

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077BY018NM

Site Name: Sandy Loam

Precipitation or Climate Zone: 15 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to undulating areas of the sub-resource area at elevations ranging from 4,700 to 6,000 feet above sea level. Slopes are 0 to 5 percent. The exposure varies and is not significant.

Land Form:

1. Plain
2. Alluvial flat
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4,700	6,000
Slope (percent)	0	5
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 from about 15 to 16 inches annually, with approximately 75 percent of this yearly moisture falling during the period of May through October. Most summer rainfall is associated with usually brief afternoon and evening thunderstorms, which occasionally produce heavy rain over a small area, and sometimes bring a little hail. Winters are generally dry, with only one or two days a month when as much as one-tenth inch of moisture falls. However, winters average 20 inches of snow, though most snowfalls are light with an occasional storm producing up to six inches. Following these storms, snow may lie on the ground for several days and occasionally moderate to strong winds accompanying these storms result in blizzard conditions and heavy drifting. Although the precipitation patterns favor the production of warm-season plants, sufficient moisture is received in the late winter and the spring to support cool-season plants. Approximately 25 percent of the annual precipitation is received during April and May. May is generally the wettest month followed by July and then August.

Temperatures show the seasonal changes and large annual and diurnal ranges, characteristic of such a climate. Summers are generally mild; high daily temperature readings exceed 90 degrees F about one-third of the time, and readings of 100 degrees F occur about once a year. Rapid cooling after sundown results in minimum temperatures below 60 degrees F on most nights, even in midsummer. Winter shade temperatures usually rise to the mid 40's, and an average of only 15 days fail to see temperatures rise above the freezing mark. Winter nighttime temperatures fall below the freezing mark most of the time from early November through March; below zero readings occur on an average of only three times a year.

The freeze-free season ranges from 168 days to 171 days between April 28th to October 16th. Both temperatures and annual precipitation favor warm-season plants. About 40 percent of the annual precipitation is received during the season where temperatures will benefit cool-season plants, and only 10 percent falls during the dormant season.

While open to winter invasions of arctic air over the Great Plains, this area is far enough south and west to miss many of these outbreaks. Mountains to the north and west intercept much of the precipitation from Pacific northwest storms coming through this area during the winter. An average hourly wind velocity for the year is 15 miles per hour. Somewhat higher winds prevail during the spring months, but velocities exceeding 24 miles per hour are experienced only 10 percent of the usual year. Stronger winds blow chiefly from a westerly or southwesterly direction during the spring. Relative humidity is moderately low.

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):	158	191
Freeze-free period (days):	177	220
Mean annual precipitation (inches):	15	16

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.28	.38	18.5	50.1
February	.32	.40	21.9	58.7
March	.64	.69	26.3	61.6
April	.89	1.35	34.2	70.9
May	2.08	2.56	43.6	79.3
June	1.82	2.07	52.5	88.4
July	2.60	2.93	57.5	91.7
August	1.68	2.97	56.1	89.5
September	1.55	1.90	49.3	82.8
October	1.10	1.32	38.0	79.2
November	.41	.60	26.8	59.9
December	.38	.50	20.1	51.3

Climate Stations:

		Period					
Station ID	<u>290377</u>	Location	<u>Amistad 3ESE, NM</u>	From:	<u>04/01/25</u>	To:	<u>12/31/01</u>
Station ID	<u>291887</u>	Location	<u>Clayton WSO Airport, NM</u>	From:	<u>2/1/1896</u>	To:	<u>12/31/01</u>
Station ID	<u>293878</u>	Location	<u>Hayden, NM</u>	From:	<u>01/01/14</u>	To:	<u>09/30/65</u>
Station ID	<u>295937</u>	Location	<u>Mosquero, NM</u>	From:	<u>12/01/15</u>	To:	<u>12/31/01</u>
Station ID	<u>297638</u>	Location	<u>Roy, NM</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>

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 of this site are deep and well drained. The surface layer is fine sandy loam about 6 to 14 inches thick. The subsoil is medium and moderately fine textured. These soils have a moderate to moderately rapid permeability and moderate available water-holding capacity. Effective rooting depth is 20 inches or more. The air-water-plant relationship is favorable for plant growth. The ability of these soils to absorb moisture quickly makes them more responsive to light or erratic rainfall than adjacent sites having heavier textured surface layers.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Fine sandy loam

2. Sandy loam

3.

Surface Texture Modifier:

1. N/A

2.

3.

Subsurface Texture Group: Loamy

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

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

Subsurface Fragments <=3" (%Volume): 2 to 28

Subsurface Fragments >=3" (%Volume): 0 to 12

	Minimum	Maximum
Drainage Class:	Well	Somewhat excessively
Permeability Class:	Slow	Moderately rapid
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	4.00
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):	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 a grassland dominated by warm-season short and mid-grasses. Cool-season grasses and forbs make up an important component of the plant community. Woody species are a minor component.

Canopy Cover:

Trees	0
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30 – 35
Bare ground	30 – 35
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	20 – 25
Litter (average depth in cm.)	3

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	706	1,100	1,494
Forb	68	106	144
Tree/Shrub/Vine	34	53	72
Lichen			
Moss			
Microbiotic Crusts			
Total	850	1,325	1,800

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	265 – 331	265 – 331
2	BOCU	Sideoats Grama	199 – 265	199 – 265
3	SCSC	Little Bluestem	133 – 199	133 – 199
4	HENE5 HECO26	New Mexico Feathergrass Needleandthread	133 – 199	133 – 199
5	SPCR	Sand Dropseed	66 – 133	66 – 133
6	ERSE ERSE2	Red Lovegrass Tumble Lovegrass	66 – 133	66 – 133
7	PLJA	Galleta	40 – 66	40 – 66
8	ARIST	Threeawn spp.	40 – 66	40 – 66
9	2GRAM	Other Grasses	40 – 66	40 – 66

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	HELIA3 ERIOG SPHAE MIRUS	Sunflower spp. Buckwheat spp. Globemallow spp. Sensitive Briar	40 – 66	40 - 66

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	ARFI2 YUGL KRLA2 GUSA2 SENEC	Sand Sagebrush Small Soapweed Yucca Winterfat Broom Snakeweed Groundsel spp.	40 – 66	40 - 66

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 on this site include: sand muhly, buffalograss, silver bluestem, sand bluestem, switchgrass, sand paspalum and Indiangrass.

Other forbs include: scurfpea, prairie clover, western ragweed, New Mexico thistle, woolly Indianwheat and whorl-leaf milkweed.

Plant Growth Curves

Growth Curve ID 4910NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season short/mid-grassland with a major component of cool-season grasses and forbs and a minor shrub component.

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:

No Data.

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
Campus	B
Dalhart	B
Dallam	B
Kim	B
Otero	B
Rickmore	C
Tapia	B

Recreational Uses:

This site provides limited recreation potential, limited largely by the lack of live water and shade. Camping, picnicking and hiking are poor to fair. Photography of flowering plants and wildlife is fair to good. Hunting for upland game birds and rabbits is fair. Hunting for antelope is fair to good. The aesthetic appeal of this site is enhanced by the “wide open spaces” typical of the area.

Wood Products:

This site has no significant potential for wood production.

Other Products:

Grazing:

This site can be grazed during any season of the year by all classes of livestock generally without regard to age. Approximately 90 percent of the total annual yield is from species that furnish forage for grazing animals. The variety of species on this site provides good forage and nutrition for grazing animals during most seasons of the year. Supplemental protein is needed during the winter. Emergency feed may be required during periods of long snow cover. Continuous grazing or grazing continually during the period from April through October by cattle will cause the plant community to deteriorate. Species such as sideoats grama, little bluestem, New Mexico feathergrass, needleandthread and winterfat will diminish. A close turf of blue grama and buffalograss often characterizes the site under continuous grazing pressure. A system of deferred grazing, which varies the season of rest and grazing in a pasture during successive years, is needed to improve or maintain a healthy plant community. Different seasons of rest are needed for different species. Winter rest will benefit winterfat. Spring and early summer rest (April-July) will allow New Mexico feathergrass and needleandthread to grow and reproduce. Summer rest (July-September) will allow all warm-season plants to grow, improve vigor and produce seed. Fall rest is beneficial to both warm and cool-season species, allowing warm-season plants to complete their growth cycle. Grazing during the period from December through March may be beneficial to cool-season plants.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.0 – 4.4
75 – 51	2.7 – 8.4
50 – 26	4.0 – 14.0
25 – 0	14.0+

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
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	D	D	P	P	P	D	D	D	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	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
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	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
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	D	D	P	P	P	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	D	D	D	D	D	D	D	D
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Sensitive Briar	<i>Mimosa rupertiana</i>	L	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

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
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Sensitive Briar	<i>Mimosa rupertiana</i>	L	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Buckwheat	<i>Eriogonum</i> spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U
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, Harding, 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 Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Union, Harding Colfax.

Characteristic Soils Are:

Dalhart	Dallam
Otero	

Other Soils included are:

Campus	Kim
Rickmore	Tapia

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	05/23/84	Donald H. Fulton	06/13/84

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	06/11/01	George Chavez	12/18/02