

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XC051NM

Site Name: Shallow Sandy

Precipitation or Climate Zone: 14 to 18 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to gently sloping plains. It is normally on the convex position of low ridges between deeper soils and swales. Slopes range from 0 to 9 percent but are usually less than 5 percent. Direction of slope varies and is not significant. Elevation ranges from 3,550 to 4,300 feet above sea level.

Land Form:

1. Plain

2. Ridge

- 3.

Aspect:

1. N/A

- 2.

- 3.

	Minimum	Maximum
Elevation (feet)	3,550	4,300
Slope (percent)	0	9
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 well-drained, shallow soils over indurated caliche. The surface textures are typically fine sandy loam with some loam, loamy fine sand, sandy loam and gravelly fine sandy loam. The textures of the subsurface layers are fine sandy loam, loam, clay loam and sandy loam. Indurated caliche is at depths of less than 20 inches. Permeability is moderate to moderately rapid above the indurated caliche. The available water-holding capacity is moderate to high. The effective rooting depth is 6 to 20 inches. The shallow indurated caliche layer holds water up, making it available to shallow-rooted, rhizomatous and stoloniferous short and mid-grasses for short periods of time followed by rapid drying of the soil. If unprotected by plant cover and organic residues, these soils become wind blown and easily eroded.

Parent Material Kind: Eolian Sands

Parent Material Origin: Sandstone-unspecified

Surface Texture:

1. Fine sandy loam

2. Loam

3. Loamy fine sand

4. Sandy loam

5. Gravelly fine sandy loam

Surface Texture Modifier:

1. Gravel

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): 15 to 35

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:	Moderate	Moderately rapid
Depth (inches):	<10	20
Electrical Conductivity (mmhos/cm):	Unknown	Unknown
Sodium Absorption Ratio:	Unknown	Unknown
Soil Reaction (1:1 Water):	Unknown	Unknown
Soil Reaction (0.1M CaCl₂):	Unknown	Unknown
Available Water Capacity (inches):	6	12
Calcium Carbonate Equivalent (percent):	Unknown	Unknown

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 potential plant community of this site has a grassland aspect. It is composed largely of short and mid-grasses with lesser amounts of perennial forbs and a few scattered shrubs and half-shrubs. Annual forbs fluctuate considerably from year to year with annual and seasonal variation in amount and distribution of rainfall.

Canopy Cover:

Trees	0
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20 – 30
Bare ground	15 – 25
Surface gravel	5
Surface cobble and stone	0
Litter (percent)	40 – 50
Litter (average depth in cm.)	2 – 5

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	374	685	996
Forb	67	124	180
Tree/Shrub/Vine	14	25	36
Lichen			
Moss			
Microbiotic Crusts			
Total	450	825	1,200

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	206 – 248	206 – 248
2	BOCU	Sideoats Grama	165 – 206	165 – 206
3	BOGR2	Blue Grama	83 – 165	83 – 165
4	SEVU2	Plains Bristlegrass	41 – 83	41 – 83
5	ARIST TRIDE SPCR CHCU2	Threeawn spp. Tridens spp. Sand Dropseed Hooded Windmillgrass	41 – 83	41 – 83
6	HENE5 ACHY	New Mexico Feathergrass Indian Ricegrass	17 – 41	17 – 41
7	CYPER	Flatsedge spp.	17 – 25	17 – 25
8	2GRAM	Other Grasses	8 – 41	8 – 41

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	LIPU GAPU SPHAE VEPO4	Dotted Gayfeather Firewheel (Indian Blanket) Globemallow spp. Verbena	17 – 41	17 – 41
10	HOFFM	Hoffmanseggia spp.	8 – 25	8 – 25
11	MARIG2	Cutleaf Haplopappus	17 – 41	17 – 41
12	ERWR MELE2 DALA	Wright's Buckwheat Plains Blackfoot Woolly Prairie Clover	17 – 41	17 – 41
13	2FORB	Other Forbs	8 – 41	8 – 41

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	YUGL OPUNT	Small Soapweed Yucca Cactus spp.	8 – 25	8 – 25
15	DAFO KRER GUSA2	Feather Dalea Range Ratany Broom Snakeweed	17 – 41	17 – 41
16	2SD	Other Shrubs	8 – 25	8 – 25

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: hairy grama, sixweeks grama, buffalograss, creeping muhly, spike dropseed, cane bluestem, silver bluestem, field sandbur and sand paspalum.

Other shrubs that could appear on this site include: tesajo cactus, common javelinabush, ephedra spp. and mesquite.

Other forbs that could appear on this site include: senna, fleabane, croton, lemon scurfpea and Texas filaree.

Plant Growth Curves

Growth Curve ID 5501NM

Growth Curve Name: HCPC

Growth Curve Description: Short and mid-grassland with minor components of forbs and shrubs.

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, coyote, black-tailed jackrabbit, spotted ground squirrel, plains pocket gopher, plains pocket mouse, Ord's kangaroo rat, northern grasshopper mouse, hispid cotton rat, sparrow hawk, scaled quail, mourning dove, meadowlark, plains spadefoot toad, western box turtle, lesser earless lizard, round-tailed horned lizard, western coachwhip snake and prairie rattlesnake.

Swainson's hawk hunts over this site during the warmer months and the marsh hawk hunts it in the winter. Lark bunting is a regular winter migrant.

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
Blakeney	C
Conger	C
Kimbrough	D
Simona	D

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation and photography. Quail, dove, antelope and predator hunting are also available. During years of abundant spring moisture, this site displays an array of colorful wildflowers from May through June. A few fall blooming flowers also occur.

Wood Products:

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

Other Products:**Grazing:**

This site is suitable for grazing during all seasons of the year. It is also suited to grazing by all kinds and classes of domestic grazing animals. Because of the high percentage of grasses, the site is best suited to animals, which utilize grasses for a large percent of their diets, such as cattle. If protection from, or control of, predators can be provided, it is also well suited to minor proportions of sheep and goats. In general, cattle grazing will result in a decrease in grasses and an increase in woody plants. Sheep grazing will result in a decrease in perennial forbs and an increase in unpalatable grasses and shrubs. Grazing by goats will result in a decrease of woody vegetation and an increase in grasses. Continuous yearlong grazing or grazing continually during the potential growing season will result in a decrease in the vigor and abundance of sideoats grama, black grama and plains bristlegrass a corresponding increase in low-value grasses, forbs and shrubs. Eventually, mesquite, catclaw, cholla cactus and wooly groundsel will invade. 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	2.2 – 3.3
75 – 51	3.1 – 4.0
50 – 26	4.1 – 6.0
25 – 0	6.0+

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
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	<i>Bouteloua gracilis</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
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	D	D	D	P	P	P	D	D	D	D	D	D
Dotted Gayfeather	<i>Liatris punctata</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
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Verbena	<i>Verbena polystachya</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
Range Ratany	<i>Krameria erecta</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: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Dotted Gayfeather	<i>Liatris punctata</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
Firewheel (Indian Blanket)	<i>Gaillardia pulchella</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
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Verbena	<i>Verbena polystachya</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
Other Annual Forbs	Various	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
Black Grama	<i>Bouteloua eriopoda</i>	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	<i>Bouteloua gracilis</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
Tridens	<i>Tridens</i> spp.	EP	U	U	U	U	U	U	D	D	D	U	U	U
Hooded Windmillgrass	<i>Chloris cucullata</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
Flatsedge	<i>Cyperus</i> spp.	EP	U	U	U	D	D	D	U	U	U	U	U	U
Range Ratany	<i>Krameria erecta</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
Wright's Buckwheat	<i>Eriogonum wrightii</i>	EP	U	U	U	D	D	D	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
Feather Dalea	<i>Dalea formosa</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
Range Ratany	<i>Krameria erecta</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
Wright's Buckwheat	<i>Eriogonum wrightii</i>	EP	U	U	U	D	D	D	D	D	D	U	U	U
Cutleaf Haplopappus	<i>Machaeranthera pinnatifida</i>	EP	U	U	U	D	D	D	D	D	D	U	U	U

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
Dotted Gayfeather	<i>Liatriis punctata</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
Firewheel (Indian Blanket)	<i>Gaillardia pulchella</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
Globemallow	<i>Sphaeralcea</i> spp.	EP	U	U	U	D	D	D	D	D	D	U	U	U
Hoffmanseggia	<i>Hoffmanseggia</i> spp.	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
Cutleaf Haplopappus	<i>Machaeranthera pinnatifida</i>	EP	U	U	U	D	D	D	D	D	D	U	U	U
Plains Bristlegrass	<i>Setaria vulpiseta</i>	EP	D	D	D	D	P	P	P	P	D	D	D	D
New Mexico Feathergrass	<i>Hesperostipa neomexicana</i>	EP	U	U	U	D	D	D	U	U	D	D	D	U
Feather Dalea	<i>Dalea formosa</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
Range Ratany	<i>Krameria erecta</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
Broom Snakeweed	<i>Gutierrezia sarothrae</i>	L/S	D	D	D	D	D	D	D	D	D	D	D	D

