

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XB122NM

Site Name: Sandstone Hills

Precipitation or Climate Zone: 10-16"

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

## PHYSIOGRAPHIC FEATURES

### Narrative:

The topography of this site varies from moderately steep to steep and occurs frequently in association with sandstone outcrop or badlands. Slopes generally exceed 15 percent and may, on occasion, range as high as 70 percent. Elevations range from about 6000 to 7800 feet.

### Land Form:

1. Hill

2. Mesa

3. Outcrop

### Aspect:

1. not significant

2.

3.

Elevation (feet)	Minimum 6000	Maximum 7800
Slope (percent)	15	70
Water Table Depth (inches)	--	--
Flooding:	Minimum	Maximum
Frequency	--	--
Duration	--	--
Ponding:	Minimum	Maximum
Depth (inches)	--	--
Frequency	-	--
Duration	--	--

### Runoff Class:

Hydrologic group 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):	51	171
Freeze-free period (days):	130	252
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:

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

INFLUENCING WATER FEATURES

Narrative:
<p>This site is not influenced by water from wetlands or streams.</p>

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:
N/A

## REPRESENTATIVE SOIL FEATURES

### Narrative:

The soils found on this site are generally shallow to very shallow over sandstone. Surface textures are typically sandy loams, fine sandy loams, very fine sandy loams or loams, which often are gravelly, stony, or cobbly. Pockets of deeper soils occur in association with the site as well as occasional to frequent outcroppings of Sandstone and Badlands, either of which may affect livestock movements. Typically, permeability is moderate to moderately rapid, and the available water capacity is low.

Parent Material Kind: Colloquium

Parent Material Origin: Sandstone - unspecified

### Surface Texture:

1. Sandy loams
2. Fine sandy loams
3. loams

### Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: --

Surface Fragments  $\leq 3''$  (% Volume): --

Surface Fragments  $> 3''$  (% Volume): --

Subsurface Fragments  $\leq 3''$  (%Volume): 8-24%

Subsurface Fragments  $\geq 3''$  (%Volume): --

	Minimum	Maximum
Drainage Class:	<u>--</u>	<u>well</u>
Permeability Class:	<u>Moderately slow</u>	<u>Moderately rapid</u>
Depth (inches):	<u>0</u>	<u>20</u>
Electrical Conductivity (mmhos/cm):	<u>0</u>	<u>2.0</u>
Sodium Absorption Ratio:	<u>--</u>	<u>--</u>
Soil Reaction (1:1 Water):	<u>7.4</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl <sub>2</sub> ):	<u>--</u>	<u>--</u>
Available Water Capacity (inches):	<u>--</u>	<u>1</u>
Calcium Carbonate Equivalent (percent):	<u>--</u>	<u>--</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:

This is a moderate producing site characterized by a mixture of short- and mid-grasses, shrubs, and scattered trees. Sideoats grama, blue grama, little bluestem, Indian ricegrass, New Mexico feathergrass, galleta and occasionally black grama are common grasses. Pinyon pine and species of juniper characterize the tree aspect of the site, while such shrubs and half-shrubs as skunkbush sumac, oakbrush, mountainmahogany, and winterfat are common shrub and half-shrub species. Bigelow sagebrush, spineless horsebrush, and broom snakeweed are encountered in small amounts.

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs	14
Bare ground	48
Surface gravel	
Surface cobble and stone	20
Litter (percent)	9
Litter (average depth in cm.)	1
Surface Gravel (% cover)	

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	150	310	469
Forb	15	31	47
Tree/Shrub/Vine	40	83	125
Lichen	--	--	--
Moss	--	--	--
Microbiotic Crusts	--	--	--
Totals	200	413	625

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	Sideoats grama	83-124	83-124
2	BOGR2	Blue grama	41-62	41-62
3	SCSC	Little bluestem	21-41	21-41
4	MUMO BLTR ACHY FEAR2 FEOV	Mountain muhly Pine dropseed Indian ricegrass Arizona fescue Sheep fescue	21-41	21-41
5	HENE5 PASM HECO26 POFE KOMA ELEL5	NM Feathergrass Western wheatgrass Needle-and-Thread Muttongrass Prairie junegrass Bottlebrush squirreltail	41-62	41-62
6	MUWR PLJA	Spike muhly Galleta	4-21	4-21
7	SPCR LYPH BOHI2 ARIST	Sand dropseed Wolftail Hairy grama Threeawn spp.	4-12	4-12
8	BOER4	Black grama	4-21	4-21

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	PIED JUNIP	Pinyon pine Juniper	21-41	21-41
10	RHTR QUERC MUMO	Skunkbush sumac Oak brush Mountain mahogany	4-21	4-21
11	ARBI3 KRLA2	Bigelow sagebrush Winterfat	4-21	4-21
12	GUSA2 TECA2 ERNAN5	Broom snakeweed Spineless horsebrush Rubber rabbitbrush	4-13	4-13

Plant Type – Forb

13	2FP	Perennial forb	12-33	12-33
14	2FA	Annual forb	4-12	4-12

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 0313  

Growth Curve Name:   HCPC  

Growth Curve Description:   WP-2 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	20	25	13	5	0	0

**ECOLOGICAL SITE INTERPRETATIONS**



#### Recreational Uses:

The site has moderate to high potential for semi-improved picnicking and camping sites which are designed with erosion hazard and other problems inherent to shallow soils in mind. It also offers potential for hiking, horseback riding, hunting, nature observation, and photography. On occasion, ancient and gnarled junipers are found which, for many, provide a very striking source of natural beauty. This is especially true when they are seen against a backdrop of distant open-space landscapes typical of the region in which the site is found.

#### Wood Products:

This site has a limited potential for wood products, which is restricted almost entirely to fence post and firewood products.

#### Other Products:

This site is suitable for grazing by most kinds and classes of livestock without regard to season of the year. 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 usually typified by an increase in low-value grasses such as threeawns and hairy grama as well as such woody species as pinyon, juniper, rabbitbrush, oakbrush, and broom snakeweed. Under severe deterioration, erosion hazard becomes quite high, and the site may become severely limited for grazing. Mechanical brush control and seeding are generally impractical on the site due to shallow soils and steep slopes, and recovery using improved grazing management alone, is very slowly achieved.

Other Information:	
Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month	
Similarity Index	Ac/AUM
100 - 76	4.5 - 5.5
75 - 51	5.2 - 8.0
50 - 26	7.5 - 15.0
25 - 0	15.0 +

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
Blue grama	<i>Bouteloua gracilis</i>	EP	D	D	D	D	P	P	P	P	P	P	D	D
Little bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	P	P	P	P	P	P	D	D	D	D
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
Indian ricegrass	<i>Achnatherum hymenoides</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush squirreltail	<i>Elymus elymoides</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Western wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Mountain muhly	<i>Muhlenbergia montana</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:

<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: McKinley, Catron, Cibola, Socorro and Sandoval.

### Characteristic Soils Are:


### Other Soils included are:


### Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	02/15/80	Don Sylvester	02/15/80

### Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Brenda Simpson	08/20/02	George Chavez	12/16/02

