

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077BY026NM

Site Name: Loamy

Precipitation or Climate Zone: 15 to 19 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on nearly level to undulating plains. Elevation ranges from approximately 4,000 to 5,000 feet above sea level. Slopes range from 0 to 9 percent.

Land Form:

1. Plain

2.

3.

Aspect:

1. N/A

2.

3.

	Minimum	Maximum
Elevation (feet)	4,000	5,000
Slope (percent)	0	9
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 15 to 19 inches. Seventy percent of the moisture usually falls during the six-month period 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. Spring precipitation (March, April, May) accounts for approximately 25 percent of the annual precipitation. Most of this comes as light rain showers. Winter moisture may occur as either rain or snow and usually averages less than ½ inch per month.

Temperatures are characterized by distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm; maximum temperatures average above 90 degrees F in July and August. Temperatures usually fall rapidly after sundown and range in the low 60’s on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in mid-winter usually rise to the 50’s. However, freezing temperatures normally occur at night from mid-November to mid-March.

The frost-free season ranges from 181 to 199 days. Dates of the last freeze vary from April 10th to April 23rd and the first freeze varies from October 18th to October 26th.

Wind velocities in this area are high and average about 5.3 miles per hour on an annual basis. The spring months are characterized by frequent windstorms with velocities in excess of 45 miles per hour, which cause excessive erosion on soils not protected by a good ground cover of vegetation. Humidity is low and evaporation is high.

Both temperature and rainfall distribution favor production of warm-season, perennial plants in this area. However, sufficient late winter and early spring moisture allows cool-season species to occupy an important component within most plant communities.

Climate data was obtained from the WCCR web site using 50 % probabilities for freeze-free and frost-free season using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	<u>175</u>	<u>183</u>
Freeze-free period (days):	<u>191</u>	<u>202</u>
Mean annual precipitation (inches):	<u>15</u>	<u>19</u>

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.43	.50	21.8	52.8
February	.43	.66	25.0	57.7
March	.68	.80	30.0	64.7
April	.90	1.05	38.1	73.4
May	2.01	2.35	47.3	81.8
June	2.13	2.67	56.1	90.9
July	2.80	3.25	60.6	93.4
August	2.80	3.05	59.4	91.2
September	1.66	2.17	52.4	85.1
October	1.29	1.37	41.5	75.0
November	.59	.72	30.3	62.5
December	.49	.65	22.1	53.5

Climate Stations:

Station ID	Location	From:	To:
291332	Cameron, NM	01/01/48	05/31/98
295516	McCarty Ranch, NM	11/01/83	12/31/01
297226	Ragland 3SSW, NM	02/01/35	12/31/01
297867	San Jon, NM	01/01/14	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 and deep, well drained soils on uplands and alluvial fans. The surface layers are silt loam, loam or clay loam. The subsoil and substratum ranges in texture from sandy loam through clay loam. The surface runoff is medium. The permeability is slow to moderately rapid. Infiltration rate is medium to moderately slow. Available water-holding capacity is high. Effective rooting depth is 20 to 60 inches or more.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Fine sandy loam
3. Sandy clay loam
4. Gravelly loam
5. Clay loam

Surface Texture Modifier:

1. Gravel
2.

Subsurface Texture Group: Loamy

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

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

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

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

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Very slow	Moderately rapid
Depth (inches):	<10	>72
Electrical Conductivity (mmhos/cm):	0.00	8.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	9	12
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

Warm-season short grasses, principally blue grama and buffalograss dominate this site. Mid-grasses and forbs are in smaller amounts. Cool-season grasses make up a minor component of the plant community. Few woody species are found in the plant community. Western wheatgrass and switchgrass usually grow in the small depressions in which water collects.

Canopy Cover:

Trees	0
Shrubs and half shrubs	2 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	40
Bare ground	28
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	20
Litter (average depth in cm.)	5

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	560	800	1,280
Forb	105	150	240
Tree/Shrub/Vine	35	50	80
Lichen			
Moss			
Microbiotic Crusts			
Total	700	1,000	1,600

Plant Community Composition and Group Annual Production: Plant species are grouped by annual production **not** by functional groups.

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2	Blue Grama	300 – 350	300 – 350
2	PLJA PLMU3	Galleta Tobosa	100 – 120	100 – 120
3	BUDA	Buffalograss	80 – 100	80 – 100
4	BOCU	Sideoats Grama	80 – 100	80 – 100
5	SPCR	Sand Dropseed	50 – 80	50 – 70
6	PASM PAVI2	Western Wheatgrass Switchgrass	50 – 70	50 – 70
7	MUTO2 LYPH	Ring Muhly Wolftail	30 – 50	30 – 50
8	ARIST	Threawn spp.	30 – 50	30 – 50
9	PAOB	Vine-mesquite	30 – 50	30 – 50
10	BOBA3 BOSA	Cane Bluestem Silver Bluestem	30 – 50	30 – 50
11	ELEL5	Bottlebrush Squirreltail	30 – 50	30 – 50
12	SCSC	Little Bluestem	30 – 50	30 – 50
13	HECO26 BOER4 SEVU2 TRMU PAHA 2GRAM	Needleandthread Black Grama Plains Bristlegrass Slim Tridens Hall's Panicum Other Grasses	30 – 50	30 – 50

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	SPHAE	Globemallow spp.	10 – 30	10 – 30
15	HEAN3	Annual Sunflower	10 – 30	10 – 30
16	ASTRA	Astragalus spp.	10 – 30	10 – 30
17	2FA	Other Annual Forbs	30 – 50	30 – 50
18	2FP	Other Perennial Forbs	30 – 50	30 – 50

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
19	YUCCA	Yucca spp.	10 – 30	10 – 30
20	KRLA2 SENEC	Winterfat Groundsel spp.	10 – 30	10 – 30
21	GUSA2	Broom Snakeweed	0 – 10	0 – 10
22	OPPO OPUNT OPSP2	Plains Pricklypear Cactus Cactus spp. Cholla Cactus	0 – 10	0 – 10

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 5201NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season short grasses grassland with minor components of cool-season grasses, forbs and shrubs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

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
Amarillo	B
Bascom	B
Clovis	B
Friona	C
Larimer	B
Mansker	B
Olton	C
Portales	B
Potter	D, B
Pullman	C
Slaughter	C

Recreational Uses:

Recreation potential is limited largely by the lack of water and firewood. Suitability for camping, hiking and picnicking is fair. The terrain typical of the “wide open spaces” of the area enhances aesthetic appeal. Hunting is fair for small game and upland game birds and hunting is good for antelope.

Wood Products:

This site produces no wood products.

Other Products:

Grazing:

This site can be grazed any season of the year by all classes and ages of livestock. The site provides good winter grazing but offers little natural protection against storms. It is better suited to cow-calf or yearlings due to the large percentage of grass in the potential plant community. Continuous yearlong grazing or grazing continually during the period from March through October by cattle will result in a decrease of species such as sideoats grama, vine-mesquite, little bluestem, western wheatgrass, bottlebrush squirreltail and winterfat. Species such as blue grama, galleta or tobosa, buffalograss, ring muhly, threeawn spp. and broom snakeweed will increase. Cholla cactus will increase on this site under continuous heavy grazing pressure where there is an available seed source. Blue grama will form a low dense turf under continuous grazing pressure. A system of deferred grazing by domestic livestock, which varies the season of grazing and rest during successive years, will result in healthy, high forage producing plant community. Fall and winter rest will benefit species such as winterfat. Spring rest (April-June) will allow species such as western wheatgrass and bottlebrush squirreltail to grow and reproduce. Summer rest will benefit warm-season species such as blue grama, sideoats grama and vine-mesquite to gain vigor and produce. Ninety-five percent of the annual production is from species that provide forage for grazing animals. Where the plant community has deteriorated to low turflike blue grama, buffalograss and ring muhly, grazing management alone may not achieve the desired range improvement. Mechanical range treatment and interseeding may be needed also.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.3 – 4.9
75 – 51	2.8 – 5.9
50 – 26	4.0 – 9.0
25 – 0	9.0+

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	P	P	P	P	D	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
Vine-mesquite	<i>Panicum obtusum</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Arizona Cottontop	<i>Digitaria californica</i>	EP	U	U	U	U	U	U	P	P	D	U	U	U
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	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
Needleandthread	<i>Hesperostipa comata</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Plains Bristlegrass	<i>Setaria vulpiseta</i>	EP	D	D	D	D	P	P	P	P	P	D	D	D
Slim Tridens	<i>Tridens muticus</i>	EP	U	U	U	U	U	U	D	D	D	U	U	U
Hall's Panicum	<i>Panicum hallii</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	P	P	P	P	P	P	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	P	P	P	P	D	D	D	D	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	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
Needleandthread	<i>Hesperostipa comata</i>	EP	D	D	P	P	P	D	D	D	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	P	P	P	P	P	D	D	D
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	D	D	P	P	D	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Plains Bristlegrass	<i>Setaria vulpiseta</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
Globemallow	<i>Sphaeralcea</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

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
Globemallow	<i>Sphaeralcea</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

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: Curry, Harding, Quay

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: Curry, Harding & Quay

Characteristic Soils Are:

Amarillo, Bascom, Clovis, Friona, Larimer	Mansker, Olton, Portales, Potter, Pullman,
Slaughter	

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	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	08/28/02	George Chavez	09/12/02