

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB055NM

Site Name: Sandy Plains

Precipitation or Climate Zone: 13 to 16 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to gently undulating sloping eolian and alluvial sediments on the uplands. Elevation ranges from 3,500 to 4,800 feet above sea level. Slopes range from 0 to 5 percent. Exposure varies and is not significant.

Land Form:

1. Plains
2. Sheet sand
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	3,500	4,800
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A
	Minimum	Maximum
Flooding:		
Frequency	Rare	Occasional
Duration	Very brief	Brief
	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 this area can be classified as “semi-arid continental”.

Annual average precipitation ranges from 13 to 16 inches. About seventy eight percent of the moisture usually falls during the six-month period of May through October. Most of this summer precipitation falls in the form of brief and heavy afternoon and evening thunderstorms. Hail may accompany the more severe summer storms. In the winter, there is normally only one day a month when as much as one-tenth inch of moisture falls, usually in the form of snow. Snow seldom lies on the ground for more than a few days.

Temperatures are characterized by a distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm. Maximum temperature average above 90 degrees F from July to August and an average summer includes about 80 days with high readings exceeding 90 degrees F and 10 days with readings above 100 degrees F. Temperatures usually fall rapidly after sundown and low of 60 degrees F on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in midwinter usually rise to the 50's. However, freezing temperatures normally occur at night from mid-November to mid-March.

The freeze-free season ranges from 190 to 197 days. Dates of the last freeze are April 11th to April 17th and the first freeze varies from October 20th to October 25th.

Both temperature and rainfall distribution favor warm-season, perennial plant communities in the area. However, sufficient late winter and early spring moisture allows a cool-season species to occupy a minor component within the plant community

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):	164	196
Freeze-free period (days):	190	218
Mean annual precipitation (inches):	13	16

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.23	0.46	21.6	57.3
February	0.30	0.44	24.0	59.2
March	0.46	0.65	29.1	68.0
April	0.36	0.92	36.3	78.3
May	0.42	1.68	45.7	82.6
June	1.20	1.86	52.2	91.2
July	2.03	2.73	59.1	92.9
August	2.09	2.75	58.1	91.0
September	1.65	1.92	51.1	84.8
October	1.23	1.93	40.1	74.7
November	0.46	0.88	28.9	63.0
December	0.37	0.62	22.1	54.6

Climate Stations:

Station ID	Location	From:	To:
290205	Alamogordo Dam, NM	1972	2000
293292	Fort Sumner, NM	01/01/14	2000
297254	Ramon 8SW, NM	03/04/57	122/31/01
298596	Sumner Lake, NM	01/01/21	12/31/01
299851	Yeso, NM	01/01/48	12/31/01

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 of this site are deep and well drained. The surface textures are fine sand or loamy fine sand from 8 to 36 inches thick. The textures of the argillic subsoil are sandy clay loam, fine sandy loam or loamy fine sand. In some soils, a calcic horizon occurs at a depth of 20 to 40 inches. The soils have moderately rapid or moderate permeability. The available water-holding capacity is moderate or high. The plant-soil-air-water relationship is good. Because of the coarse surface textures, the soils if unprotected by plant cover and organic residue, becomes wind blown and low hummocks or dunes are formed around shrubs. Effective rooting depth is 60 inches or more.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

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

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Sandy

Surface Fragments $\leq 3''$ (% Cover): N/A

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

Subsurface Fragments $\leq 3''$ (%Volume): 15 to 35

Subsurface Fragments $\geq 3''$ (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Moderately slow	Moderately rapid
Depth (inches):	20	>72
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	0.00	10.00
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	6	12
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 is a warm season grassland dominated by mid and tall grasses mixed with shrubs and a variety of forbs. The forb composition fluctuates from year to year depending upon moisture conditions.

Canopy Cover:

Trees	0
Shrubs and half shrubs	15 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30
Bare ground	30
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	25
Litter (average depth in cm.)	4

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	1,020	1,530	2,040
Forb	225	338	450
Tree/Shrub/Vine	255	383	510
Lichen			
Moss			
Microbiotic Crusts			
Total	1,500	2,250	3,000

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	ANHA	Sand Bluestem	225 – 270	225 – 270
2	SCSC	Little Bluestem	338 – 450	338 – 450
3	PASE5 ERSE	Sand Paspalum Red Lovegrass	68 – 113	68 – 113
4	SEVU	Plains Bristlegrass	68 – 113	68 – 113
5	BOHI2	Hairy Grama	68 – 113	68 – 113
6	ARIST	Threawn spp.	68 – 113	68 – 113
7	DICOA	Fall Witchgrass	68 – 113	68 – 113
8	SPCR	Sand Dropseed	158 – 225	158 – 225
9	HENE5	New Mexico Feathergrass	135 – 180	135 – 180
10	BOER4	Black Grama	68 – 113	68 – 113
11	SONU2	Indiangrass	68 – 113	68 – 113
12	SPCO4	Spike Dropseed	68 – 113	68 – 113
13	BOCU	Sideoats Grama	68 – 113	68 – 113
14	2GA	Other Annual Grasses	0 – 45	0 – 45
15	CELO3	Field Sandbur	0 – 23	0 – 23

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
16	STSY	Queensdelight	23 – 68	23 – 68
17	SPHAE ERAN4 HEAN3	Globemallow Annual Buckwheat Annual Sunflower	23 – 68	23 – 68
18	AMPS MEMU3 GAVI2 BRASS2 DALEA EUPHO	Western Ragweed Stickleaf Wooly Beeblossom Annual Mustard Dalea Spurge spp.	0 – 45	0 – 45
19	2FA	Other Annual Forbs	45 – 90	45 – 90
20	2FP	Other Perennial Forbs	45 – 90	45 – 90

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
21	QUHA3	Shinnery Oak	0 – 270	0 – 270
22	YUGL	Small Soapweed	68 – 113	68 – 113
23	GUSA2	Broom Snakeweed	23 – 45	23 – 45
24	ARFI2	Sand Sagebrush	113 – 158	113 – 158
25	ERNAN5	Plains Rabbitbrush	23 – 68	23 – 68
26	OPPO	Plains Pricklypear	0 – 23	0 – 23

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 4005NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season tall and mid-grassland mixed with shrubs and forbs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, desert cottontail, hispid pocket mouse, Ord's kangaroo rat, lesser prairie chicken, burrowing owl, plains spadefoot toad and ornate box turtle.

The upland plover and the savannah sparrow are breeding birds of this site.

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
Armesa	B
Berwolf	B
Blowout Areas	B
Canez	B
Faskin	B
Ima	B
Jalmar	A
Malstrom	B
Pojo	C
Pyote	A
Redona	B
San Jose	B
Stromal	B

Recreational Uses:

Recreation potential is limited due to the lack of access roads for two-wheel drive vehicles, loose sand, lack of live water and lack of shade. The terrain typical of the “wide open spaces” of the area enhances aesthetic appeal. Hunting for prairie chicken is good to excellent. Hunting for antelope is fair to good. Photography of prairie chickens during their “booming” season is excellent to good. The natural beauty is enhanced by the large variety of flowering forbs that bloom from early spring to late fall and the varying color hues of the bluestem species.

Wood Products:

This site produces no wood products.

Other Products:

Grazing:

This site can be grazed any season of the year except during spring when shinnery oak is in the late bud and early leaf stage. During this period of time (normally six weeks) domestic livestock should be removed from pastures within this site because of shinnery oak is toxic. Care must be taken in years of high production of acorns. The acorns are also poisonous and are relished by livestock. Immediately following this stage, shinnery provides forage for livestock for about six weeks before the leaf becomes tough and brittle. Cattle, goats and sheep due to the variety of grasses, forbs and shrubs can graze this site. However, cattle most efficiently utilize it.

Continuous, yearlong grazing by cattle results in a plant community of low forage value plants such as threeawn spp., field sandbur, shinnery oak, small soapweed, sand sagebrush and forbs. Mesquite will easily invade where there is an available seed source. This condition is usually accompanied by reduced ground cover causing wind erosion. A system of deferred grazing, which varies the season of grazing and rest is needed to maintain or improve a healthy well-balanced plant community. Rest in different seasons benefits different plants. Winter rest will benefit all woody species. Spring rest will encourage forb production and benefit New Mexico feathergrass. Summer rest (July-September) allows species such as sand bluestem, little bluestem to grow and reproduce. Fall rest allows all warm season species to complete their growth cycle and mature. Shinnery oak can be best utilized if cattle are concentrated into a small pasture immediately following the toxic stage.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.1 – 4.3
75 – 51	2.6 – 6.8
50 – 26	4.3 – 9.0
25 – 0	9.0+

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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	P	P	P	P	P	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sand Bluestem	<i>Andropogon hallii</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
Hairy Grama	<i>Bouteloua hirsuta</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Plains Bristlegrass	<i>Setaria vulpiseta</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Fall Witchgrass	<i>Digitaria cognata v. cognata</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
Sand Paspalum	<i>Paspalum setaceum</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
Indiangrass	<i>Sorghastrum nutans</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
Plains Rabbitbrush	<i>Ericameria spp.</i>	L/S	D	D	U	U	U	U	U	U	U	U	U	D
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U

Animal Kind: Livestock

Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Blue Grama	<i>Bouteloua gracilis</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Hairy Grama	<i>Bouteloua hirsuta</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D

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
Sand Sagebrush	<i>Artemisia filifolia</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sand Sagebrush	<i>Artemisia filifolia</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Astragalus spp.	<i>Astragalus</i> spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	D	D	D	U	U	U	U

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: De Baca, Roosevelt

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: San Miguel, Quay, Guadalupe, De Baca and Chaves

Characteristic Soils Are:

Armesa, Berwolf, Blowout Areas, Canez	Faskin, Ima, Jalmar, Malstrom, Pojo, Pyote
Redona, San Jose, Stromal	

Other Soils included are:

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Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	07/26/78	Don Sylvester	07/26/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	11/20/02	George Chavez	2/11/03