

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

**ECOLOGICAL SITE DESCRIPTION**

**ECOLOGICAL SITE CHARACTERISTICS**

Site Type: Rangeland

Site ID: R042XA054NM

Site Name: Deep Sand

Precipitation or Climate Zone: 8-10 inches

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

**PHYSIOGRAPHIC FEATURES**

**Narrative:**

This upland site has relatively moderate slopes of 1 to 15 percent. The topography is often undulating; sand dunes are common. This site occurs on mesas and fans in the vicinity of major streams such as the Rio Puerco and Rio Grande. Elevations are from 4,500 to 5,800 feet.

**Land Form:**

- 1. Alluvial fan
- 2. Dune
- 3.

**Aspect:**

- 1. Not significant.
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4500	5,800
Slope (percent)	1	15
Water Table Depth (inches)	35	>72
	Minimum	Maximum
Flooding:		
Frequency	Very brief	Brief
Duration	Rare	Occasional
	Minimum	Maximum
Ponding:		
Depth (inches)	N/A	
Frequency	N/A	
Duration	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):	<u>140</u>	<u>165</u>
Freeze-free period (days):	<u>190</u>	<u>213</u>
Mean annual precipitation (inches):	<u>8.00</u>	<u>10.00</u>

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

These wind deposited soils are deep and well drained with loamy sand, loamy fine sand and fine sand surface layers. The subsoils are sandy clay loam, fine sandy loam and sandy loam except Bluepoint, which has no subsoil but has a loamy sand substratum. Permeability is moderate (0.63 to 2.0 inches per hour) to moderately rapid (2.0 to 5.0 inches per hour) and very rapid (10 inches per hour). Moisture holding capacity is 0.11 to 0.16 inches per inch except for Bluepoint, which is 0.07 to 0.09 inches per inch. Reaction 7.9 to 8.4 except in the calcareous subsoils where it may go as high as 9.0.

Parent Material Kind: Alluvium

Parent Material Origin: Sandstone - Unspecified

### Surface Texture:

1. Loamy sand, loamy fine sand, fine sand

2.

### Surface Texture Modifier:

1.

2.

Subsurface Texture Group: Sandy clay loam, fine sandy loam, sandy loam ??? from old range site

Surface Fragments  $\leq 3''$  (% Cover): No data

Surface Fragments  $> 3''$  (% Cover): No data

Subsurface Fragments  $\leq 3''$  (% Volume): 6 – 68%

Subsurface Fragments  $\geq 3''$  (% Volume): 4%

Drainage Class:	Minimum Poorly	Maximum Somewhat excessively
Permeability Class:	<u>Moderately slow</u>	<u>Rapid</u>
Depth (inches):	<u>&gt;72</u>	<u>&gt;72</u>
Electrical Conductivity (mmhos/cm):	<u>0</u>	<u>16.00</u>
Sodium Absorption Ratio:	<u>0</u>	<u>5.00</u>
Soil Reaction (1:1 Water):	<u>7.4</u>	<u>9.0</u>
Soil Reaction (0.1M CaCl <sub>2</sub> ):	<u>No data</u>	
Available Water Capacity (inches):	<u>3</u>	<u>5</u>
Calcium Carbonate Equivalent (percent):	<u>No data</u>	

**PLANT COMMUNITIES**

Ecological Dynamics of the Site:  
No data.

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 aspect and biomass of vegetation on this site is dominantly grassland with an appreciable amount of shrubs. The grasslands consist of a mixture of short- mid- and tall grasses. Annual grasses and forbs occur in relatively large amounts in years of above average growing conditions. When the plant community deteriorates, there is a marked increase of woody and succulent plants. Mesquite and juniper may invade the site. In severe deterioration of the vegetation, there will be active soil erosion resulting in denuded sand dunes.

The potential plant community produces approximately 900 pounds per acre (air-dry) during years of favorable growing conditions and about 300 pounds during unfavorable years. The total average annual production is approximately 500 pounds.

Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	<u>15</u>
Trees and shrubs – canopy	<u>10</u>
Bare ground	<u>70</u>
Surface cobble and stone	<u>0</u>
Litter (percent)	<u>0</u>
Litter (average depth in cm.)	<u>0</u>

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	180	360	540
Forb	45	90	135
Tree/Shrub/Vine	75	150	225
Lichen			
Moss			
Microbiotic Crusts			
Totals	300	600	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	90-120	90-120
2	MUPO2	Bush muhly	72-90	72-90
3	PLJA	Galleta	30-48	30-48
4	SPCR	Sand dropseed	60-90	60-90
	SPFL2	Mesa dropseed		
5	SPCO4	Spike dropseed	18-30	18-30
6	ACHY	Indian ricegrass	120-150	120-150
7	SCSC	Little bluestem	60-90	60-90
	BOCU	Sideoats grama		
8	SPGI	Giant dropseed	60-90	60-90
	ANHA	Sand bluestem		
9	MUPU2	Sandhill muhly	18-30	18-30
10	HENE5	New Mexico feathergrass	30-60	30-60
	HECO26	Needle and thread		
	2GRM	Other Grasses: No values given in Range Site Description		

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	YUCCA	Yucca	12-30	12-30
12	OPPO	Pricklypear cacti	12-30	12-30
13	OPIM	Cholla cactus	6-30	6-30
14	ARFI2	Sand sagebrush	30-60	30-60
15	EPVI	Mormon tea	6-18	6-18
16	ATCA	Fourwing saltbush	12-30	12-30
17	PSSC6	Broom dalea	6-18	6-18
	MESP3	Bush mint		
18	GUSA2	Broom snakeweed	12-30	12-30
19	ERNAN5	Rubber rabbitbrush	12-30	12-30
	BASA2	Broom baccharis		
	2SHRUB	Other shrubs - No values given in Range Site Decription		

Plant Type – Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
20	ERIOG	Buckwheat	12-30	12-30
21	SAKA	Tumbleweed	18-30	18-30
	AMSIN	Fiddleneck		
	KOSC	Kochia		
22	ERIGE2	Fleabane	18-30	18-30
	SEAR8	Desert senna		
	VEPO4	Verbena		
	2FORB	Other Forbs- No values given in Range Site Decription		

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: Sixweeks grama, Sand muhly, Blue grama, Foxtail barley, Bottlebrush squirreltail, Tumblegrass, Threeawn spp.

Other woody plants include: No others identified in Range site decription.

Other forbs include: Tansymustard, Stickleaf, Globemallow, Silverleaf nightshade, Locoweed, Wooly groundsel, Indian paintbrush

Plant Growth Curves

Growth Curve ID   NM-2231

Growth Curve Name:   HCPC

Growth Curve Description:   SD-1 Deep Sand 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-2232

Growth Curve Name:   HCPC

Growth Curve Description:   SD-1 HCPC Deep Sand 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 site provides habitats which support a resident animal community that is characterized by badger, desert cottontail, spotted ground squirrel, Botta's pocket gopher, Ord's kangaroo rat, plains pocket mouse, burrowing owl, scaled quail, mourning dove, loggerhead shrike, lesser earless lizard, and New Mexico whiptail.

When woody vegetation or cattails are present, these sites are breeding areas for mockingbird, mourning dove, and roadrunner.

### Hydrology Functions:

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

Soils are in hydrologic group B, with the following exceptions.

#### Hydrologic Interpretations

Soil Series	Hydrologic Group
Bluepoint loamy fine sand	A
Bluepoint loamy sand	A
Bluepoint fine sand	A

### Recreational Uses:

This site has limited potential for recreational use.

### Wood Products:

This site has no potential for wood products.

### Other Products:

This site is only fairly suited for year long grazing use by cattle, sheep, horses, burros, antelope and deer, due to the fragile nature of the plant community and potential for severe soil erosion.

### Other Information:

#### Guide to Suggested Initial Stocking Rate Acres per Animal Unit Year

Similarity Index	Ac/AUY
100 - 76	64 - 100
75 - 51	100 - 214
50 - 26	160 - 320
25 - 0	214 - 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
Black grama	Bouteloua eriopoda	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bush muhly	Muhlenbergia	EP	P	P	P	P	P	P	P	P	P	P	P	P
Indian ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Little bluestem	Schizachyrium scoparium	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sideoats grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sand bluestem	Andropogon halli	EP	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing saltbush	Atriplex canescens	EP	P	P	P	P	P	P	P	P	P	P	P	P
Broom dalea	Psoralea scoparius	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sand dropseed	Sporobolus cryptandrus	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike dropseed	Sporobolus contractus	EP	D	D	D	D	D	D	D	D	D	D	D	D
Mesa dropseed	Sporobolus flexuosus	EP	D	D	D	D	D	D	D	D	D	D	D	D
Giant dropseed	Sporobolus giganteus	EP	D	D	D	D	D	D	D	D	D	D	D	D
Galleta	Pleuraphis jamesii	EP	D	D	D	D	D	D	D	D	D	D	D	D
New Mexico feathergrass	Hesperostipa neomexicana	EP	D	D	D	D	D	D	D	D	D	D	D	D
Needle&Thread	Hesperostipa comata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Yucca	Yucca spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Sand sagebrush	Artemisia filifolia	EP	U	U	U	U	U	U	U	U	U	U	U	U
Mormon tea	Ephedra viridis	EP	U	U	U	U	U	U	U	U	U	U	U	U
Foxtail barley	Hordeum jubatum	EP	U	U	U	U	U	U	U	U	U	U	U	U
Tumblegrass	Schedonnardus paniculatus	EP	U	U	U	U	U	U	U	U	U	U	U	U
Threeawns spp.	Aristida spp.	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:

Is the type locality sensitive?      Yes       No

Relationship to Other Established Classifications:

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Other References:

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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, Socorro and Bernalillo.

Characteristic Soils Are:

Bluepoint loamy sand	Wink loamy fine sand	Vinton loamy sand
Pajarito loamy fine sand	Bluepoint loamy fine sand	Wink loamy sand
Madurez loamy fine sand	Bluepoint loamy fine sand, hummocky	Gila loamy sand
Madurez loamy sand	Bluepoint fine sand	Gila loamy fine sand

Other Soils included are:

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Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	07/12/1979	Don Sylvester	07/12/1979

Site Description Revision:

Author	Date	Approval	Date
Santiago Misquez	04/12/02	George Chavez	02/14/03

