

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC115NM

Site Name: Breaks

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs as the steep side slopes of mesas or canyons. It is usually a relatively continuous, rocky and rough escarpment separating the more gently sloping land surfaces. Slopes range from 30 to 75 percent and average 40 to 50 percent. Aspect of slope varies. North and east slopes have a denser more productive vegetative community than the south and west slopes. Elevations ranges from 5,000 to 7,000 feet above sea level.

Land Form:

1. Break
2. Scarp slope
- 3.

Aspect:

1. North and east
2. South and west
- 3.

	Minimum	Maximum
Elevation (feet)	5,000	7,000
Slope (percent)	30	75
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 the area is ‘semi-arid continental.’”

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are common. Seventy-five percent of the precipitation falls during the frost-free season. Most of the summer moisture falls in the form of high-intensity, short-duration thunderstorms. Winter precipitation is mostly in the form of snowfalls of less than 6 inches.

Temperatures are characterized by moderately warm summer and fairly cool, dry winters. The average annual temperature is 50 degrees F with extremes of –29 degrees F in the winter to 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 for cool season plant growth. This allows the cool season species to occupy an important component of this site. Strong winds blow from the west and southwest, from February through June, and can rapidly dry the soil profile during a critical period for cool season plant growth. Due to the steepness of the slopes on this site, there is a wide variation in the microclimate from north and east slopes to south and west slopes. This causes a significant difference in the vegetation.

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: 12/10/68 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: 01/01/71 To: 12/31/00

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 on this site are shallow to moderately deep. Surface textures vary from cobbly to very stony loams. Permeability is slow to moderate. The available water-holding capacity is low; however, the moisture is concentrated due to the cobble in the profile. Water erosion hazard is moderate to high and wind erosion is slight.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

- | |
|--------------------|
| 1. Cobble loam |
| 2. Stony fine loam |
| 3. Stony silt loam |

Surface Texture Modifier:

- | |
|-----------|
| 1. Cobble |
| 2. Stone |
| 3. |

Subsurface Texture Group: Loamy

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

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

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

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

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Very slow</u>	<u>Moderately slow</u>
Depth (inches):	<u>6</u>	<u>40</u>
Electrical Conductivity (mmhos/cm):	<u>0.00</u>	<u>2.00</u>
Sodium Absorption Ratio:	<u>N/A</u>	<u>N/A</u>
Soil Reaction (1:1 Water):	<u>6.6</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl₂):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>2</u>	<u>2</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

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/shrub site characterized by short, mid- and tall grasses and an abundance of shrubs and half-shrubs, especially on north and east slopes. Forbs occupy a minor component of this site. However, during years of favorable moisture, the forb aspect is quite apparent.

Canopy Cover:

Trees	8 – 12 %
Shrubs and half shrubs	3 – 8 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	10 – 20
Bare ground	15 – 40
Surface cobble and stone	40 – 70
Litter (percent)	5 – 10
Litter (average depth in cm.)	3

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	204	544	884
Forb	24	64	104
Tree/Shrub/Vine	60	160	260
Lichen			
Moss			
Microbiotic Crusts			
Total	300	800	1,300

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	BOCU SCSC	Sideoats Grama Little Bluestem	80 – 200	80 – 200
2	BOGR2 LYPH BOHI2	Blue Grama Wolftail Hairy Grama	56 – 126	56 – 126
3	MUSE MUMO MUPA2 MUWR	Curlyleaf Muhly Mountain Muhly New Mexico Muhly Spike Muhly	80 – 160	80 – 160
4	HENE5 HECO26	New Mexico Feathergrass Needleandthread	40 – 120	40 – 120
5	BOER4	Black Grama	40 – 80	40 – 80
6	ERIN	Plains Lovegrass	40 – 120	40 – 120
7	PIFI PIMI KOMA	Pinyon Ricegrass Littleseed Ricegrass Prairie Junegrass	40 – 80	40 – 80
8	2GRAM	Other Grasses	24 – 40	24 - 40

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ERIOG	Wildbuckwheat	8 – 24	8 – 24
10	CACO17	Indian Paintbrush	8 – 24	8 – 24
11	PENST	Penstemon spp.	8 – 24	8 – 24
12	HYRI	Pingue	8 – 24	8 – 24
13	2FORBS	Other Forbs	8 – 24	8 - 24

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	QUERC	Oak spp.	40 – 80	40 – 80
15	CEMOP	Mountainmahogany	24 – 40	24 – 40
16	PIED JUNIP	Pinyon Juniper	24 – 120	24 – 120
17	RHTR	Skunkbush Sumac	24 – 80	24 – 80
18	MATR3	Algerita	8 – 40	8 – 40
19	ARTEM	Prairie Sagebrush	24 – 40	24 – 40
20	2SD	Other Shrubs	24 – 40	24 - 40

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: cane, silver and big bluestem, green sprangletop, mutton bluegrass, galleta, metcalfe muhly, mat muhly, mesa, sand, and spike dropseed, alkali sacaton, western wheatgrass, Indian ricegrass, bottlebrush, squirreltail, green needlegrass, Arizona fescue, and pine dropseed.

Other shrubs include: littleleaf sumac, sageworts, winterfat, fourwing saltbush, bricklebush, yerba-de-pasmo, cliff fendlerbush, broom snakeweed, cliffrose, and sacahuista.

Other forbs include: locoweed, globemallow, fleabane, happlopapus spp., wooly Indianwheat and mariola.

Plant Growth Curves

Growth Curve ID 4315NM

Growth Curve Name: Historic Climax Plant Community

Growth Curve Description: Mixed warm/cool-season, short, mid and tall grassland with a major shrubs component and minor forb component.

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 habitat which supports a resident animal community characterized by mule deer, desert cottontail, brush mouse, white throated woodrat, Grey fox, pinyon mouse, scrub jay, harlequin quail, roadrunner, Swainson's hawk, golden eagle, alligator lizard and rock rattlesnake. This site has one of the highest potentials for wildlife of the Cp-3 Sites

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
Deama	C
Stroup	C
Travesilla	D

Recreational Uses:

This site has a limited recreation potential due to slope and rockiness. However, hunting and trapping are good. Backpacking and horseback riding are also good. This site is very good for nature observation and photography. The feeling of remoteness associated with these sites enhances the natural beauty of this site.

Wood Products:

This site has a very limited potential for fencing and fuel wood, due to the inaccessibility and steepness.

Other Products:

Grazing:

This site is suited for grazing by all kinds of livestock during all seasons of the year. Class of livestock used is limited somewhat by the steepness of the slope. This site is poorly suited for continuous year long or continuous growing season grazing. As retrogression occurs, plants such as sideoats grama, little bluestem, New Mexico feathergrass, black grama, pinyon, littleseed ricegrass and prairie junegrass, will decrease in composition. As this site place, oak, pinyon, juniper, and algerita will increase. If this site is deteriorated, severe water erosion can take place. This site is well suited to a system of grazing that rotates the season of use. Predator control should be considered when running sheep or goats on this site. This site is not suited to mechanical brush management and seeding, but the use of goats is a good alternative to maintaining a healthy balance of woody and herbaceous plants.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.5 – 5.9
75 – 51	4.5 – 8.0
50 – 26	6.2 – 11.0
25 – 0	11.0+

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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Littleseed Ricegrass	<i>Piptatherum micrantha</i>	EP	U	U	D	D	D	D	D	D	D	D	D	U
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	D	D	D	D	D	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	P	P	P	P	P	P	P	P	P	P	P	P
Curlyleaf Muhly	<i>Muhlenbergia setifolia</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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	P	P	P	P	P	D	D	D	D	D	D	P
Littleseed Ricegrass	<i>Piptatherum micrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Oak	<i>Quercus spp.</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
Mountainmahogany	<i>Cercocarpus montanus</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
Sumac Species	<i>Rhus spp.</i>	L/S	P	P	P	D	D	D	D	D	D	P	P	P
Wildbuckwheat	<i>Eriogonum spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Penstemon	<i>Penstemon spp.</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

Animal Kind: Livestock

Animal Type: Goats

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Littleseed Ricegrass	<i>Piptatherum micrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Oak	<i>Quercus spp.</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
Mountainmahogany	<i>Cercocarpus montanus</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
Sumac	<i>Rhus spp.</i>	L/S	P	P	P	D	D	D	D	D	D	P	P	P
Wildbuckwheat	<i>Eriogonum spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Pinyon Ricegrass	<i>Piptochaetium fimbriatum</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Littleseed ricegrass	<i>Piptatherum micrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Oak	<i>Quercus spp.</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
Mountainmahogany	<i>Cercocarpus montanus</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
Sumac	<i>Rhus spp.</i>	L/S	P	P	P	D	D	D	D	D	D	P	P	P
Wildbuckwheat	<i>Eriogonum spp.</i>	EP	U	U	D	D	D	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: Chavez, De Baca, Guadalupe, Lincoln, San Miguel, Santa Fe, 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:

Deama	Stroup
Travesilla	

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	02/02/82	Donald H. Fulton	03/03/82

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	06/20/02	George Chavez	12/17/02