

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XB124NM

Site Name: Hills

Precipitation or Climate Zone: 10-16"

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

## PHYSIOGRAPHIC FEATURES

### Narrative:

This site is characterized by rolling to steep hills and mountain footslopes. Slopes average 25 percent or more but range in extremes from 15 percent to 75 percent. Exposure or direction of slope is variable. Rock outcrops, exposed ledges, and occasional boulders are not uncommon. Elevations range from about 6000 to 7800 feet.

### Land Form:

1. Hills

2. Scarp slope

3.

### Aspect:

1. variable

2.

3.

Elevation (feet)	Minimum 6000	Maximum 7800
Slope (percent)	15	75
Water Table Depth (inches)	--	--
Flooding:	Minimum	Maximum
Frequency	--	--
Duration	--	--
Ponding:	Minimum	Maximum
Depth (inches)	--	--
Frequency	-	--
Duration	--	--

### Runoff Class:

Hydrologic unit D

## 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 a given range site which is quite susceptible to disturbance and is at or near its productive potential only when both natural warm- and cool- season dominants are present.

	Minimum	Maximum
Frost-free period (days):	<u>51</u>	<u>171</u>
Freeze-free period (days):	<u>130</u>	<u>252</u>
Mean annual precipitation (inches):	<u>10</u>	<u>16</u>

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

Station ID	Location	From:	Period	To
290640	Augustine2E	05/01/26		07/31/00
296812	Pietown 19NE	09/01/88		07/31/00
297180	Quemado	08/01/15		07/31/00

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:

Soils characterizing this site are typically shallow over acid igneous bedrock, although pockets of deeper soils also occur in saddles, between ledges, and lower side slopes. They may be loams, clay loams, or sandy loams, and are usually stony, gravelly or cobbly. Permeability is moderate to moderately slow, and the available water capacity is low due to shallow depth. Characteristic soils are Chimayo stony loam, Dusty gravelly loam, and Santa Fe very gravelly loam.

Parent Material Kind: Colluvium

Parent Material Origin: Mixed

### Surface Texture:

1. loams, gravelly loams
2. clay loam
3. sandy loams

### Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: --

Surface Fragments <=3" (% Volume): --

Surface Fragments >3" (% Volume): --

Subsurface Fragments <=3" (%Volume): 9-38

Subsurface Fragments >=3" (%Volume): 1-3

	Minimum Well	Maximum Excessively
Drainage Class:	Very slow	Moderately rapid
Permeability Class:	0	72
Depth (inches):	0	4.0
Electrical Conductivity (mmhos/cm):	0	5.0
Sodium Absorption Ratio:	6.1	8.4
Soil Reaction (1:1 Water):	--	--
Soil Reaction (0.1M CaCl2):	1	5
Available Water Capacity (inches):	--	--
Calcium Carbonate Equivalent (percent):	--	--

## 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:

The potential plant community of this site has a mixed shrub-grassland aspect with scattered tree-type junipers and pinyon pines. The shrub and tree component is more visually prevalent on the cooler, north- and east-facing slopes, while low-growing shrubs and grasses prevail on south- and west-facing slopes. Dominant grasses include sideoats grama, blue grama, species of Muhlenbergia, and sometimes black grama (south-facing slopes). Cool-season species, such as New Mexico feathergrass, and needle-and-thread, are most common on north-facing slopes. Green sprangletop, little bluestem, and bullgrass are typical aspect grasses on this site. Shrubs include skunkbush sumac, mountainmahogany and species of oak.

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs	18
Bare ground	18
Surface gravel	20
Surface cobble and stone	25
Litter (percent)	15
Litter (average depth in cm.)	2
Surface Gravel (% cover)	20

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	281	478	675
Forb	11	19	27
Tree/Shrub/Vine	75	128	180
Lichen	--	--	--
Moss	--	--	--
Microbiotic Crusts	--	--	--
Totals	375	638	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	96-128	96-128
2	MUMO SCSC MUEM HENE5 HECO 26	Mountain muhly Little bluestem Bullgrass NM Feathergrass Needle-and-Thread	128-159	128-159
3	BOER4	Black grama	0-32	0-32
4	ELEL5 BLTR FEAR 2 FEOV ARIST	Bottlebrush squirreltail Pine dropseed Arizona fescue Sheep fescue Western wheatgrass	64-96	64-96
5	BOCU	Sideoats grama	32-64	32-64
6	LYPH PLJA MUWR SPCR ARIST	Wolftail Galleta Spike muhly Sand dropseed Threawns spp.	6-32	6-32
7	LEDU KOMA	Green sprangletop Prairie junegrass	6-32	6-32

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	PIED JUNIP	Pinyon Pine Juniper	32-96	32-96
9	CERCO RHTR QUERC CEFE PUTR2 PUME	Mountain mahogany Skunkbush sumac Oakbrush Buckbrush ceanothus Antelope bitterbrush Cliffrose	6-64	6-64
10	FAPA GUSA2 KRLA2	Apache plume Broom snakeweed Winterfat	6-19	6-19

Plant Type – Forb

11	2FP	Perennials	19-32	19-32
12	2FA	Annuals	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   NM 0315  

Growth Curve Name:   HCPC  

Growth Curve Description:   Mixed warm/cool season grassland with shrubs and scattered trees.  

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



#### Recreational Uses:

This site offers good potential for hiking, horseback riding, hunting, nature observation, and photography. It has low to moderate potential for improved picnicking and camping sites, depending upon how steep the topography is. It provides natural beauty typical of the mountain foothills of the area in which it is formed.

#### Wood Products:

This site has a limited potential for wood products that is restricted almost entirely to fence posts and firewood production.

#### Other Products:

This site is well suited for grazing by multiple kinds and classes of livestock. Where slopes are steep, however, accessibility may become limited and stocking rates need to be properly adjusted. Deterioration of the potential plant community due to inadequately managed grazing is most often typified by a decline in such desirable plants as sideoats grama, black grama, cool-season grasses, mountainmahogany, and winterfat. As these plants decline, they are replaced by pinyon, juniper, broom snakeweed, and lesser-value grasses such as threawns and galleta. Because mechanical seeding and brush control are seldom justifiable on this site, the mixed use of both browsing and grazing kinds of livestock may be the best means of maintaining a healthy balance of woody and herbaceous vegetation.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.6 - 4.8
75 - 51	4.5 - 6.5
50 - 26	6.0 - 12.5
25 - 0	12.5 +

Plant Preference by Animal Kind:

	Code	Species Preference	Code
Stems	S	None Selected	N/S
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruit/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

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	D	D	D	D	D	D	D	D	D	D	D	D
Black grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	D	P
Blue grama	<i>Bouteloua gracilis</i>	EP	D	D	D	D	P	P	P	P	P	P	D	D
Green sprangletop	<i>Leptochloa dubia</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
Mountain muhly	<i>Muhlenbergia montanas</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
Bullgrass	<i>Muhlenbergia emersleyi</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
Spike Muhly	<i>Muhlenbergia wrightii</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
NM Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needle-and-thread	<i>Hesperostipa comata</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Bottlebrush squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Pine dropseed	<i>Pascopyrum smithii</i>	EP	D	P	P	P	D	D	D	D	D	D	D	D
Arizona fescue	<i>Festuca arizonica</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
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Mountain mahogany	<i>Cercocarpus montanus</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
Winterfat	<i>Krascheninnikovia lanata</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P

## Supporting Information

### Associated Sites:

<u>Site Name</u>	<u>Site ID</u>	<u>Site Narrative</u>
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### Similar Sites:

<u>Site Name</u>	<u>Site ID</u>	<u>Site Narrative</u>
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### State Correlation:

This site has been correlated with the following states:

### Inventory Data References:

<u>Data Source</u>	<u>Number of Records</u>	<u>Sample Period</u>	<u>State</u>	<u>County</u>
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### Type Locality:

### Relationship to Other Established Classifications:

### Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the New Mexico and Arizona Plateaus & Mesas Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Rio Arriba, McKinley, Catron, Cibola, Socorro and Sandoval.

### Characteristic Soils Are:

Chimayo stony loam	

### Other Soils included are:

Dusty gravelly loam	Santa Fe very gravelly

### Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	2/15/80	Don Sylvester	2/15/80

### Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Brenda Simpson	10/08/02	George Chavez	12/16/02

