

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC123NM

Site Name: Deep Sand Savannah

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs as coarse-textured eolian and alluvial sediments on upland plains. Slopes are nearly level to gently undulating, generally less than 5 percent. Low stabilized hummocks or dunes may occur. Exposure varies but is not significant. Elevations range from 4,500 to 7,200 feet above sea level.

Land Form:

1. Plain
2. Sand sheet
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	4,500	7,200
Slope (percent)	0	<5
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:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is “semi-arid continental.”

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are common. Seventy-five percent of the precipitation falls from April to October. Most of the summer precipitation falls in the form of high-intensity, short-duration thunderstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is about 50 degrees F with extremes of –29 degrees F in the winter and 103 degrees F in the summer.

The average frost-free season is 130 to 160 days. The last killing frost falls in early May and the first killing frost in early October.

Both temperature and precipitation favor warm-season, perennial plant species. However, about 40 percent of the precipitation falls at a time favorable for cool-season plant growth. This allows the cool-season species to occupy an important component in this site. Because of the coarse texture of the soil, the plant community can respond rapidly to any precipitation during the frost-free season. Strong winds blow from February to June, drying the soil during a critical stage for plant growth and causing the soil to blow, which can damage plants.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	<u>131</u>	<u>173</u>
Freeze-free period (days):	<u>155</u>	<u>187</u>
Mean annual precipitation (inches):	<u>13</u>	<u>16</u>

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.34	.92	15.6	42.1
February	.34	.81	19.9	52.9
March	.23	.98	24.4	59.7
April	.39	.96	31.4	68.9
May	.85	1.61	39.2	77.7
June	.89	1.62	46.9	87.1
July	1.77	2.75	53.1	88.5
August	2.46	3.22	51.9	85.7
September	1.54	2.26	44.3	80.4
October	1.00	1.51	32.8	70.5
November	.57	1.02	22.2	57.5
December	.34	1.16	15.9	49.3

Climate Stations:

Station ID	Location	Period
291918	Clines Corners 7SE, NM	From: 12/10/68 To: 11/30/00
292096	Corona 11SSW, NM	From: 12/01/77 To: 09/30/92
293060	Estancia, NM	From: 01/01/14 To: 12/31/00
293649	Gran Quivira Natl. Monument, NM	From: 06/01/38 To: 12/31/00
295965	Mountainair, NM	From: 03/01/14 To: 12/31/00
299405	Vaughn, NM	From: 01/01/71 To: 12/31/00

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 on this site are deep and excessively drained. The surface textures are of loamy fine sand or fine sandy loam that extend to a depth of 60 inches or more. The soils are rapidly permeable and have a low water-holding capacity. Surface runoff is very slow. Drying of the surface is fast and soil-blowing hazard is high.

Parent Material Kind: Alluvium

Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Loamy fine sand
2. Sandy fine loam
3. Loamy sand

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Loamy

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

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

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

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

	Minimum	Maximum
Drainage Class:	Well	Excessively
Permeability Class:	Moderately slow	Rapid
Depth (inches):	>72	>72
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.1	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	3	6
Calcium Carbonate Equivalent (percent):	N/A	N/A

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

This site has an open stand of pinyon and/or juniper with grass understory. Both warm/cool-season mid and tall grasses characterize the understory grasses with scattered shrubs throughout the site. Half-shrubs and forbs are a minor part of the plant community. The open stand of pinyon and juniper at one time may have been maintained by natural fire. The overstory tree canopy ranges from 10 to 25 percent.

Canopy Cover:

Trees	10 – 25 %
Shrubs and half shrubs	2 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 40
Bare ground	50 – 60
Surface cobble and stone	0 – 5
Litter (percent)	5 – 10
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	225	788	1,350
Forb	24	84	144
Tree/Shrub/Vine	69	242	414
Lichen			
Moss			
Microbiotic Crusts			
Total	300	1,050	1,800

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	ANGE ANHA	Big Bluestem Sand Bluestem	105 – 158	105 – 158
2	BABO3 SCSC	Cane Bluestem Little Bluestem	105 – 158	105 – 158
3	SONUE CALO	Indiangrass Prairie Sandreed	53 – 105	53 – 105
4	BOCU	Sideoats Grama	53 – 105	53 – 105
5	BOGR2 PLJA	Blue Grama Galleta	105 – 158	105 – 158
6	BOER4	Black Grama	53 – 105	53 – 105
7	SPCR SPCO4 SPGI	Sand Dropseed Spike Dropseed Giant Dropseed	105 – 158	105 – 158
8	HENE5 HECO26	New Mexico Feathergrass Needleandthread	32 – 53	32 – 53
9	ACHY	Indian Ricegrass	32 – 53	32 – 53
10	2GRAM	Other Grasses	53 – 105	53 - 105

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	ERIOG	Wildbuckwheat	0 – 53	0 – 53
12	HEAN	Sunflower	0 – 53	0 – 53
13	CRPOP	Leatherweed Croton	0 – 53	0 – 53
14	2FORBS	Other Forbs	0 – 53	0 - 53

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	PIED JUNIP	Pinyon Juniper	105 – 263	105 – 263
16	ARFI2 ARBI3	Sand Sagebrush Bigelow Sagebrush	53 – 105	53 – 105
17	RHTR	Skunkbush Sumac	53 – 105	53 – 105
18	QUERC	Oak spp.	32 – 53	32 – 53
19	2SD	Other Shrubs	32 – 53	32 - 53

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 include: switchgrass, mesa dropseed, alkali sacaton, threeawns, sandhill muhly, purple lovegrass, ring muhly, bottlebrush squirreltail, western wheatgrass, plains bristlegrass, green sprangletop, littleseed ricegrass, and prairie junegrass. Other woody plants include: feather dalea, cholla spp., ephedra spp., winterfat, rubber rabbitbrush, broom snakeweed, fourwing saltbush, yucca, and algerita. Other forbs include: tansymustard, locoweed, redstem milkvetch, scarlet globemallow, mariola, sand verbena, goldenrod, and threadleaf groundsel.

Plant Growth Curves

Growth Curve ID 4323NM

Growth Curve Name: HCPC

Growth Curve Description: Open stand of pinyon/juniper w/mixed warm/cool-season mid and tall grass understory w/scattered shrubs.

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

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat which supports a resident animal community that is characterized by mule deer, bobcat, coyote, blacktailed jackrabbit, desert cottontail, Stephen's woodrat, rock squirrel, pinyon mouse, scrub jay, blacktailed rattlesnake, and red spotted toad. The woody vegetation provides nesting opportunities for many bird species.

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
Flugle	B
Mespun	A
Otero	B
Palma	B
Trail	A

Recreational Uses:

This site offers fair to good potential for hiking, horseback riding, nature observation, photography, camping and picnicking. Hunting for mule deer is fair and trapping for fur-bearing animals is good.

Wood Products:

This site has a potential for wood products that are limited to fuelwood and fencing material. Although this is a limited potential, it may well be very economical. If this site has deteriorated, as much as six to ten cords of fuelwood per acre may be harvested. Harvesting should be selective and done by hand cutting. Tree spacing should be at a D+15 spacing.

Other Products:

Grazing:

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the site's potential to produce woody plants, it is very suited to browsing animals. Continuous grazing of this site during the growing season will cause the high producing desirable forage plants such as, big bluestem, little bluestem, Indiangrass, sideoats grama, black grama, and New Mexico feathergrass to decrease. As this occurs, there will be a corresponding increase in the dropseeds, threeawns, ring muhly, blue grama, pinyon and juniper. As the condition of this site deteriorates, a sharp increase of juniper will occur. As the tree canopy increases, the understory vegetation decreases rapidly. The increase in numbers of trees can be attributed in part to the control of fire. Brush management is needed to restore understory production once the canopy reaches 25 percent. Due to the sandy nature of the soil, mechanical control is not feasible on this site. A system of grazing that varies the season of use is most beneficial to maintaining or improving the plant community.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.2 – 4.4
75 – 51	4.0 – 6.5
50 – 26	6.0 – 10.0
25 – 0	10.0+

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
Big Bluestem	Andropogon gerardii	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
Sand Bluestem	Andropogon hallii	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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Indiangrass	Sorghastrum nutans	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
Prairie Sandreed	Calamovilfa longifolia	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
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sunflower	Helianthus annuus	EP	U	U	U	U	U	D	D	D	U	U	U	U

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	D	D	D	D	D	D	P
Bigelow Sagebrush	Artemisia bigelovii	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
Skunkbush Sumac	Rhus trilobata	L/S	P	P	P	D	D	D	D	D	D	P	P	P
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
Wildbuckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sunflower	Helianthus annuus	EP	U	U	U	U	U	D	D	D	U	U	U	U

Animal Kind: Livestock

Animal Type: Goats

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	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Indian Ricegrass	<i>Achnatherum hymenoides</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Sand Sagebrush	<i>Artemisia filifolia</i>	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
Bigelow Sagebrush	<i>Artemisia bigelovii</i>	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
Skunkbush Sumac	<i>Rhus trilobata</i>	L/S	P	P	P	D	D	D	D	D	D	P	P	P
Wildbuckwheat	<i>Eriogonum spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sunflower	<i>Helianthus annuus</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U
Oak	<i>Quercus spp.</i>	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

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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Indian Ricegrass	<i>Achnatherum hymenoides</i>	EP	U	U	P	P	P	U	U	U	D	D	D	U
Sand Sagebrush	<i>Artemisia filifolia</i>	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
Bigelow Sagebrush	<i>Artemisia bigelovii</i>	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
Skunkbush Sumac	<i>Rhus trilobata</i>	L/S	P	P	P	D	D	D	D	D	D	P	P	P
Wildbuckwheat	<i>Eriogonum spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sunflower	<i>Helianthus annuus</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U
Oak	<i>Quercus spp.</i>	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

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: Lincoln, Socorro, Torrance

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes No

General Legal Description: _____

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 Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Chaves, De Baca, Guadalupe, Lincoln, Sna Miguel, Santa Fe, Torrance.

Characteristic Soils Are:

Flugle	Mespun
Otero	Palma
Trail	

Other Soils included are:

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Site Description Approval:

Author

Don Sylvester

Date

02/02/82

Approval

Donald H. Fulton

Date

03/03/82

Site Description Revision:

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Elizabeth Wright

Date

07/05/02

Approval

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Date

12/17/02