UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077BY019NM

Site Name: Salt Flats (CP-1, HP-2)

Precipitation or Climate Zone: 14 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to moderately sloping uplands in elevations ranging from 5,500 to 6,500 feet above sea level. This site may occur in the concave depressions but receives little or no additional moisture. The site is differentiated from the other upland sites because of the moderate to strong saline or alkaline in the soil profile.

Land Form:

1. Depression
2.
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	5,500	6,500
Slope (percent)	0	7
Water Table Depth (inches)	60	>72

Flooding:	**Minimum**	**Maximum**
Frequency	Rare	Rare
Duration	Very brief	Brief

Ponding:	**Minimum**	**Maximum**
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 14 to 16 inches. Seventy seven percent of the year's moisture normally falls during the period of May through October. Practically all of it is brought by brief afternoon and evening thunderstorms. In July and August, normally the wettest months of the year, one can expect about one day in five when rainfall exceeds one-tenth inch. Early spring precipitation in May benefits the cool-season plants. Winter precipitation, supplying 24 percent of the year's moisture, normally has no more than two days a month with as much as one-tenth inch of moisture. Much of the winter precipitation falls as snow.

Air temperatures vary from a monthly mean of 20 degrees F in January to 69 degrees F in July. Daily high temperatures average in the 80's and low 90's during the summer. Winter low temperatures fall below the freezing mark much of the time from November through March with minimum temperatures approaching 25 degrees F below zero. Dates of the last killing frost may vary from May 9th through May 17th, and the first killing frost from September 27th to October 8th. The frost-free season ranges from 141 days to 153 days from early May to early October.

Wind velocities for the area average 10 to 12 miles per hour and prevail from the south and southwest. Generally, March is the windiest month. Strong winds during the spring cause rapid drying of the soil surface.

Nearby mountains to the west intercept much of the precipitation from the Pacific storms coming through this area during the winter. About 70 percent of the 14 to 16 inches of annual precipitation falls in the form of rainfall during the frost-free season. About 40 percent of the annual precipitation benefits cool-season plants, 50 percent benefits warm-season plants and 10 percent falls during the season of plant dormancy. Relative humidity is moderately low. The sun shines approximately 75 percent of the time.

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):	132	149
Freeze-free period (days):	153	171
Mean annual precipitation (inches):	14	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.27	.40	10.4	48.2
February	.26	.43	14.1	52.7
March	.56	.78	20.4	59.6
April	.85	1.20	28.7	67.9
May	1.68	2.49	38.3	76.4
June	1.77	2.21	46.3	85.7
July	2.53	3.43	50.9	88.8
August	2.95	3.57	50.6	86.6
September	1.56	2.02	42.9	80.7
October	1.02	1.20	31.4	71.4
November	.44	.59	19.9	57.6
December	.25	.51	12.3	50.5

Climate Stations:

				Period	
Station ID 293706	Location	Grenville, NM	From: 01/01/41	To:	12/31/01
Station ID 294856	Location	Las Vegas FAA Airport, NM	From: 01/01/41	To:	12/31/01
Station ID 295490	Location	Maxwell, NM	From: 01/01/14	To:	12/31/01
Station ID 297280	Location	Raton KRTN Radio, NM	From: 12/01/78	To:	12/31/01
Station ID 298501	Location	Springer, NM	From: 01/01/14	To:	12/31/01
Station ID 299330	Location	Valmora, NM	From: 03/01/17	To:	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:

The soils in this site are deep. They are moderately well drained to well drained and have medium to slow runoff. The surface textures range from silty clay loam and saline silty clay loam. The substratum is clay loam and clay. These soils have slow to very slow permeability. The available water-holding capacity is high. The hazard of soil erosion is moderate to high and hazard of soil blowing is moderate. These soils are affected by salt. Where adequate plant residue is lacking, the soils of this site usually develop a dispersed surface condition, which decreases their low infiltration rate.

Parent Material Kind: Marine deposits
Parent Material Origin: Gypsum

Surface Texture:

1. Silty clay loam
2. Silty clay loam saline
3.

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: 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:	Moderately well	Well
Permeability Class:	Very slow	Slow
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	N/A	N/A
Sodium Absorption Ratio:	Slight	Moderate
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
The site is a grassland characterized by warm-season mid-grasses with an occasional shrub. Shrubs and half-shrubs are sparsely scattered throughout the site. Cool-season species make up a minor component of the plant community. Vegetation that is tolerant to saline or alkaline factors dominates this site.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30 – 35
Bare ground	35 – 40
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	10 – 15
Litter (average depth in cm.)	3 - 5

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	415	789	1,162
Forb	20	38	56
Tree/Shrub/Vine	40	76	112
Lichen			
Moss			
Microbiotic Crusts			
Total	500	950	1,400

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	SPAI	Alkali Sacaton	190 – 238	190 – 238
2	PASM	Western Wheatgrass	95 – 143	95 – 143
3	BOGR2	Blue Grama	95 – 143	95 – 143
4	DISP	Inland Saltgrass (desert)	48 – 95	48 – 95
5	PAOB	Vine-mesquite	48 – 95	48 – 95
6	MUAS MURI	Alkali Muhly Mat Muhly	29 – 48	29 – 48
7	PLJA	Galleta	29 – 48	29 – 48
8	PAVI2	Switchgrass	29 – 48	29 – 48
9	2GRAM	Other Grasses	29 – 48	29 – 48

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ERIOG	Wild Buckwheat	29 – 48	29 – 48
11	SPHAE	Globemallow spp.	29 – 48	29 – 48
12	2FP 2FA	Other Perennial Forbs 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
13	ATCA2	Fourwing Saltbush	48 – 95	48 – 95
14	KRLA2	Winterfat	29 – 48	29 – 48
15	2SD	Other Shrubs	29 – 48	29 - 48

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: bottlebrush squirreltail, plains bristlegrass, nuttail alkaligrass, threeawn spp., dropseed spp., windmill grass, silver bluestem, creeping muhly and sedges.
Other shrubs include: rabbitbrush, greasewood and fringed sagewort.

Plant Growth Curves

Growth Curve ID **NM3717**

Growth Curve Name: **HCPC**

Growth Curve Description: **Warm-season mid-grass grassland with scattered shrubs and forbs.**

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:

Habitat for Wildlife:

This site provides habitats, which support a resident animal community that is characterized by coyote, desert cottontail, meadow mole, sparrow hawk, mourning dove, bull snake and great plains skunk.

There maybe seasonal use by pronghorn antelope.

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**
La Brier	C
Swastika	C
Vermejo	C

Recreational Uses:

This site has fair aesthetic appeal due to open spaces dotted with the occasional shrubs. The site has limited recreation potential. Suitability for camping, hiking and picnicking is fairly limited by lack of live water and the lack of shade. Hunting for antelope, rabbit and upland game birds is fair.

Wood Products:

This site has no significant value for wood products.

Other Products:

Grazing:

This site is suitable for late winter, spring, and early summer grazing. Forage can best be utilized by grazing cattle or horses due to the coarseness of the forage produced by alkali sacaton. Maximum available forage production from this site can be achieved by mowing in late winter and stocking with cows during the summer, and alternately resting the pasture the following year. Approximately 80 percent of the total annual yield is from species that furnish forage for livestock. Continuous grazing during the spring and summer will cause the more desirable forage plants such as alkali sacaton, western wheatgrass, blue grama, vine-mesquite and fourwing saltbush to decrease. The species most likely to invade this site are ring muhly, broom snakeweed, astragulas species, cholla cactus and plains pricklypear cactus. Species most likely to increase from smaller amounts are inland saltgrass, alkali muhly, mat muhly and rabbitbrush. As the ecological conditions deteriorate, it is accompanied by a sharp increase of inland saltgrass. Inland saltgrass may eventually dominate the site and there is a reduction of the plant cover. A system of deferred grazing, which varies the time of grazing and rest in a pasture during successive years, is needed to maintain or improve the plant community. Spring rest will allow alkali sacaton sufficient time to green up and will benefit the cool-season grasses such as western wheatgrass. Occasional summer deferment is needed to maintain the alkali sacaton especially where cattle are concentrated for periods of time during the growing season.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.5 – 3.5
75 – 51	3.3 – 4.4
50 – 26	4.3 – 8.0
25 – 0	8.0+

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
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
Winterfat	Krascheninnikovia lanata	L/S	D	D	P	P	P	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
Perennial Forbs	Various	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
Annual Forbs	Various	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
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	D	D	D	D	D	D	P
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	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
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
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

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
Perennial Forbs	Various	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
Annual Forbs	Various	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
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	D	D	P	P	P	D	D	D	D	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	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: **Colfax, Mora, 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: Colfax, Mora, San Miguel, Union.

Characteristic Soils Are:	
La Brier	Swastika
Vermejo	
Other Soils included are:	

Site Description Approval:

{PRIVATE}Author	Date	Approval	Date
Don Sylvester	04/25/80	Durwood E. Bell	04/29/80

Site Description Revision:

{PRIVATE}Author	Date	Approval	Date
Elizabeth Wright	06/11/01	George Chavez	12/17/02