventy eight percent of the moisture usually falls during the six-month period of May through October. Most of this summer precipitation falls in the form of brief and heavy afternoon and evening thunderstorms. Hail may accompany the more severe summer storms. In the winter, there is normally only one day a month when as much as one-tenth inch of moisture falls, usually in the form of snow. Snow seldom lies on the ground for more than a few days.

Temperatures are characterized by a distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm. Maximum temperature average above 90 degrees F from July to August and an average summer includes about 80 days with high readings exceeding 90 degrees F and 10 days with readings above 100 degrees F. Temperatures usually fall rapidly after sundown and low of 60 degrees F on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in midwinter usually rise to the 50's. However, freezing temperatures normally occur at night from mid-November to mid-March.

The freeze-free season ranges from 190 to 197 days. Dates of the last freeze are April 11th to April 17th and the first freeze varies from October 20th to October 25th.

Both temperature and rainfall distribution favor warm-season, perennial plant communities in the area. However, sufficient late winter and early spring moisture allows a cool-season species to occupy a minor component within the plant community

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>164</u>	<u>196</u>
Freeze-free period (days):	<u>190</u>	<u>218</u>
Mean annual precipitation (inches):	<u>13</u>	<u>16</u>

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.23	0.46	21.6	57.3
February	0.30	0.44	24.0	59.2
March	0.46	0.65	29.1	68.0
April	0.36	0.92	36.3	78.3
May	0.42	1.68	45.7	82.6
June	1.20	1.86	52.2	91.2
July	2.03	2.73	59.1	92.9
August	2.09	2.75	58.1	91.0
September	1.65	1.92	51.1	84.8
October	1.23	1.93	40.1	74.7
November	0.46	0.88	28.9	63.0
December	0.37	0.62	22.1	54.6

Climate Stations:

Station ID	Location	From:	To:	Period
290205	Alamogordo Dam, NM	1972	2000	
293292	Fort Sumner, NM	01/01/14	2000	
297254	Ramon 8SW, NM	03/04/57	122/31/01	
298596	Sumner Lake, NM	01/01/21	12/31/01	
299851	Yeso, NM	01/01/48	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 soils are shallow and very shallow, well drained, over caliche or sandstone. Surface layers are medium to fine-textured and are often stony. Surface runoff is rapid. Available water-holding capacity is low. Effective rooting depth varies and generally is less than 12 inches.

Parent Material Kind: Colluvium

Parent Material Origin: Mixed

Surface Texture:

- | |
|-----------------------------|
| 1. Gravelly loam |
| 2. Loam |
| 3. Stony loam |
| 4. Stony sandy loam |
| 5. Gravelly fine sandy loam |

Surface Texture Modifier:

- | |
|-----------|
| 1. Gravel |
| 2. Stone |
| 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 60

Subsurface Fragments $\geq 3''$ (%Volume): 15 to 60

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Slow</u>	<u>Moderately slow</u>
Depth (inches):	<u>4</u>	<u>>72</u>
Electrical Conductivity (mmhos/cm):	<u>Unknown</u>	<u>Unknown</u>
Sodium Absorption Ratio:	<u>Unknown</u>	<u>Unknown</u>
Soil Reaction (1:1 Water):	<u>Unknown</u>	<u>Unknown</u>
Soil Reaction (0.1M CaCl₂):	<u>Unknown</u>	<u>Unknown</u>
Available Water Capacity (inches):	<u>3</u>	<u>6</u>
Calcium Carbonate Equivalent (percent):	<u>Unknown</u>	<u>Unknown</u>

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 plant community dominated by warm-season grasses with a variety of shrubs, half-shrubs and trees. Often the woody species will give an aspect dominance appearance. Cool-season grasses and forbs make up a minor component.

*In areas where this species has invaded, it should be included in the potential plant community.

Canopy Cover:

Trees	0
Shrubs and half shrubs	10 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20
Bare ground	10
Surface gravel	15
Surface cobble and stone	30
Litter (percent)	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	450	750	1,050
Forb	60	100	140
Tree/Shrub/Vine	90	150	210
Lichen			
Moss			
Microbiotic Crusts			
Total	600	1,000	1,400

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	BOER4	Black Grama	140 – 160	140 – 160
2	BOCU	Sideoats Grama	110 – 130	110 – 130
3	HENE5	New Mexico Feathergrass	110 – 130	110 – 130
4	BOGR2 BOHI2	Blue Grama Hairy Grama	80 – 100	80 – 100
5	SCSC	Little Bluestem	70 – 90	70 – 90
6	PLJA	Galleta	20 – 30	20 – 30
7	SPCR ARIST MUTO2	Sand Dropseed Threawn spp. Ring Muhly	20 – 30	20 – 30
8	ERPI5 LYPH	Hairy Tridens Wolftail	10 – 20	10 – 20
9	PIFI ELEL5	Pinyon Ricegrass Bottlebrush Squirreltail	0 – 20	0 – 20
10	BOSA BOBA3	Silver Bluestem Cane Bluestem	0 – 50	0 – 50

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	VEMA2 ERIGE2 LESQU	Ironplant Fleabane Bladderpod	20 – 30	20 – 30
12	2FP	Other Perennial Forbs	20 – 40	20 – 40
13	2FA	Other Annual Forbs	20 – 40	20 – 40

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	YUCCA	Yucca spp.	30 – 40	30 – 40
15	NOMI	Sacahuista	30 – 40	30 – 40
16	JUNIP	Juniper spp.	30 – 40	30 – 40
17	RHTR	Skunkbush Sumac	20 – 30	20 – 30
18	QUERC	Oak spp.	20 – 30	20 – 30
19	CEMOP	Hairy Mountainmahogany	20 – 30	20 – 30
20	PIED	Pinyon Pine	10 – 20	10 – 20
21	DAFO GUSA2 KRLA2 ARFR4 OPSP2 PACAL5 EPVI MIERX	Feather Dalea Broom Snakeweed Winterfat Fringed Sagewort Cholla Cactus Woolly Groundsel Mormon-tea Javelinabush	10 – 30	10 – 30
22	PRGL2	Mesquite (honey)	10 – 20	10 – 20

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

Plant Growth Curves

Growth Curve ID 4009NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season 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 habitat, which supports a resident animal community that is characterized by spotted skunk, bobcat, eastern cottontail, southern plains woodrat, rock squirrel, great horned owl, white-throated raven, rock wren, fence lizard and checkered whiptail. There is seasonal use by mule deer. Many species of shrub nesting birds will breed in the oaks.

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
Aridic haplustolls	C
Lacoca	D
Latom	D
Potter	C
Regnier	D

Recreational Uses:

This site has fair to good recreation potential. Hiking, picnicking and camping is fair to good, limited by lack of live water. Screening is fair. Hunting for deer and rabbits is fair to good. Hunting for upland game birds is poor to fair. The aesthetic appeal is enhanced by the break in the physiographic features from open flat grasslands to steep wooded grasslands. The natural beauty is also enhanced by the large variety of plants; many of, which are flowering plants that bloom from early spring to late, fall.

Wood Products:

Limited fence post and firewood can be furnished by juniper and pinyon pine.

Other Products:

Grazing:

This site has limited grazing potential due to the slopes. Distribution of domestic livestock is the main problem. All ages and classes of livestock tend to graze the flatter slopes leaving the steeper slopes ungrazed. The site can be grazed during any season of the year. It is better suited to a younger age of cattle due to the slopes. Goats would utilize the site best. Approximately 75 percent of the total annual yield are from species that furnish forage for grazing animals when accessible. This site has a large variety of grasses, forbs and woody species that provide a good feed and excellent nutrition for domestic livestock and browsing wildlife. Continuous yearlong grazing will cause the plant community to deteriorate to a plant community of low forage value such as juniper, cholla cactus and forbs. A system of deferred grazing, which varies the season of grazing and rest in successive years, is needed to maintain or to improve the plant community. Different seasons of rest benefit different species. Fall rest allows most warm-season species to mature. Winter rest will benefit species such as mountainmahogany, oak and winterfat. Also, cattle show a definite preference to black grama during the late winter and can cause black grama to be easily overgrazed. Winter rest will reduce the grazing pressure on this species. Spring rest (April-June) will benefit cool-season species such as New Mexico feathergrass, bottlebrush squirreltail, pinyon ricegrass and early forbs. Summer rest will benefit sideoats grama, black grama and little bluestem.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.0 – 6.0
75 – 51	3.9 – 7.5
50 – 26	5.3 – 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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	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
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	P	P	P	P	P	P	D	D	D	D
Indian Paintbrush	<i>Castilleja coccinea</i>	EP	U	U	D	D	D	U	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	<i>Bouteloua curtipendula</i>	EP	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
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	P	P	P	P	P	D	D	D	D	D	D	P
Black Grama	<i>Bouteloua eriopoda</i>	EP	D	D	D	P	P	P	P	D	D	D	D	D
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	P	P	P	P	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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Hairy Mountainmahogany	<i>Cercocarpus montanus</i>	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: Guadalupe, Quay, San Miguel

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: San Miguel, Quay, Guadalupe, De Baca and Chaves

Characteristic Soils Are:

Aridic Haplustolls	Lacoca
Latom	Potter
Regnier	

Other Soils included are:

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Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	07/26/78	Don Sylvester	07/26/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	11/25/02	George Chavez	2/11/03