

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R042XA058NM

Site Name: Hills

Precipitation or Climate Zone: 8-10 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs as rolling to steep desert hills, foot slopes of steep mountains, and side slopes of high mesas. Exposures and soils are variable. Slopes range from 15 to 65 percent. Elevations range from 4,400 to 6,000 feet above sea level.

Land Form:

1. Hillside

2. Scarp slope

3.

Aspect:

1. Not significant.

2.

3.

	Minimum	Maximum
Elevation (feet)	4,400	6,000
Slope (percent)	15	65
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:

N/A

CLIMATIC FEATURES

Narrative:

This site has an arid climate with distinct seasonal temperature variations and large annual and diurnal temperature changes characteristic of a continental climate.

Precipitation averages 8 to 10 inches annually. Deviations of 4 inches or more from the average are quite common. Fifty percent of the moisture is received from July to November, which is the dominant growing season of native plants. Summer moisture is characterized by high intensity, short duration rainstorms. Winter precipitation averages less than one-half inch per month, usually in the form of rain. There are occasional snowstorms of short duration.

Temperatures vary from a mean monthly average of 77F in July to 34F in January, with the maximum being 104F and the minimum 10F below zero. The average last killing frost in the spring is April 15 and the average first killing frost in the fall is October 28. Frost-free season is an average of 185 days. Temperatures are conducive for native grass and forbs growth from March through November.

Spring winds of 15 to 40 miles per hour are common from February to June. These winds increase transpiration rates of native plants and rapidly dry the surface soil. Small soil particles are often displaced by the wind near the soil surface. This results in structural damage to native plants, especially young seedlings.

	Minimum	Maximum
Frost-free period (days):	140	165
Freeze-free period (days):	190	213
Mean annual precipitation (inches):	8.00	10.00

Monthly moisture (inches) and temperature (⁰F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.31	0.44	34.1	36.2
February	0.31	0.46	39.3	42.0
March	0.25	0.54	46.3	48.8
April	0.33	0.52	53.3	56.5
May	0.34	0.50	62.5	64.5
June	0.46	0.70	70.6	74.3
July	1.18	2.35	75.3	78.5
August	1.64	2.47	73.0	75.9
September	1.00	1.56	66.5	68.6
October	0.89	1.25	55.5	57.4
November	0.36	0.54	43.7	45.4
December	0.44	0.57	35.1	37.2

Climate Stations:					
Station ID	NM0915	Location	Bernardo	From:	Period 1962 To 1990
	_____		_____		: _____
Station ID	NM0983	Location	Bingham	From:	Period 1961 To 1990
	_____		_____		: _____
Station ID	NM0234	Location	Albuquerque	From:	Period 1961 To 1990
	_____		_____		: _____
Station ID	NM5150	Location	Los Lunas	From:	Period 1961 To 1990
	_____		_____		: _____
					Period

INFLUENCING WATER FEATURES

Narrative:
This site is not influenced by water from 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 shallow to moderately deep. They are derived from sandstone, basalt, rhyolite, granite, and other parent materials other than limestone. Surface textures range from sandy loams to clayey loams and are generally high in amount of coarse fragments. They may be calcareous throughout the profile, especially on basalt derived soils. They are well drained, slowly to moderately permeable, and runoff is moderate to rapid.

Parent Material Kind: Slope alluvium

Parent Material Origin: Colluvium

Surface Texture:

1. Sandy loams to clayey loams
2.
3.

Surface Texture Modifier:

1. N/A
2. N/A
3. N/A

Subsurface Texture Group: CN-L, CN-SIL, WB, UWB

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

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

Subsurface Fragments <=3" (%Volume): 74

Subsurface Fragments >=3" (%Volume): 14

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Moderately slow</u>	<u>Moderately slow</u>
Depth (inches):	<u>20</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>7.9</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl2):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>3</u>	<u>3</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Future development.

Plant Communities and Transitional Pathways (diagram)

Future development.

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 Narrative Label: HCPC

Plant Community Narrative:

The aspect of this site is variable depending on edaphic and physiographic features. Generally the site is a mixed grassland –shrub complex with scattered trees, especially on north and east exposures.

Total annual herbage production (Air-dry):

Average of favorable years: 900 pounds per acre

Average of unfavorable years: 350 pounds per acre

Canopy Cover

Trees	<u>12</u>
Shrubs and half shrubs	<u>12</u>

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs	<u>24</u>
Bare ground	<u>32</u>
Surface gravel	<u>25</u>
Surface cobble and stone	<u>11</u>
Litter (percent)	<u>8</u>
Litter (average depth in cm.)	<u>1</u>

Plant Community Annual Production (by plant type):

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	266	475	684
Forb	32	56	81
Tree/Shrub/Vine	53	94	135
Lichen			
Moss			
Microbiotic Crusts			
Totals	351	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	BOER4	Black grama	125-188	125-188
2	BOCU	Sideoats grama	31-94	31-94
3	BOGR2	Blue grama	31-94	31-94
	BOHI2	Hairy grama		
	PLJA	Galleta		
4	MUPO2	Bush muhly	19-44	19-44
	MUPA2	New Mexico muhly		
5	HENE5	New Mexico feathergrass	6-31	6-31
	HECO26	Needle&Thread		
	ELEL5	Bottlebrush squirreltail		
	2GRM	OTHER Grasses	19-50	19-50

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
6	RHTR	Skunkbush sumac	19-31	19-31
	RHMI3	Littleleaf sumac		
	FAPA	Apacheplume		
7	NOMI	Sacahuista	19-31	19-31
	YUCCA	Yucca spp.		
	QUTU2	Shrub liveoak		
8	ATCA2	Fourwing saltbush	6-31	6-31
	ATCO	Shadscale		
	KRLA2	Winterfat		
9	JUMO	Oneseed Juniper	0-19	0-19
	PIED	Pinyon pine		
10	2SHRUB	Other Shrubs	6-31	6-31

Plant Type – Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	SPHAR	Globemallow	19-63	19-63
	ERIOG	Wild buckwheat		
	CCO17	Indian paintbrush		
	OEBI	Evening primrose		
	GILIA	Gilia		
	LESQU	Bladderpod		
	MELE2	Plains blackfoot daisy		
	2FORB	OTHER Forbs		

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 would include: Indian ricegrass, Wolftail, Burrograss, Sand dropseed, Spike dropseed, Threawn spp., Prairie junegrass, Plains lovegrass

Other woody plants include: Mariola, Dalea spp., Cactus spp., Mountain mahogany, Algerita

Other forbs include: Locoweed, Russian thistle, Woolly Indianwheat

Plant Growth Curves

Growth Curve ID NM-

Growth Curve Name: HCPC

Growth Curve Description: SD-1 Hills HCPC Warm Season Plant Community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		3	5	10	10	25	30	12	5		

Plant Growth Curves

Growth Curve ID NM-

Growth Curve Name: HCPC

Growth Curve Description: SD-1 Hills HCPC Cool Season Plant Community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		15	20	20	2	5	10	15	13		

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

This ecological site provides habitats which support a resident animal community that is characterized by mule deer, coyote, porcupine, rock squirrel, white-throated woodrat, desert cottontail, scaled quail, house finch, raven, woodhouse toad, and garter snake.

In addition to domestic livestock, deer, small mammals, and birds also use this site.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Orthids-Rock outcrop	

Recreational Uses:

This site is suited to hunting, hiking, horseback riding, and nature observation. Unusual rock formations may exist and may be of some interest. The natural beauty is enhanced by the variation in soil colors.

Wood Products:

Wood products, including fuel wood, fence posts, and landscape trees are produced on areas within this site. These are not however produced in significant amounts.

Other Products:

Approximately 85 percent of the vegetative production in this site is suitable as forage for domestic livestock and wildlife. Grazing distribution may be a problem; more level areas within the site receive more grazing pressure than the steeper areas. Construction of livestock waterings, saltings, cross fencing, and trails may improve livestock distribution.

Inadequate management of the site leads to repetitive grazing of the most desirable species, and reduces the vigor and productivity of these plants. The result is a deterioration in the potential plant community indicated by a decrease in production and/or a change in composition. Plants that decrease include black grama, sideoats grama, and blue grama, bush and New Mexico muhly, cool season grasses, fourwing saltbush, and winterfat. Plants that increase include galleta, hairy grama, wolftail, threeawn spp., dropseeds, fluffgrass, burrograss, and undesirable woody species. A planned grazing system with periodic deferment is best to maintain the desirable balance between plant species and to maintain the natural productivity and plant vigor.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	5.2 – 3.9
75 – 51	7.8 – 5.0
50 – 26	15.6 – 7.5
25 – 0	15.6 ++

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
Black grama	<i>Bouteloua erioda</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sideoats grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue grama	<i>Bouteloua gracilis</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bush muhly	<i>Muhlenbergia</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico muhly	<i>Muhlenbergia pauciflora</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Needle&thread	<i>Hesperostipa comata</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico featherglass	<i>Hesperostipa neomexicana</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush squirreltail	<i>Elymus elymoides</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing saltbush	<i>Atriplex canescens</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Shadscale	<i>Atriplex confertifolia</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Winterfat	<i>Krascheninnikovia lanata</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Some forbs	AAFF, PPFF	EP	P	P	P	P	P	P	P	P	P	P	P	P
Galleta	<i>Pleuraphis jamesii</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Hairy grama	<i>Bouteloua hirsuta</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Dropseeds spp.	<i>Sporobolus</i> spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Threeawns spp.	<i>Aristida</i> spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Wolftail	<i>Lycurus phleoides</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Yucca	<i>Yucca</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Some forbs	AAFF, PPFF	EP	D	D	D	D	D	D	D	D	D	D	D	D
Burrograss	<i>Scleropogon brevifolius</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Fluffgrass	<i>Dasyochloa pulchella</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Mariola	<i>Parthenium incanum</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Sumac	<i>Rhus</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Oneseed juniper	<i>Juniperus monosperma</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Pinyon	<i>Pinus edulis</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U
Apacheplume	<i>Fallugia paradoxa</i>	EP	U	U	U	U	U	U	U	U	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

Inventory Data References (narrative):

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Inventory Data References:

Data Source	# of Records	Sample Period	State	County

State Correlation:

This site has been correlated with the following sites: _____

Type Locality:

General Legal Description:

State:	Latitude:	Longitude:
County:	Section:	Township: Range:

Narrative Location Description:

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Is the type locality sensitive?

Yes

No

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 Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Valencia, and Bernalillo.

Characteristic Soils Are:

Orthids-Rock outcrop complex	
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Other Soils included are:

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Site Description Approval:

{PRIVATE}Author	Date	Approval	Date
Don Sylvester	07/12/1979	Don Sylvester	07/12/1979

Site Description Revision:

{PRIVATE}Author	Date	Approval	Date
Santiago Misquez	04/12/02	George Chavez	03/04/03