

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XB114NM

Site Name: Gravelly

Precipitation or Climate Zone: 10 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

The topography of this site ranges from gently to strongly sloping and may occur as low rolling hills and ridges dissected by natural arroyos or in combination with rock outcrop and badlands which are on very steep slopes. Average slopes are less than 15 percent, and aspect is variable. Elevation range from about 6,000 to 7,300 feet above sea level.

Land Form:

1. Hillside
2. Ridge
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	6,000	7,300
Slope (percent)	<15	>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:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

Average annual precipitation varies from about 10 inches to just over 16 inches. Fluctuations ranging from about 5 inches to 25 inches are not uncommon. The overall climate is characterized by cold dry winters in which winter moisture is less than summer. As much as half or more of the annual precipitation can be expected to come during the period of July through September. Thus, fall conditions are often more favorable for good growth of cool-season perennial grasses, shrubs, and forbs than are those of spring.

The average frost-free season is about 120 days and extends from approximately mid-May to early or mid September. Average annual air temperatures are 50 degrees F or lower and summer maximums rarely exceed 100 degrees F. Winter minimums typically approach or go below zero. Monthly mean temperatures exceed 70 degrees F for the period of July and August.

Rainfall patterns generally favor warm-season perennial vegetation, while the temperature regime tends to favor cool-season vegetation. This creates a somewhat complex community of plants on any given range site which is quite susceptible to disturbance and is at or near its productive potential only when both the natural warm/cool-season dominants are present.

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):	102	148
Freeze-free period (days):	119	174
Mean annual precipitation (inches):	10	16+

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.40	.91	12.9	47.0
February	.43	.65	16.6	51.2
March	.47	1.10	20.9	57.1
April	.30	.49	26.1	65.3
May	.46	.98	33.4	74.2
June	.51	.57	41.4	84.2
July	2.15	3.45	50.4	85.1
August	2.28	3.03	48.7	82.4
September	1.29	1.68	41.4	77.9
October	.81	1.12	29.4	69.2
November	.38	.71	19.1	57.3
December	.53	.95	13.1	48.9

Climate Stations:

		Period					
Station ID	<u>290640</u>	Location	<u>Augustine 2E, NM</u>	From:	<u>05/01/26</u>	To:	<u>07/31/00</u>
Station ID	<u>296812</u>	Location	<u>Pietown 19NE, NM</u>	From:	<u>09/01/88</u>	To:	<u>07/31/00</u>
Station ID	<u>297180</u>	Location	<u>Quemado, NM</u>	From:	<u>08/01/15</u>	To:	<u>07/31/00</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 are moderately deep to deep. The surface and underlying layers are either gravelly or very gravelly loams, sandy loams, and fine sandy loams. The soils are well drained and moderately to rapidly permeable. The available water-holding capacity is moderate to low. Erosion is normally none to slight unless natural plant cover is seriously reduced

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Very gravelly loam
2. Very cobbly loam
3. Very stony loam
4. Very stony sandy loam
5. Gravelly loam
6. Very gravelly sandy loam
7. Loam
8. Gravelly fine sandy loam
9. Extremely cobbly sandy clay loam
10. Sandy loam
11. Gravelly sandy loam
12. Cobbly loam
13. Extremely cobbly loam
14. Loamy sand
15. Stony sandy loam
16. Very cobbly sandy loam

Surface Texture Modifier:

1. Gravel
2. Stone
3. Cobble

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): 35 to 60

Surface Fragments >3" (% Cover): >60

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

Subsurface Fragments >=3" (%Volume): >60

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Very slow</u>	<u>Moderately rapid</u>
Depth (inches):	<u>15</u>	<u>>72</u>
Electrical Conductivity (mmhos/cm):	<u>0.00</u>	<u>4.00</u>
Sodium Absorption Ratio:	<u>0.00</u>	<u>5.00</u>
Soil Reaction (1:1 Water):	<u>6.6</u>	<u>9.0</u>
Soil Reaction (0.1M CaCl2):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>3</u>	<u>9</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 supports a mixture of warm/cool-season grasses such as blue grama, sideoats grama, spike muhly, New Mexico feathergrass, western wheatgrass, and bottlebrush squirreltail. Shrubs and half-shrubs include winterfat, small soapweed, Apacheplume, and rabbitbrush. Pinyon pine or juniper may occur but are significant only as visual aspect species when they do. Forbs are a minor component of the potential plant community on this site.

Canopy Cover:

Trees

Shrubs and half shrubs 5 %

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs 22

Bare ground 20

Surface cobble and stone 40

Litter (percent) 15

Litter (average depth in cm.) 2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	315	563	810
Forb	11	19	27
Tree/Shrub/Vine	28	50	72
Lichen			
Moss			
Microbiotic Crusts			
Total	350	625	900

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	BOGR2	Blue Grama	188 – 219	188 – 219
2	BOCU	Sideoats Grama	6 – 31	6 – 31
3	BOHI2	Hairy Grama	6 – 19	6 – 19
4	SCSC	Little Bluestem	31 – 63	31 – 63
5	LYPH MUWR	Wolftail Spike Muhly	31 – 63	31 – 63
6	HENE5 HECO26	New Mexico Feathergrass Needleandthread	31 – 63	31 – 63
7	PASM	Western Wheatgrass	31 – 63	31 – 63
8	ELEL5 ACHY	Bottlebrush Squirreltail Indian Ricegrass	31 – 63	31 – 63
9	SPCR PLJA	Sand Dropseed Galleta	6 – 31	6 – 31
10	MUTO2 ARIST	Ring Muhly Threawn spp.	6 – 31	6 – 31
11	BOER4	Black Grama	31 – 94	31 - 94

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	2FP	Other Perennials	6 – 31	6 – 31
13	2FA	Other Annuals	6 – 13	6 - 13

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	KRLA	Winterfat	6 – 31	6 – 31
15	YUGL	Small Soapweed	6 – 19	6 – 19
16	PIED JUNIP	Pinyon Pine Juniper spp.	0 – 19	0 – 19
17	FAPA LYPA ATCA2 GUSA2	Apacheplume Pale Wolfberry Fourwing Saltbush Broom Snakeweed	6 – 19	6 – 19
18	TECA2 ERNAN5 ARBI3 ARFR4	Spineless Horsebrush Rubber Rabbitbrush Bigelow Sagebrush Fringed Sagewort	6 – 19	6 – 19
19	2SD	Other Shrubs	6 – 19	6 - 19

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 0305NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed warm/cool-season grassland w/ shrub & half-shrub 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 that is characterized by mule deer, bobcat, black-tailed jackrabbit, white-throated woodrat, Merriam's kangaroo rat, Botta's pocket gopher, brush mouse, sparrow hawk, Cassin's kingbird, meadowlark, common raven, chipping sparrow, leopard lizard, plateau whiptail, short-horned lizard, and black-tailed rattlesnake.

Where cliffs and ledges are found associated with the site, golden eagle, great horned owl, prairie falcon, Say's phoebe, white-throated swift, and cliff swallow nest or hunt over the site. Mourning dove and black-chinned sparrow nest on the site. Large rocks or boulders, where found associated with the site, provide habitat for rock squirrels. Where it occurs adjacent to ponderosa pine forests, elk may range in to feed.

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
Alegros	C
Amenson	D
Aridic Ustochrepts	B
Eldado	B
Gatlin	B
Gustspring	B
Guy	B
Ildefonso	B
Lapdum	B
Losmarios	C
Majada	B
Mulligan	B
Millett	B
Pena	B
Salas	C
Sedillo	B
Tesajo	B
Typic Ustorthents	B

Recreational Uses:

This site offers fair to good potential for hiking, horseback riding, nature observation, photography, camping and picnicking. It frequently provides good to excellent pronghorn antelope hunting.

Wood Products:

This site has little significant value for wood products.

Other Products:

Grazing:

This site is suitable for grazing by most kinds and classes of livestock in all seasons of the year, but is poorly suited to continuous yearlong use if potential natural vegetation is to be maintained. Under such use, cool-season grasses, such as New Mexico feathergrass, needleandthread, western wheatgrass, bottlebrush squirreltail, and Indian ricegrass, frequently decline or even disappear. Prolonged heavy use will also cause the decline of such grasses as sideoats grama, spike muhly, and little bluestem, and the site may become characterized by a high density of low-vigor, sod-like blue grama that may make up to 90 percent of the species composition. Advanced deterioration is characterized by increases in ring muhly, threeawn spp., and rabbitbrush. Production in such instances may be cut to one-third or even one-fourth of the potential.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.4 – 4.7
75 – 51	4.5 – 6.9
50 – 26	6.7 – 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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	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
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	D	D	D	U
Winterfat	Krascheninnikovia lanata	EP	D	D	P	P	P	P	P	P	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing Saltbush	Atriplex canescens	EP	P	P	P	P	P	D	D	D	D	D	D	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	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
Winterfat	Krascheninnikovia lanata	EP	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	U
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	D	D	D	D	D	D	P
Bottlebrush Squirreltail	Elymus elymoides	EP	U	U	D	D	D	U	U	U	U	U	U	U
Bigelow Sagebrush	Artemisia bigelovii	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	EP	P	P	P	P	P	D	D	D	D	D	D	P
Most 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

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
Winterfat	<i>Krascheninnikovia lanata</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Indian Ricegrass	<i>Achnatherum hymenoides</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Bottlebrush Squirreltail	<i>Elymus elymoides</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Bigelow Sagebrush	<i>Artemisia bigelovii</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
Fourwing Saltbush	<i>Atriplex canescens</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Most 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

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: Catron, Socorro

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 New Mexico and Arizona Plateaus and Mesas 36 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys : McKinley, Cibola, Socorro, Catron, Sandoval.

Characteristic Soils Are:

Majada	Mulligan
Pena	

Other Soils included are:

Alegros, Amenson, Aridic Ustochrepts, Eldado	Gatlin, Gustspring, Gustspring Rocky, Guy
Ildefonso, Lapdum, Losmarios, Millett, Salas	Sedillo, Tesajo, Typic Ustorthents

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	02/05/80	Durwood E. Ball	03/27/80

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	07/08/02	George Chavez	12/16/02