

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077BY008NM

Site Name: Meadow

Precipitation or Climate Zone: 15 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on nearly level to gently sloping bottoms and fans. The soils frequently have a fluctuating water table at a depth of 1 to 4 feet. The site receives water from the surrounding sites either as shallow groundwater or surface runoff. Elevation ranges from 4,300 to 5,900 feet above sea level. Slopes are concave and range from 0 to 4 percent. Exposure varies and is not significant.

Land Form:

1. Valley floor
2. Fan
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4,300	5,900
Slope (percent)	0	4
Water Table Depth (inches)	12	48
	Minimum	Maximum
Flooding:		
Frequency	Rare	Rare
Duration	Brief	Brief
	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 thundershowers, 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 one a year. Rapid cooling after sundown results in minimum temperatures below 60 degrees F on most nights, even in mid summer. 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 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. 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 (⁰F) 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 moderately deep to deep, slightly saline and poorly drained. The texture of the surface layer is silty clay loam to loamy fine sand. The subsurface layer is silty clay loam to loamy fine sand. The permeability is moderate to slow. The available water-holding capacity is high. The effective rooting depth is 40 to 60 inches. These soils have a fluctuating water table at depths of 1 to 4 feet much of the growing season.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Silty clay loam

2. Loamy fine sand

3.

Surface Texture Modifier:

1. N/A

2.

3.

Subsurface Texture Group: Loamy, clayey

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

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

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

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

	Minimum	Maximum
Drainage Class:	Poor	Well
Permeability Class:	Slow	Moderate
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	8.00
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):	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

This site is a mixed grassland dominated by warm-season tall and mid grasses. Cool-season grasses make up an important component of the plant community. Forbs and woody species make up only a minor component.

Canopy Cover:

Trees	0
Shrubs and half shrubs	0 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	40 – 45
Bare ground	10 – 15
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	30 – 35
Litter (average depth in cm.)	5

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	1,620	2,610	3,600
Forb	90	145	200
Tree/Shrub/Vine	90	145	200
Lichen			
Moss			
Microbiotic Crusts			
Total	1,800	2,900	4,000

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	PASM BOGR2 PAVI2	Western Wheatgrass Blue Grama Switchgrass	290 – 435	290 – 435
2	SCSC SONU2 ANGE	Little Bluestem Indiangrass Big Bluestem	145 – 290	145 – 290
3	PAOB PLJA CAREX DISP SPAI 2GRAM	Vine-mesquite Galleta Sedges spp. Inland Saltgrass (Desert) Alkali Sacaton Other Grasses	87 – 145	87 - 145

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
4	2FA	Annual Forbs	0 – 145	0 – 145
5	2FP	Perennial Forbs	0 – 145	0 – 145

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
6	ARFR4 ATCA2 2SD	Fringed Sagewort Fourwing Saltbush Other Shrubs	0 – 145	0 - 145

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, sideoats grama, buffalograss, mat muhly, Canadian wildrye, spike dropseed, and sand dropseed.
 Other shrubs include: broom snakeweed, willows, wildrose, and skunkbush sumac.
 Other forbs include: sweetclover, common fireweed, western ragweed, and wild buckwheat.

Plant Growth Curves

Growth Curve ID 4902NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed grassland dominated by warm-season tall/mid grasses. Cool-season grasses make up a major component and forbs and shrubs are a minor 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
Manzano	C

Recreational Uses:

This site provides limited recreation potential due to the dense vegetative growth. Hiking, camping, picnicking are poor to fair. Hunting for small rabbits and birds is fair. The natural beauty is enhanced by the change from the upland grasslands to the green meadows.

Wood Products:

This site has not significant potential for wood products.

Other Products:

Grazing:

This site can be grazed during any season of the year. It is best suited to cattle due to the coarseness of the forage produced by the tall and mid grasses. Approximately 90 percent of the total annual production is from species that will furnish forage for grazing animals. This site “greens-up” earlier and stays green longer than the surrounding upland sites due to the availability of water. Continuous grazing by cattle will cause the plant community to deteriorate. Species such as switchgrass, Indiangrass, sand bluestem, little bluestem and western wheatgrass will decrease and blue grama, alkali sacaton, inland saltgrass, silver bluestem and broom snakeweed will increase. A system of deferred grazing, which varies the season of grazing and rest in a pasture, is needed to maintain or improve the plant community. Different seasons of rest benefit different plants.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	0.9 – 2.5
75 – 51	1.8 – 4.0
50 – 26	2.4 – 6.4
25 – 0	6.4+

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
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
Silver Bluestem	Bothriochloa saccharoides	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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Big Bluestem	Andropogon gerardii	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
Indiangrass	Sorghastrum nutans	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
Switchgrass	Panicum virgatum	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
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	D	D	D	D	D	D	P

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
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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	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
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

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
Sweetclover	Trifolium spp.	EP	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: Colfax, Harding, Union

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes No

General Legal Description: _____

<u>Relationship to Other Established Classifications:</u>
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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:

Manzano	
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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	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	05/22/02	George Chavez	12/18/02