

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB065NM

Site Name: Gravelly

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on terraces along drainageways and on the fans at the foot of escarpments. Slopes are convex and range from 5 to 35 percent. Elevation ranges from approximately 3,800 to 5,300 feet above sea level. Aspect varies and significantly different only on the north-facing steep slopes.

Land Form:

1. Alluvial fan
2. Terrace
- 3.

Aspect:

1. Steep north-facing slopes
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	3,800	5,300
Slope (percent)	5	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”.

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 are moderately deep to deep, well drained to somewhat excessively drained soils. The surface layers are gravelly sandy loam or gravelly loam. The subsurface layers are gravelly loam or gravelly sandy loam. They have moderate permeability. The available water-holding capacity is medium. The effective rooting depth is from 40 to 60 inches. Air and water move freely through these soils.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

- | |
|----------------------------------|
| 1. Gravelly sandy loam |
| 2. Very Gravelly fine sandy loam |
| 3. Very gravelly loam |
| 4. Very gravelly sandy loam |
| 5. Gravelly loam |
| 6. Loam |

Surface Texture Modifier:

- | |
|-----------|
| 1. Gravel |
| 2. |
| 3. |

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): 35 to 60

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

Subsurface Fragments <=3" (%Volume): 35 to 60

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

	Minimum	Maximum
Drainage Class:	Well	Somewhat excessively
Permeability Class:	Moderately slow	Moderately rapid
Depth (inches):	<10	>72
Electrical Conductivity (mmhos/cm):	0.00	16.00
Sodium Absorption Ratio:	0.00	10.00
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	6	9
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

This site is grassland dominated by warm-season short and mid-grasses with scattered shrubs and half-shrubs. Grasses make up approximately 75 percent of the annual vegetative production. Shrubs and forbs are evenly distributed and make up an important portion of the plant community.

Canopy Cover:

Trees	0
Shrubs and half shrubs	10 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20
Bare ground	25
Surface gravel	35
Surface cobble and stone	0
Litter (percent)	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	338	713	1,088
Forb	68	143	218
Tree/Shrub/Vine	45	95	145
Lichen			
Moss			
Microbiotic Crusts			
Total	450	950	1,450

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	143 – 171	143 – 171
2	BOGR2	Blue Grama	124 – 152	124 – 152
3	BOCU	Sideoats Grama	114 – 143	114 – 143
4	HENE5 PLJA SPCR	New Mexico Feathergrass Galleta Sand Dropseed	48 – 67	48 – 67
5	SCSC TRMUE BOHI2 ARIST	Little Bluestem Rough Tridens Hairy Grama Threeawn spp.	29 – 48	29 – 48
6	SEVU	Plains Bristlegrass	10 – 29	10 – 29
7	MUTO2 LYPH ELEL5	Ring Muhly Wolftail Bottlebrush Squirreltail	19 – 29	19 – 20

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	MEMU3 SPHAE ZIAC PSCO2 ERIOG	Stickleaf Globemallow Plains Zinnia Paperflower Buckwheat spp.	38 – 57	38 – 57
9	2FP	Other Perennial Forbs	38 – 57	38 – 57
10	2FA	Other Annual Forbs	29 – 48	29 – 48

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	YUGL	Small Soapweed Yucca	29 – 48	29 – 48
12	MIACB DAFO OPKL OPPO	Catclaw Mimosa Feather Dalea Candle Cholla Cactus Plains Pricklypear Cactus	10 – 29	10 – 29
13	GUSA2 KRLA2 ARFR4	Broom Snakeweed Winterfat Fringed Sagewort	10 – 19	10 – 19
14	JUNIP PROSO	Juniper spp. Mesquite* spp.	0 – 19	0 – 19

Plant Type - Lichen

Group	Scientific	Species Annual	Group Annual
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Number	Plant Symbol	Common Name	Production	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 4014NM

Growth Curve Name: HCPC

Growth Curve Description: Grassland with warm-season short and mid-grasses. Shrubs and forbs are an important component.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat, which support a resident animal community characterized by pronghorn antelope, spotted skunk, desert cottontail, silky pocket mouse, Colorado chipmunk, ferruginous hawk, roadrunner, scaled quail, great plains toad and fence lizard. There is seasonal use by mule deer.

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
Bascom	B
Gallegos	B
Gallen	B
Gomez	B
Holloman	D
Philder	D

Recreational Uses:

This site has limited recreation potential. It is limited largely by the lack of live water and shade. Screening is poor; camping is poor; hiking and picnicking is fair. Hunting for antelope is fair and hunting for rabbits and upland game birds is fair to good. The natural beauty of the site is enhanced by the variety of flowering plants that bloom from spring to early fall. Photography of these flowering plants is greatest following summer showers.

Wood Products:

This site produces no wood products.

Other Products:

Grazing:

This site can be grazed during any season of the year by all classes of livestock generally without regard to age. However, where slopes exceed 20 percent, livestock distribution becomes a problem and younger age of livestock will better utilize the steeper slopes. Due to the site's potential to produce forbs, it may be better suited to be grazed by sheep and antelope.

Approximately 85 percent of the total annual yield are from species that furnish forage for grazing animal. The variety of grasses, forbs and shrubs furnish good nutrition for grazing animals during most of the year. Continuous grazing by cattle will cause the site to deteriorate and become less productive. Species such as black grama, sideoats grama, New Mexico feathergrass, little bluestem and winterfat will decrease in the percent composition. They replaced by species such as galleta, sand dropseed, rough tridens, threeawn spp., ring muhly, catclaw, broom snakeweed, juniper and forbs. Mesquite will easily invade this site as it deteriorates. A system of deferred grazing, which varies the season of rest and grazing during successive years, is needed to improve or to maintain a healthy well-balanced plant community. Deferment during different season of the year benefits different species. Winter rest will benefit woody species such as winterfat and feather dalea. Also, cattle show a definite preference to black grama during the late winter, and it can easily be overgrazed. Winter rest will reduce the grazing pressure on black grama. Spring rest (April-June) will benefit species such as New Mexico feathergrass, bottlebrush squirreltail and early forbs. Summer rest will benefit black grama, blue grama, sideoats grama, little bluestem, plains bristlegrass and forbs. Summer rest will allow the cool-season species to complete their growth cycle. Fall rest allows the warm-season species to complete their growth cycle.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.9 – 4.7
75 – 51	3.4 – 7.0
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
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	P	P	P	P	P	P	D	D	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	U	D	D	D	U	U	U	D	D	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	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
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	U	D	D	D	U	U	U	D	D	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	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	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	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
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	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
Astragalus	<i>Astragalus</i> spp.	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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	U	D	D	D

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: De Baca, Harding, 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:

Bascom	Gallegos
Gallen	Gomez
Holloman	Philder

Other Soils included are:

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	07/26/78	Don Sylvester	07/26/78

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	12/02/02	George Chavez	2/11/03