

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XC052NM

Site Name: Loamy Sand

Precipitation or Climate Zone: 14 to 18 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on nearly level to gently undulating plains. Slopes range from 0 to 5 percent but are usually less than 2 percent. Direction of slope varies and is not significant. Elevation ranges from 3,550 to 4,330 feet above sea level.

Land Form:

1. Plain

2.

3.

Aspect:

1. N/A

2.

3.

	Minimum	Maximum
Elevation (feet)	3,550	4,330
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 14 to 18 inches. Variations of 5 inches, more or less, are common. Approximately 85 percent of the precipitation falls from April through October. Most of the summer precipitation falls in the form of high intensity-short duration thunderstorms, often accompanied by hailstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is 58 to 61 degrees F with extremes of 30 degrees F below zero in the winter to 110 degrees F in the summer.

The average frost-free season is 190 to 210 days. The last killing frost being in early to mid-April and the first killing frost being in late October to early November.

Temperature and rainfall both favor warm-season perennial plant growth. Occasionally an early spring or late fall storm will occur from a prolonged front. This, along with occasional spring and fall showers, allows the cool-season component to occupy an important part of this plant community. The vegetation on this site can take advantage of the moisture at the time it falls. Because of the soil profile, little moisture can be stored for any length of time. Strong winds blow from February through May from the south, which rapidly dries out the soil during a period critical to cool-season plant growth.

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>181</u>	<u>216</u>
Freeze-free period (days):	<u>203</u>	<u>238</u>
Mean annual precipitation (inches):	<u>14</u>	<u>18</u>

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.37	0.45	22.0	56.6
February	0.35	0.49	25.8	62.0
March	0.44	0.68	31.5	69.0
April	0.62	1.05	39.6	77.0
May	1.67	2.10	49.4	85.5
June	1.89	2.63	58.4	92.8
July	2.15	2.75	62.1	93.6
August	2.41	2.95	60.7	91.9
September	1.88	2.63	53.9	85.9
October	1.31	1.73	42.6	77.1
November	0.51	0.57	30.5	65.3
December	0.42	0.60	23.1	58.1

Climate Stations:

Station ID	Location	From:	To:	Period
291939	Clovis, New Mexico	11/24/10	12/31/01	
292207	Crossroads #2, New Mexico	07/01/29	05/31/01	
292854	Elida, New Mexico	05/01/14	12/31/01	
294026	Hobbs, New Mexico	01/01/14	12/31/01	
295617	Melrose, New Mexico	04/01/14	12/31/01	
297008	Portales, New Mexico	01/01/14	12/31/01	
298713	Tatum, New Mexico	06/01/19	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:

These are deep, well drained soils. The surface textures are fine sand and loamy fine sand. The texture of the subsurface layers is sandy clay loam which, occurs at depths of 20 to 40 inches. Permeability is moderate. The available water-holding capacity is low. The effective rooting depth is about 50 inches. Moisture that falls on this site is readily absorbed. Winter and early spring moisture can be stored in the subsoils for earlier green-up by the deeper-rooted plants. The surface soils, if unprotected by plant cover and organic residues, become wind-blown, and low hummocks are formed.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loamy fine sand
2. Fine sand
3.

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): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Moderately slow	Moderate
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	0.00	4.00
Soil Reaction (1:1 Water):	6.1	9.0
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

The aspect of the potential plant community of this site is that of grassland dominated by tall and mid-grasses such as sand bluestem, yellow Indiangrass and little bluestem. Only scattered plants of the larger shrubs, such as sand sagebrush, southwest rabbitbrush and small soapweed are evident upon an initial distant view from a horizontal perspective. Closer examination will reveal a suppressed minority understory of shinnery oak and a stratified plant community of tall and mid-grasses, shrubs, short-grasses and annual and perennial forbs which, completely occupies and utilizes all moist layers of the soil profile. The annual grass and forb population fluctuates considerably from year to year with variation in total amount and seasonable distribution of rainfall. The perennial grass, forb and shrub components are somewhat less dynamic and vary with longer-term moisture cycles.

Canopy Cover:

Trees	0
Shrubs and half shrubs	0 – 10 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30 – 40
Bare ground	10 – 20
Surface gravel	0 – 5
Surface cobble and stone	0
Litter (percent)	40 – 50
Litter (average depth in cm.)	3 – 5

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	900	1,290	1,680
Forb	270	392	504
Tree/Shrub/Vine	195	280	364
Lichen			
Moss			
Microbiotic Crusts			
Total	1,500	2,150	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	430 – 538	430 – 538
2	SPGI	Giant Dropseed	65 – 108	65 – 108
3	SCSC	Little Bluestem	323 – 430	323 – 430
4	BOCU	Sideoats Grama	108 – 215	108 – 215
5	HENE5	New Mexico Feathergrass	22 – 65	22 – 65
6	BOER4	Black Grama	43 – 108	43 – 108
7	ARIST	Threawn spp.	43 – 108	43 – 108
8	ERSE	Red Lovegrass	108 – 215	108 – 215
9	SPCR SPCO4	Sand Dropseed Spike Dropseed	108 – 215	108 – 215
10	2GRAM	Other Grasses	65 – 108	65 – 108

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	RACO3 SPHAE PENST	Prairie Coneflower Globemallow Penstemon	108 – 215	108 – 215
12	MEMU3 CROTO BRASS2 PSCO2	Stickleaf Croton Mustard spp. Paperflower	108 – 215	108 – 215
13	AMPS GAVI2	Western Ragweed Woolly Beeblossom	65 – 108	65 – 108
14	ERAN4 HEAN3 2FORB	Annual Wild Buckwheat Annual Sunflower Other Forbs	108 – 215	108 – 215

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	YUGL	Small Soapweed Yucca	22 – 108	22 – 108
16	QUHA2 ARFI2	Shinnery Oak Sand Sagebrush	0 – 323	0 – 323
17	GUSA2	Broom Snakeweed	22 – 108	22 – 108
18	2SD	Other Shrubs	0 – 108	0 – 108

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: giant sandreed, Indiangrass, Indian ricegrass, needleandthread, sand paspalum, fall witchgrass, hairy grama, Hall’s panicum, gummy lovegrass, tumble lovegrass, flatsedge, field sandbur, false buffalograss and tumblegrass.

Other woody plants that could appear on this site include: sand plum, southwest rabbitbrush, fourwing saltbush, winterfat, pricklypear cactus, cholla cactus, ephedra spp., mesquite and common javelinabush.

Other forbs that could appear on this site include: dotted gayfeather, germander, prairie dogbane, lemon beebalm, spectaclepod, prairie clover, snow-on-the-mountain, lemon scurfpea, birdbill dayflower, smooth four-o’clock, ground cherry, woolly dalea and cocklebur.

Plant Growth Curves

Growth Curve ID 5502NM

Growth Curve Name: HCPC

Growth Curve Description: Tall and mid-grass grassland with scattered shrubs and forbs.

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 habitats which, support a resident animal community that is characterized by pronghorn antelope, badger, swift fox, desert cottontail, spotted ground squirrel, plains pocket gopher, hispid pocket mouse, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, ferruginous hawk, roadrunner, lesser prairie chicken, scaled quail, meadowlark, plains spadefoot toad, western box turtle, lesser earless lizard, southern prairie lizard, round-tailed horned lizard, bullsnake, plains black-headed snake and western diamondback rattlesnake.

Where large woody plants are present, scissor-tailed fly catcher, mourning dove, roadrunner, white-necked raven, mockingbird, western kingbird, loggerhead shrike and ferruginous and Swainson's hawk nest. Where associated with farmland, lesser sandhill crane and long-billed curlew feed during migration. Bobwhite quail are sometimes associated with native plum thickets. Grasshopper and vesper sparrows utilize the site during fall migration. The marsh hawk hunts over the site during the cooler months.

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
Arch	B
Brownfield	A
Jalmar	A
Portales	B
Triomas	B

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation and photography. There is also potential for quail, dove, antelope and predator hunting.

During years of abundant spring moisture, this site displays wildflowers in a wide spectrum of colors from May through August. A few fall blooming flowers also occur. If moisture is confined to the summer rainy period, only the view of a virtual "sea of grass" portrayed by waves of head-high sand bluestem will be rewarding to those who appreciate a tall grass prairie.

Wood Products:

The natural plant community of this site affords little or no wood products.

Other Products:

Grazing:

This site is suitable for grazing during all seasons of the year. It is most suitable for grazing by mature cattle due to the high composition of tall grasses and other coarse forage and browse. Sheep do not do well on this site. If protection from, or control of, predators can be provided, it would also be suitable for minor proportions of goats. Grazing by goats would also be of value from a brush control standpoint where woody plants have increased considerably or invaded. In general, cattle grazing will result in a decrease of grasses and an increase in unpalatable forbs and woody plants. Continuous yearlong grazing or grazing continually during the potential growing season will result in a decrease in the vigor and abundance of sand bluestem, little bluestem, sideoats grama and black grama. A corresponding increase will occur in threeawn spp., dropseed spp., shinnery oak, sand sagebrush and yucca. Eventually, mesquite will invade and brushy species and greater areas of bare exposed soil will dominate the site. Well-planned systems of deferred grazing by domestic livestock, which vary the seasons of grazing and rest in pastures during successive years, will result in a balanced plant community providing high-quality forage and browse during all seasons of the year.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.1 – 3.0
75 – 51	2.9 – 4.4
50 – 26	4.5 – 8.0
25 – 0	10.5+

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
Sand Bluestem	<i>Andropogon hallii</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
Giant Dropseed	<i>Sporobolus giganteus</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	<i>Schizachyrium scoparium</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	D	P	P	P	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
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Penstemon	<i>Penstemon</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Annual Sunflower	<i>Helianthus annuum</i>	EP	U	U	U	U	U	U	D	D	D	U	U	U

Animal Kind: Livestock

Animal Type: Goat

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Shinnery Oak	<i>Quercus havardii</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
Sand Sagebrush	<i>Artemisia filifolia</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Penstemon	<i>Penstemon</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Croton	<i>Croton</i> spp.	EP	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
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Croton	<i>Croton</i> spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Paperflower	<i>Psilostrophe cooperi</i>	EP	U	U	U	D	D	D	D	D	D	U	U	U
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	D	D	D	U	U	U	D	D	D	U
Broom Snakeweed	<i>Gutierrezia sarothrae</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Peppergrass Mustard	<i>Lepidium latifolium</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Annual Wild Buckwheat	<i>Eriogonum annuum</i>	EP	U	U	D	D	D	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: Chaves, Curry, De Baca, Lea, 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 Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Lea, Roosevelt & Curry.

Characteristic Soils Are:

Arch	Brownfield
Jalmar	Portales
Triomas	
Other Soils included are:	

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	06/05/80	Don Sylvester	06/05/80

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	01/06/03	George Chavez	2/24/03