

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC108NM

Site Name: Limy

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to strongly sloping piedmont slopes and plains. Slopes average 5 percent or less, although they may range to 15 percent. Elevation ranges from 5,000 to 7,000 feet above sea level. Aspect varies but is not significant.

Land Form:

1. Fan piedmont
2. Plain
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	5,000	7,000
Slope (percent)	<5	15
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:

Negilgible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is "semi-arid continental."

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are not uncommon. Seventy-five percent of the precipitation falls from April to October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is about 50 degrees F with extremes of -29 degrees F in the winter and 103 degrees F in the summer.

The average frost-free season is 130 to 160 days. The last killing frost falls in early May and the first killing frost in early October.

Both temperature and precipitation favor warm-season perennial species. However, about 40 percent of the annual precipitation falls at a time favorable to cool-season plant growth. The soils of the site can also store water from winter and early spring moisture for use by cool-season species. This allows the cool-season species to occupy an important component of this site. Strong winds that blow from the west and southwest from February to June can dry the soil profile quickly during a critical period for cool-season growth.

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):	<u>131</u>	<u>173</u>
Freeze-free period (days):	<u>155</u>	<u>187</u>
Mean annual precipitation (inches):	<u>13</u>	<u>16</u>

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.34	.92	15.6	42.1
February	.34	.81	19.9	52.9
March	.23	.98	24.4	59.7
April	.39	.96	31.4	68.9
May	.85	1.61	39.2	77.7
June	.89	1.62	46.9	87.1
July	1.77	2.75	53.1	88.5
August	2.46	3.22	51.9	85.7
September	1.54	2.26	44.3	80.4
October	1.00	1.51	32.8	70.5
November	.57	1.02	22.2	57.5
December	.34	1.16	15.9	49.3

Climate Stations:

Station ID	Location	Period
291918	Clines Corners 7SE, NM	From: 12/10/19 To: 11/30/00
292096	Corona 11SSW, NM	From: 12/01/77 To: 09/30/92
293060	Estancia, NM	From: 01/01/14 To: 12/31/00
293649	Gran Quivira Natl. Monument, NM	From: 06/01/38 To: 12/31/00
295965	Mountainair, NM	From: 03/01/14 To: 12/31/00
299405	Vaughn, NM	From: 01/01/77 To: 12/31/00

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from wetlands or streams.

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 well drained, moderately deep to deep. The surface texture ranges from fine sandy loam to clay loam. Water-holding capacity is moderately high to high, and permeability is moderate to moderately slow. These soils are highly calcareous on the surface and throughout the profile. There is a calcic horizon within 20 inches of the surface that may be weakly cemented. This can affect the rooting depth of the vegetation. If unprotected by vegetative cover, these soils are highly susceptible to wind and water erosion.

Parent Material Kind: Marine deposits

Parent Material Origin: Mixed-calcareous

Surface Texture:

1. Fine sandy loam
2. Clay loam
3. Loam
4. Very fine sandy loam

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): 15 to 35

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

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately rapid
Depth (inches):	20	>72
Electrical Conductivity (mmhos/cm):	0.00	16.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	7.4	9.0
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	6	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 is a grassland site characterized by a mixture of warm- and cool-season mid and short perennial grasses. Woody species occupy an important, although minor portion of the plant community. Forbs are a minor component of this site. However, during years of abundant spring and fall moisture, a large variety of forbs occur throughout this site. The calcium content of the soils has a direct effect on the kinds as well as amount of vegetation produced.

Canopy Cover:

Trees	0 – 1 %
Shrubs and half-shrubs	2 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 30
Bare ground	40 – 50
Surface cobble and stone	0 – 2
Litter (percent)	15 – 20
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	340	808	1,275
Forb	32	76	120
Tree/Shrub/Vine	32	76	120
Lichen			
Moss			
Microbiotic Crusts			
Totals	400	950	1,500

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	BOER	Black Grama	143 - 238	143 - 238
2	BOCU	Sideoats Grama	95 - 143	95 - 143
3	HEHE5 HECO26	New Mexico Feathergrass Needleandthread	95 - 285	95 - 285
4	PASM	Western Wheatgrass	48 - 95	48 - 95
5	BOGR2 PLJA BOHI2	Blue Grama Galleta Hairy Grama	95 - 143	95 - 143
6	SCSC	Little Bluestem	29 - 48	29 - 48
7	ACHY PIFI	Indian Ricegrass Pinyon Ricegrass	19 - 48	19 - 48
8	ELEL5	Bottlebrush Squirreltail	29 - 48	29 - 48
9	SPCR SPFL2	Sand Dropseed Mesa Dropseed	29 - 48	29 - 48
10	ARIST	Threawn spp.	29 - 48	29 - 48
11	2GRAM	Other Grasses	48 - 76	48 - 76

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	LIPU	Dotted Gayfeather	10 - 19	10 - 19
13	SOEL	Silverleaf Nightshade	10 - 19	10 - 19
14	PLPA2	Wooly Indian-wheat	19 - 48	19 - 48
15	SENEC	Threadleaf Groundsel	10 - 19	10 - 19
16	2FORBS	Other Forbs	10 - 29	10 - 29

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
17	KRLA2	Winterfat	48 - 95	48 - 95
18	ATCA2	Fourwing Saltbush	29 - 48	29 - 48
19	EPHED	Ephedra spp.	10 - 29	10 - 29
20	ARBI3	Bigelow Sagebrush	10 - 29	10 - 29
21	ERNAN5 GUSA2	Rubber Rabbitbrush Broom Snakeweed	29 - 48	29 - 48
22	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: spike dropseed, alkali sacaton, ring muhly, mat muhly, wolftail, cane bluestem, silver bluestem, prairie junegrass, plains lovegrass, tridens spp., inland saltgrass, and spike muhly.

Other shrubs include: cacti spp., yucca spp., algerita, pinyon, juniper, oak spp., sandsage, and sacahuista.

Other forbs include: rocky mountain beeplant, locoweed, lambert crazyweed, scarlet globemallow, and mariola.

Plant Growth Curves

Growth Curve ID 4308NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed warm/cool-season mid/short perennial grassland with a minor woody and forb components.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for wildlife:

This site provides a habitat which supports a resident animal community that is characterized by pronghorn antelope, blacktailed jackrabbit, Gunnison's prairie dog, bannertailed kangaroo rat, badger, pocket gopher, chipping sparrow, mourning dove, burrowing owl, pocket mouse, prairie rattlesnake, short-horned lizard, western spadefoot toad, leopard lizard, common raven, and prairie falcon hunt over the site.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil sgroups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Dean	B
Harvey	B
Ildefonso	B
Rock Outcrop	B
Tulargo	B
Willard	B

Recreational Uses:

This site offers fair to good potential for hiking, horseback riding, nature observation, and photography. Camping is limited due to the lack of water and shade. Hunting for antelope and small game is good. Bird hunting is good if water is near. Trapping for fur-bearing animals is good. During years of abundant rainfall, the natural beauty is enhanced by an array of colorful wildflowers.

Wood Products:

Under the potential vegetative community, this site has no potential for wood products. However, in areas where pinyon and juniper have increased or invaded, there is limited potential for fencing material and fuelwood.

Other Products:**Grazing:**

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Approximately 90 percent of the total annual production is from species that furnish quality forage to grazing animals. Continuous grazing year-long or grazing continually during the growing season will cause this site to deteriorate. Species such as black grama, sideoats grama, New Mexico feathergrass, western wheatgrass, winterfat, and fourwing saltbush will decrease. They will be replaced by alkali sacaton, blue grama, inland saltgrass, broom snakeweed, and yucca. Continued deterioration of this site can cause severe erosion that would require extensive structural work and management to correct. The site responds best to a system of grazing that rotates the season of use. In some areas, pinyon and juniper have invaded or have increased on this site and may appear as even-aged long-lived stands. Predator control should be considered when using this site during calving or when running sheep or goats.

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

Similarity Index	Ac/AUM
100 - 76	2.4 – 3.3
75 – 51	3.2 – 4.2
50 – 26	4.1 – 6.0
25 – 0	6.0+

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	
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	Hesperostipa neomixicana	EP	D	D	P	P	P	D	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P	P
Pinyon Ricegrass	Piptochaetium fimbriatum	EP	P	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	D	U
Winterfat	Krascheninnikovia lanata	L/S	D	D	P	P	P	P	P	P	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	D	D	D	D	D	D	D	D	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	
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	D	U
Needleandthread	Hesperostipa comata	EP	U	U	P	P	P	D	D	D	U	U	U	U	U
New Mexico Feathergrass	Hesperostipa neomixicana	EP	U	U	P	P	P	D	D	D	U	U	U	U	U
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	U	U	U	U	U
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P	P
Bigelow Sagebrush	Artemisia bigelovii	L/S	N/S	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	D	P

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
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Winterfat	<i>Krascheninnikovia lanata</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	<i>Atriplex canescens</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Bigelow Sagebrush	<i>Artemisia bigelovii</i>	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Dotted Gayfeather	<i>Liatris punctata</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

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: Chavez, De Baca, Guadalupe, Lincoln, San Miguel, Torrance

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes No

General Legal Description: _____

Relationship to Other Established Classifications:

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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: Chaves, De Baca, Guadalupe, Lincoln, Sna Miguel, Santa Fe, Torrance.

Characteristic Soils Are:

Dean	Ildefonso
Harvey	Willard

Other Soils included are:

Rock Outcrop	Tulargo
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Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	11/25/81	Donald H. Fulton	03/03/82

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	06/19/02	George Chavez	12/17/02