

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R077BY015NM

**Site Name:** Clay Loam

**Precipitation or Climate Zone:** 15 to 16 inches

**Phase:** \_\_\_\_\_

## PHYSIOGRAPHIC FEATURES

### **Narrative:**

This site occurs on level to nearly level sloping areas on the upland plains. Slopes are generally 1 to 3 percent but may range to 9 percent. Elevations range from 5,000 to 6,800 feet above sea level.

### **Land Form:**

1. Plain

2.

3.

### **Aspect:**

1. N/A

2.

3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	5,000	6,800
<b>Slope (percent)</b>	1	9
<b>Water Table Depth (inches)</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Flooding:</b>		
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Ponding:</b>		
<b>Depth (inches)</b>	N/A	N/A
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	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 range, 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 28<sup>th</sup> to October 16<sup>th</sup>. 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 the 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 months. 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.

	<b>Minimum</b>	<b>Maximum</b>
<b>Frost-free period (days):</b>	158	191
<b>Freeze-free period (days):</b>	177	220
<b>Mean annual precipitation (inches):</b>	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 to moderately deep and are well drained. The surface texture ranges from clay loam to silty clay loam. The subsoil texture is a clay or stony clay loam. These soils have good water capacity but the infiltration is moderate to slow. Effective rooting depth is 60 inches or more. When adequate plant cover and residue are present, infiltration is much more rapid. Where good cover is lacking, the soils of this site usually develop a dispersed surface condition, which decreases their low infiltration rate.

**Parent Material Kind:** Alluvium

**Parent Material Origin:** Mixed

### **Surface Texture:**

1. Clay loam

2. Silty clay loam

3.

### **Surface Texture Modifier:**

1. N/A

2.

3.

**Subsurface Texture Group:** Clayey

**Surface Fragments  $\leq 3''$  (% Cover):** N/A

**Surface Fragments  $> 3''$  (% Cover):** N/A

**Subsurface Fragments  $\leq 3''$  (%Volume):** 0 to 4

**Subsurface Fragments  $\geq 3''$  (%Volume):** N/A

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	Well	Well
<b>Permeability Class:</b>	Impermeable	Slow
<b>Depth (inches):</b>	60	$> 72$
<b>Electrical Conductivity (mmhos/cm):</b>	0.00	2.00
<b>Sodium Absorption Ratio:</b>	N/A	N/A
<b>Soil Reaction (1:1 Water):</b>	6.6	8.4
<b>Soil Reaction (0.1M CaCl<sub>2</sub>):</b>	N/A	N/A
<b>Available Water Capacity (inches):</b>	6	9
<b>Calcium Carbonate Equivalent (percent):</b>	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. Cool-season grasses occupy an important portion of the plant community. Annual and perennial forbs are a minor component. Few woody plants are indigenous to this site.

Canopy Cover:

Trees	0
Shrubs and half shrubs	0 – 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	616	1,100	1584
Forb	21	38	54
Tree/Shrub/Vine	21	38	54
Lichen			
Moss			
Microbiotic Crusts			
<b>Total</b>	700	1,250	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	Blue Grama	313 – 375	313 – 375
2	PLJA	Galleta	188 – 250	188 – 250
3	PASM	Western Wheatgrass	188 – 250	188 – 250
4	PAOB	Vine-mesquite	125 – 188	125 – 188
5	BUDA	Buffalograss	63 – 125	63 – 125
6	BOCU	Sideoats Grama	25 – 50	25 – 50
7	MURI	Mat Muhly	25 – 50	25 – 50
8	2GRAM	Other Grasses	25 – 50	25 – 50

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	PSLA3 DALEA AMPS 2FA 2FP	Lemon Scurfpea Prairie Clover spp. Western Ragweed Annual Forbs Perennial Forbs	0 – 63	0 – 63

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ATCA2 GUSA2 2SD	Fourwing Saltbush Broom Snakeweed Other Shrubs	0 – 63	0 – 63

**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: silver bluestem, threeawn spp., ring muhly, bottlebrush squirreltail.

Other shrubs include: cholla cactus, prickly pear cactus, and wolfberry.

Other forbs include: prairie coneflower, and dotted gayfeather.

**Plant Growth Curves**

**Growth Curve ID** 4907NM

**Growth Curve Name:** HCPC

**Growth Curve Description:** Warm-season short/mid-grassland with a major cool-season grass component and a minor forb and 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**

<b>Soil Series</b>	<b>Hydrologic Group</b>
La Brier	D
Litle	C
Manzano	B
Sherm	D

### **Recreational Uses:**

This site has limited recreation potential due to the lack of live water and trees. It provides poor camping, hiking, and picnicking. Hunting is fair for rabbits and upland game birds and fair to good antelope hunting. The terrain typical of the “wide open spaces” of the area enhances the aesthetic appeal.

**Wood Products:**

This site has no significant potential for wood production.

**Other Products:**

Grazing:

This site can be grazed any season of the year by all classes of livestock. Approximately 95 percent of the annual yield is from species that furnish forage for grazing animals. Continuous yearlong grazing or continually grazing during the period from April to October will result in a plant community that is dominated by blue grama and buffalograss. Blue grama tends to form a low sod-like plant instead of a bunch grass. Forage production and vigor is greatly reduced. Continuous heavy grazing will result in a loss of plant cover causing areas of denuded soil and further reduces the productivity of the site. Cholla cactus, prickly pear cactus and broom snakeweed will increase under these conditions. A system of deferred grazing, which varies the season of grazing and rest in pastures, is needed to maintain or improve the plant community. Different seasons of rest benefit different plants. Winter rest will benefit fourwing saltbush. Spring rest (April – June) is needed to maintain or improve western wheatgrass and bottlebrush squirreltail. Summer rest will benefit warm-season plants such as blue grama, sideoats grama, and vine-mesquite.

**Other Information:**

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

<b>Similarity Index</b>	<b>Ac/AUM</b>
100 - 76	2.1 – 4.9
75 – 51	2.8 – 6.2
50 – 26	4.2 – 13.0
25 – 0	13.0+

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
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	D	D	D	D	D	D	P
Prairie Clover	Dalea 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
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P

**Animal Kind:** Livestock

**Animal Type:** Horses

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Sideoats Grama	Bouteloua curtipendula	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
Vine-mesquite	Panicum obtusum	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
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Prairie Clover	Dalea 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

**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
Prairie Clover	Dalea 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

**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:

Sherm | Gruver

Other Soils included are:

La Brier | Little

Manzano |

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	06/05/01	George Chavez	12/18/02