UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XB063NM

Site Name: Deep Sand

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs as the coarse-textured eolian and alluvial sediments on the upland plains. Slopes are nearly level to gently undulating generally less than 5 percent. Low stabilized hummocks or dunes frequently occur. Exposure varies and is not significant. Elevation ranges from 3,500 to 4,200 feet above sea level.

Land Form:

1. Dune
2. Sand sheet
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	3,500	4,200
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
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 (^{0}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:

				Period		
Station ID	290205	Location	Alamogordo Dam, NM	From: 1972	To:	2000
Station ID	293292	Location	Fort Sumner, NM	From: 01/01/14	To:	2000
Station ID	297254	Location	Ramon 8SW, NM	From: 03/04/57	To:	122/31/01
Station ID	298596	Location	Sumner Lake. NM	From: 01/0121	To:	12/31/01
Station ID	299851	Location	Yeso, NM	From: 01/01/48	To:	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 excessively drained. The surface textures are fine and loamy fine sand and extend to a depth of 40 inches or more. The soils have rapid permeability. Available water-holding capacity is low. The plant-soil-air-water relationship is fair. Because of the coarse textures and rapid drying of the surface, the soil, if unprotected by plant cover and organic residue, becomes wind blown and hummocks or dunes are formed around shrubs.

Parent Material Kind: Eolian sand
Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Fine sand
2. Loamy fine sand
3.

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Sandy
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): N/A
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Rapid	Rapid
Depth (inches):	40	>72
Electrical Conductivity (mmhos/cm):	N/A	N/A
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	6.6	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 is grassland dominated by warm-season tall and mid-grasses. Short grasses, shrubs, half-shrubs and forbs make up an important portion of the plant community. Forbs generally fluctuate greatly from year to year, being most abundant in years of early spring precipitation.

Canopy Cover:	
Trees	0
Shrubs and half shrubs	10 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	25
Bare ground	35
Surface gravel	0
Surface cobble and stone	0
Litter (percent)	30
Litter (average depth in cm.)	3

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	840	1,400	1,960
Forb	120	200	280
Tree/Shrub/Vine	240	400	560
Lichen			
Moss			
Microbiotic Crusts			
Total	1,200	2,000	2,800

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	ANHA	Sand Bluestem	240 – 300	240 – 300
2	SCSC	Little Bluestem	240 – 300	240 – 300
3	SPCE SPFL2 SPCO4	Sand Dropseed Mesa Dropseed Spike Dropseed	240 – 300	240 – 300
4	BOHI2	Hairy Grama	160 – 200	160 – 200
5	ARIST	Threeawn spp.	100 – 140	100 – 140
6	PASE5 ERAGR SEVU2	Sand Paspalum Sand Lovegrass spp. Plains Bristlegrass	80 – 120	80 – 120
7	SPGI SONU2	Giant Sandreed Indiangrass	40 – 80	40 – 80
8	DICOA PAHA	Fall Witchgrass Halls Panicum	40 – 80	40 – 80
9	2GA	Other Annual Grasses	0 – 40	0 - 40

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ERAN4	Annual Buckwheat	60 – 100	60 – 100
11	BRASS2	Annual Mustard	20 – 80	20 – 80
12	HEAN3	Annual Sunflower	40 – 80	40 – 80
13	GAURA	Gaura spp.	20 – 40	20 – 40
14	MEMU3 SPHAE AMBRO	Stickleaf Globemallow Ragweed spp.	40 – 60	40 – 60
15	2FP	Other Perennial Forbs	20 – 60	20 – 60
16	2FA	Other Annual Forbs	60 – 100	60 – 100

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
17	QUHA3	Shinnery Oak	0 – 240	0 – 240
18	ARFI2	Sand Sagebrush	140 – 180	140 – 180
19	GUSA2 SENEC	Broom Snakeweed Groundsel	20 – 60	20 – 60
20	YUGL	Small Soapweed Yucca	20 – 40	20 – 40
21	ERICA	Plains Rabbitbrush spp.	0 – 40	0 – 40

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 **4013NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Grassland with warm-season tall and mid-grasses. Forbs and shrubs are important components.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat, which support a resident animal community that is characterized by pronghorn antelope, badger, desert cottontail, spotted ground squirrel, plains pocket mouse, Ord's kangaroo rat, prairie falcon, lesser prairie chicken, burrowing owl, bullsnake and little striped whiptail.

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**
Roswell	A

Recreational Uses:

Recreation potential is limited due to the lack of access roads for two-wheel drive vehicles, loose sands, lack of live water and the 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 the spring when shinnery oak is in the late bud and early leaf stage. During this period (normally six weeks) domestic livestock should be removed form pastures with this site because 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 oak 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. Continuos, 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 and 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 state until leaves become tough and brittle.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.4 – 5.5
75 – 51	3.4 – 9.2
50 – 26	5.3 – 12.0
25 – 0	12.0+

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
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	D	P	P	P	P	P	D	D	D
Sand Bluestem	Andropogon hallii	EP	D	D	D	D	P	P	P	P	P	D	D	D
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Fall Witchgrass	Digitaria cognata cognata	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	Paspalum setaceum	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	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
Rabbitbrush	Ericameria 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
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	U	U	U	U
Giant Sandreed	Calamovilfa gigantea	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
Halls Panicum	Panicum hallii	EP	D	D	D	D	P	P	P	P	P	D	D	D

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
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Halls Panicum	Panicum hallii	EP	D	D	D	D	P	P	P	P	P	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
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	U	U	U	U
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Halls Panicum	Panicum hallii	EP	D	D	D	D	P	P	P	P	P	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	Hesperostipa neomexicana	EP	U	U	D	D	D	U	U	D	D	D	U	U
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	D	P	P	P	P	P	D	D	D
Halls Panicum	Panicum hallii	EP	D	D	D	D	P	P	P	P	P	D	D	D

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: **Chaves, De Baca, Roosevelt**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

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:	
Roswell	
Other Soils included are:	

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	12/02.02	George Chavez	2/11/03