

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

**Site Type:** Rangeland

**Site ID:** R036XA001NM (WP-1, HV-1, 2)

**Site Name:** Breaks

**Precipitation or Climate Zone:** 9 to 14 inches

**Phase:** \_\_\_\_\_

## **PHYSIOGRAPHIC FEATURES**

### **Narrative:**

This site generally occurs along canyon edges, side slopes, ridges, and benches. It typically consists of a wide diversity in exposures, slopes, and soil textures. Rock outcrops are common along canyon edges. Slopes range from 10 to 55 percent. Elevation ranges from 6,000 to 7,500 feet above sea level. This site is common along the Rio Grande Gorge and its tributaries and on side slopes of basalt-topped mesas.

### **Land Form:**

1. Breaks
2. Scarp slope

### **Aspect:**

1. N/A
- 2.
- 3.

	<b>Minimum</b>	<b>Maximum</b>
<b>Elevation (feet)</b>	6,000	7,500
<b>Slope (percent)</b>	10	55
<b>Water Table Depth (inches)</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Flooding:</b>		
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A
	<b>Minimum</b>	<b>Maximum</b>
<b>Ponding:</b>		
<b>Depth (inches)</b>	N/A	N/A
<b>Frequency</b>	N/A	N/A
<b>Duration</b>	N/A	N/A

### **Runoff Class:**

Medium to high.

## CLIMATIC FEATURES

### **Narrative:**

Mean annual precipitation varies from 9 to 14 inches. Deviations of 4 inches or more are quite common. Approximately 60 percent of the precipitation is received during the native plant growth period, April through September. June is the driest month. During July, August, and September 4 to 5 inches of precipitation influence the presence and production of warm-season plants. Fall and spring moisture is conducive to the growth of cool-season herbaceous plants. Maximum shrub growth also occurs during this time. Summer precipitation is characterized by brief, localized thunderstorms. Winter moisture usually occurs as snow or light rain.

Mean annual temperature varies from 64 degrees F in July to 21 degrees F in January. The maximum is near 100 degrees F. The minimum is near 40 degrees F. The average last killing frost in the spring is around mid-May. The first killing frost in the fall is late September or early October. The frost-free period is approximately 120 to 140 days, but freezing temperatures have been recorded for every month except July and August. Temperatures are generally conducive for herbaceous plant growth from April through September.

Wind velocities are relatively light most of the year with stronger winds occurring in spring and early summer. These stronger winds, which may exceed 25 miles per hour, increase transpiration rates of plants and rapidly dry the soil surface. Also, small soil particles are often displaced by the stronger winds, which can result in structural damage to native plants, particularly young seedlings.

Climate data was obtained from the WCCR web site. Using 50% probabilities for freeze-free and frost-free seasons at 28.5 degrees F and 32.5 degrees F respectively.

	<b>Minimum</b>	<b>Maximum</b>
<b>Frost-free period (days):</b>	104	119
<b>Freeze-free period (days):</b>	134	145
<b>Mean annual precipitation (inches):</b>	9	14

### **Monthly moisture (inches) and temperature (<sup>0</sup>F) distribution:**

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.52	1.79	7.6	45.6
February	.43	1.56	10.7	50.4
March	.67	1.92	16.8	56.8
April	.52	1.26	22.7	66.0
May	.62	1.26	28.8	75.5
June	.49	1.21	35.1	85.8
July	1.54	3.41	42.1	88.9
August	1.86	3.72	41.8	85.8
September	1.08	1.86	34.6	78.8
October	1.01	1.86	25.3	68.6
November	.71	1.60	16.2	56.0
December	.56	1.49	9.3	47.0

**Climate Stations:**

Station ID	Location	From:	Period	To:
292241	Cuba, NM	01/01/14		12/31/01
293422	Gallup FAA-AP, NM	01/01/21		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 range from very shallow to moderately deep. Typically, they are high in coarse fragments throughout the soil profile. Surface textures range from loams to clay loams. Permeability is moderately slow. Runoff is medium to rapid depending on slope, surface coarse fragments, and vegetation. Available water-holding capacity is low to very low.

**Parent Material Kind:** Slope alluvium

**Parent Material Origin:** Limestone-ss-shale

**Surface Texture:**

1. Loam
2. Clay loam
3.

**Surface Texture Modifier:**

1. Gravel
2. Stone
3. Cobble

**Subsurface Texture Group:** Loamy

**Surface Fragments <=3" (% Cover):** 15 to 35

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

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

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

	<b>Minimum</b>	<b>Maximum</b>
<b>Drainage Class:</b>	<u>Well</u>	<u>Well</u>
<b>Permeability Class:</b>	<u>Slow</u>	<u>Moderately slow</u>
<b>Depth (inches):</b>	<u>20</u>	<u>50</u>
<b>Electrical Conductivity (mmhos/cm):</b>	<u>Unknown</u>	<u>Unknown</u>
<b>Sodium Absorption Ratio:</b>	<u>Unknown</u>	<u>Unknown</u>
<b>Soil Reaction (1:1 Water):</b>	<u>Unknown</u>	<u>Unknown</u>
<b>Soil Reaction (0.1M CaCl2):</b>	<u>Unknown</u>	<u>Unknown</u>
<b>Available Water Capacity (inches):</b>	<u>0</u>	<u>6</u>
<b>Calcium Carbonate Equivalent (percent):</b>	<u>Unknown</u>	<u>Unknown</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

The potential plant community on this site is a mixture of grasses, forbs and shrubs. Scrubby oneseed juniper and/or pinyon pine does occur on cooler exposures, but they make up a minor part of the plant community.

\*On south and west exposures, black grama may be the dominant grass species, but on cooler exposures it is a minor component.

\*\*At higher elevations and on northern exposures, these species are abundant components of the herbaceous community.

Canopy Cover:

Trees, shrubs and half-shrubs 25 to 30 %

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs 15

Bare ground 20

Surface gravel 30

Surface cobble and stone 30

Litter (percent) 5

Litter (average depth in cm.) 1

**Plant Community Annual Production (by plant type):** \_\_\_\_\_

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	265	371	477
Forb	50	70	90
Tree/Shrub/Vine	165	231	297
Lichen			
Moss			
Microbiotic Crusts			
Total	500	700	900

**Plant Community Composition and Group Annual Production:** Plant species are grouped by annual production **not** by functional groups.

**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	Black Grama *	35 – 140	35 – 140
2	BOCU	Sideoats Grama	35 – 70	35 – 70
3	HECO26 HENE5 PASM ACHY	Needleandthread New Mexico Feathergrass Western Wheatgrass Indian Ricegrass	35 – 70	35 – 70
4	KOMA POFE	Prairie Junegrass ** Muttongrass	21 – 70	21 – 70
5	PLJA BOGR2 BOHI2	Galleta Blue Grama Hairy Grama	21 – 56	21 – 56
6	SCSC BOBA3	Little Bluestem Cane Bluestem	21 – 35	21 – 35
7	PLTR MUMO MUPA2 MUWR	Pine Dropseed Mountain Muhly New Mexico Muhly Spike Muhly	21 – 35	21 – 35
8	LYPH 2GRAM	Wolftail Other Grasses	21 – 35	21 – 35

**Plant Type - Forb**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	CACO17 ERIOG ERIGE2 ASTER 2FORBS	Indian Paintbrush Wild Buckwheat Fleabane Aster spp. Other Forbs	35 – 105	35 - 105

**Plant Type – Tree/Shrub/Vine**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ARTR2	Mountain Big Sagebrush	35 – 105	35 – 105
11	ATCA2 KRLA2	Fourwing Saltbush Winterfat	21 – 49	21 – 49
12	RHTR RIBES QUERC	Skunkbush Sumac Currant spp. Oak spp.	21 – 49	21 – 49
13	FOPUP FAPA CEMOP	New Mexico Olive Apacheplume Hairy Mountainmahogany	7 – 35	7 - 35
14	PIED JUNIP 2SD	Pinyon Pine Juniper spp. Other Shrubs	7 – 35	7 – 35

**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 species include: bottlebrush squirreltail, plains bristlegrass, dropseed spp., threeawn spp., brome spp., Arizona fescue, letterman needlegrass, phlox, penstemon, locoweed spp., pingue, rabbitbrush, yucca spp., and broom snakeweed.

**Plant Growth Curves**

Growth Curve ID 0001NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed grass, forb and shrubland with a minor pinyon/juniper 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:**

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by bobcat, mountain lion, rock squirrel, rock mouse, least chipmunk, deer mouse, golden eagle, prairie falcon, raven, canyon wren, Say's phoebe, cliff swallow and western diamondback rattlesnake. The rock outcrops and talus slopes provide nesting sites for many species of summer breeding birds.

### **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

### **Recreational Uses:**

This site is well suited to nature observation, hiking, and hunting. The canyon land setting enhances the natural beauty of this site.

### **Wood Products:**

Due to the physiography of this site, this site should not be considered as a major source for wood products.

**Other Products:**

Grazing:

Approximately 75 percent of the vegetation produced on this site are suitable for grazing or browsing by domestic livestock and wildlife. Grazing distribution is a problem due to this site being in association with steep and rocky landscapes. Herding and trail construction may be necessary to achieve proper distribution on these sites when in complex with rock outcrop and other miscellaneous land types.

Deterioration of the potential plant community is indicated by a decrease in such species as western wheatgrass, spike muhly, sideoats grama, fourwing saltbush, and winterfat. Species that increase include blue grama, galleta, hairy grama, threeawns, and undesirable woody species. A planned grazing system with periodic deferment is best to maintain the desirable balance between plant species and to maintain high productivity.

This site is well suited to deer, small mammals, and birds, in addition to domestic livestock.

**Other Information:**

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	6.0 – 9.5
75 – 51	9.0 – 11.9
50 – 26	11.5 – 23.5
25 – 0	23.5+

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
Needleandthread	Hesperostipa comata	EP	P	P	P	P	P	D	D	D	D	D	D	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	P	P	P	P	P	D	D	D	D	D	D	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Muhly	Muhlenbergia pauciflora	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
Mountain Muhly	Muhlenbergia montana	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
Winterfat	Krascheninnikovia lanata	L/S	D	D	P	P	P	P	P	P	D	D	D	D
Some 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:** Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
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
Oak	Quercus spp.	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
Fourwing Saltbush	Atriplex canescens	L/S	P	P	D	D	D	D	D	D	D	D	D	P
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: Santa Fe, Taos

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Township: \_\_\_\_\_

Range: \_\_\_\_\_

Section: \_\_\_\_\_

Is the type locality sensitive?    Yes             No

General Legal Description: \_\_\_\_\_

<b><u>Relationship to Other Established Classifications:</u></b>
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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 & Sandoval.

Characteristic Soils Are:
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Other Soils included are:
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Site Description Approval:

<u>{PRIVATE}Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester		Don Sylvester	

Site Description Revision:

<u>{PRIVATE}Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	08/06/02	George Chavez	08/24/02