

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077BY027NM

Site Name: Sandy Loam

Precipitation or Climate Zone: 15 to 19 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on level to gently sloping areas of the plains upland. Elevation ranges from approximately 3,800 to about 5,000 feet above sea level. Slopes range from 0 to 8 percent. Exposure varies and is not significant.

Land Form:

1. Plain

2.

3.

Aspect:

1. N/A

2.

3.

| | | |
|-----------------------------------|----------------|----------------|
| | Minimum | Maximum |
| Elevation (feet) | 3,800 | 5,000 |
| Slope (percent) | 0 | 8 |
| 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 this area can be classified as “semi-arid continental”.

Annual average precipitation ranges from 15 to 19 inches. Seventy percent of the moisture usually falls during the six-month period 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. Spring precipitation (March, April, May) accounts for approximately 25 percent of the annual precipitation. Most of this comes as light rain showers. Winter moisture may occur as either rain or snow and usually averages less than ½ inch per month.

Temperatures are characterized by distinct seasonal change and large annual and diurnal temperature ranges. Summers are moderately warm; maximum temperatures average above 90 degrees F in July and August. Temperatures usually fall rapidly after sundown and range in the low 60’s on most summer nights. Winters are mild, sunny and dry. Daytime shade temperatures in mid-winter usually rise to the 50’s. However, freezing temperatures normally occur at night from mid-November to mid-March.

The frost-free season ranges from 181 to 199 days. Dates of the last freeze vary from April 10th to April 23rd and the first freeze varies from October 18th to October 26th.

Wind velocities in this area are high and average about 5.3 miles per hour on an annual basis. The spring months are characterized by frequent windstorms with velocities in excess of 45 miles per hour, which cause excessive erosion on soils not protected by a good ground cover of vegetation. Humidity is low and evaporation is high.

Both temperature and rainfall distribution favor production of warm-season, perennial plants in this area. However, sufficient late winter and early spring moisture allows cool-season species to occupy an important component within most plant communities.

Climate data was obtained from the WCCR web site using 50 % probabilities for freeze-free and frost-free season using 28.5 degrees F and 32.5 degrees F respectively.

| | Minimum | Maximum |
|--|----------------|----------------|
| Frost-free period (days): | 175 | 183 |
| Freeze-free period (days): | 191 | 202 |
| Mean annual precipitation (inches): | 15 | 19 |

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

| | Precip. Min. | Precip. Max. | Temp. Min. | Temp. Max. |
|-----------|--------------|--------------|------------|------------|
| January | .43 | .50 | 21.8 | 52.8 |
| February | .43 | .66 | 25.0 | 57.7 |
| March | .68 | .80 | 30.0 | 64.7 |
| April | .90 | 1.05 | 38.1 | 73.4 |
| May | 2.01 | 2.35 | 47.3 | 81.8 |
| June | 2.13 | 2.67 | 56.1 | 90.9 |
| July | 2.80 | 3.25 | 60.6 | 93.4 |
| August | 2.80 | 3.05 | 59.4 | 91.2 |
| September | 1.66 | 2.17 | 52.4 | 85.1 |
| October | 1.29 | 1.37 | 41.5 | 75.0 |
| November | .59 | .72 | 30.3 | 62.5 |
| December | .49 | .65 | 22.1 | 53.5 |

Climate Stations:

| Station ID | Location | From: | To: |
|------------|-------------------|----------|----------|
| 291332 | Cameron, NM | 01/01/48 | 05/31/98 |
| 295516 | McCarty Ranch, NM | 11/01/83 | 12/31/01 |
| 297226 | Ragland 3SSW, NM | 02/01/35 | 12/31/01 |
| 297867 | San Jon, NM | 01/01/14 | 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:

This site consists of soils that are deep and well drained. The surface layer is fine sandy loam about 6 to 18 inches thick. The subsoil is medium and moderately fine textured. They have argillic or cambic horizons and may overlie calcic horizons. These soils have medium to high intake rates. Water-holding capacity is moderate. The air-water-plant relationship is favorable for plant growth. The ability of these soils to absorb moisture quickly makes them more responsive to light or erratic rainfall than adjacent sites having heavier-textured surface layer. Effective rooting depth is 20 inches to more than 60 inches.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

| |
|--------------------|
| 1. Fine sandy loam |
| 2. |
| 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): 35 to 60

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

| | Minimum | Maximum |
|--|-----------------|------------------|
| Drainage Class: | Well | Well |
| Permeability Class: | Moderately slow | Moderately rapid |
| Depth (inches): | 40 | >72 |
| Electrical Conductivity (mmhos/cm): | 0.00 | 4.00 |
| Sodium Absorption Ratio: | N/A | N/A |
| Soil Reaction (1:1 Water): | 6.6 | 9.0 |
| Soil Reaction (0.1M CaCl₂): | N/A | N/A |
| Available Water Capacity (inches): | 6 | 9 |
| 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 grassland with a mixture of warm-season short and mid-grasses dotted with an occasional half-shrub. Perennial and annual forbs make up approximately 15 percent of the plant community. Half-shrubs make up a minor portion of the community.

Canopy Cover:

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

Plant Community Annual Production (by plant type): _____

| Plant Type | Annual Production (lbs/ac) | | |
|--------------------|----------------------------|-------|-------|
| | Low | RV | High |
| Grass/Grasslike | 640 | 960 | 1,280 |
| Forb | 112 | 168 | 224 |
| Tree/Shrub/Vine | 48 | 72 | 96 |
| Lichen | | | |
| Moss | | | |
| Microbiotic Crusts | | | |
| Total | 800 | 1,200 | 1,600 |

Plant Community Composition and Group Annual Production: Plant species are grouped by annual production **not** by functional groups.

Plant Type - Grass/Grasslike

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|--------------|-------------------------|---------------------------|---------------------------|-------------------------|
| 1 | BOGR2 BOHI2 | Blue Grama Hairy Grama | 240 – 300 | 240 – 300 |
| 2 | BOCU | Sideoats Grama | 180 – 204 | 180 – 204 |
| 3 | BOER4 | Black Grama | 180 – 204 | 180 – 204 |
| 4 | SCSC | Little Bluestem | 120 – 156 | 120 – 156 |
| 5 | SEVU2 | Plains Bristlegrass | 60 – 84 | 60 – 84 |
| 6 | SPCR | Sand Dropseed | 36 – 60 | 36 – 60 |
| 7 | HENE5 | New Mexico Feathergrass | 36 – 60 | 36 – 60 |
| 8 | HECO26 | Needleandthread | 36 – 60 | 36 – 60 |
| 9 | ARIST | Threeawn spp. | 36 – 60 | 36 – 60 |
| 10 | PLJA | Galleta | 36 – 60 | 36 – 60 |
| 11 | ELEL5 | Bottlebrush Squirreltail | 36 – 60 | 36 – 60 |
| 12 | MUAR2 | Sand Muhly | 36 – 60 | 36 – 60 |

Plant Type - Forb

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|--------------|-------------------------|---|---------------------------|-------------------------|
| 13 | SPHAE | Globemallow spp. | 24 – 48 | 24 – 48 |
| 14 | HOGL2 | Indian Rushpea | 12 – 36 | 12 – 36 |
| 15 | CROTO | Croton spp. | 12 – 36 | 12 – 36 |
| 16 | ERAN4 MEMU3 HEAN5 | Annual Buckwheat Stickleaf Annual Sunflower | 12 – 36 | 12 – 36 |
| 17 | 2FP | Other Perennial Forbs | 36 – 60 | 36 – 60 |
| 18 | 2FA | Other Annual Forbs | 36 – 60 | 36 – 60 |

Plant Type – Tree/Shrub/Vine

| Group Number | Scientific Plant Symbol | Common Name | Species Annual Production | Group Annual Production |
|--------------|---------------------------------|--|---------------------------|-------------------------|
| 19 | YUCCA | Yucca spp. | 36 – 60 | 36 – 60 |
| 20 | GUSA2 | Broom Snakeweed | 12 – 36 | 12 – 36 |
| 21 | KRLA2 | Winterfat | 0 – 24 | 0 – 24 |
| 22 | ACGR ARFR2 OPPO PACAL5 | Catclaw Acacia Sand Sagebrush Plains Pricklypear Cactus Wooly Groundsel | 0 – 24 | 0 – 24 |

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 5202NM

Growth Curve Name: HCPC

Growth Curve Description: Warm-season grassland with minor components of forbs and shrubs.

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

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

No Data

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 |
|--------------------|-------------------------|
| Amarillo | B |
| Bascom | B |
| Berwolf | B |
| Canez | B |
| Clovis | B |
| Drake | B |
| LasTanos | B |
| Mansker | B |
| Portales | B |
| Springer | B, A |

Recreational Uses:

Recreation potential is limited. Suitability for camping, picnicking and hiking is fair, limited mainly by live water and the lack of shade. Hunting is good for antelope, quail, dove and small game. The terrain typical of the “wide open spaces” of the area enhances aesthetic appeal. The natural beauty of this site is enhanced by the large variety of flowering plants that bloom from early spring to late fall with the availability of precipitation.

Wood Products:

This site produces not wood products.

Other Products:

Grazing:

All classes and kinds of livestock can graze this site during any season of the year. Approximately 95 percent of the total yield are from species that furnish forage for grazing animals. These species are a large variety of grasses and forbs, which provide good forage and nutrition for grazing animals during most of the year. Supplemental protein is needed during the winter months. Due to the potential of this site to produce forbs, it may favor grazing by sheep and antelope. Continuous yearlong grazing by cattle or continual grazing during the period from April through October will cause the site to deteriorate and become less productive. Species such as little bluestem, sideoats grama, black grama, plains bristlegrass, New Mexico feathergrass and winterfat will decrease in composition of the plant community. Species such as blue grama, sand dropseed, threeawn spp., yucca spp. and broom snakeweed will increase under continual grazing. Sand sagebrush will increase on this site under deteriorated conditions. A system of deferred grazing, which varies the season of rest and grazing during successive years, is needed to maintain or to improve a healthy well-balanced plant community. Deferment during different seasons of the year benefits different species. Rest during the winter benefits winterfat. Also, cattle show a definite preference to black grama during the late winter and can be over utilized. Winter rest will reduce the grazing pressure on black grama. Spring rest (April-June) will benefit cool-season grasses such as New Mexico feathergrass and early forbs. Summer rest will benefit warm-season species such as little bluestem, sideoats grama, black grama and blue grama. Fall rest will allow warm-season plants to complete their growth cycle and mature.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

| Similarity Index | Ac/AUM |
|-------------------------|---------------|
| 100 - 76 | 2.0 – 4.3 |
| 75 – 51 | 2.6 – 5.5 |
| 50 – 26 | 3.8 – 8.0 |
| 25 – 0 | 8.0+ |

| 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 | D | D | D | D | D |
| Black Grama | <i>Bouteloua eriopoda</i> | EP | P | P | P | D | D | D | D | D | D | D | P | P |
| Bottlebrush Squirreltail | <i>Elymus elymoides</i> | EP | U | U | D | D | D | U | U | U | D | D | D | U |
| Plains Bristlegrass | <i>Setaria vulpiseta</i> | EP | D | D | D | D | P | P | P | P | P | D | D | D |
| Needleandthread | <i>Hesperostipa comata</i> | EP | D | D | P | P | P | D | D | D | D | D | D | D |
| Winterfat | <i>Krascheninnikovia lanata</i> | L/S | D | D | P | P | P | P | P | P | D | D | D | 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 | P | 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 |
| Needleandthread | <i>Hesperostipa comata</i> | EP | D | D | P | P | P | D | D | D | 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 |
| Globemallow | <i>Sphaeralcea</i> spp. | EP | U | U | D | D | D | D | D | D | U | U | U | U |
| Sideoats Grama | <i>Bouteloua curtipendula</i> | EP | D | D | D | D | P | P | P | P | P | D | D | D |
| Black Grama | <i>Bouteloua eriopoda</i> | EP | D | D | D | P | P | P | P | D | D | D | D | D |
| Plains Bristlegrass | <i>Setaria vulpiseta</i> | EP | D | D | D | D | D | P | P | P | D | D | D | D |
| Winterfat | <i>Krascheninnikovia lanata</i> | L/S | P | P | P | P | P | P | P | P | P | P | P | P |

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 |
| Annual Sunflower | <i>Helianthus annuum</i> | EP | U | U | U | U | U | D | D | D | U | U | U | U |
| Croton | <i>Croton</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 |
| Winterfat | <i>Krascheninnikovia lanata</i> | L/S | D | D | D | D | D | D | D | D | D | 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: Curry, Harding, Quay

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 : Harding, Curry & Quay.

Characteristic Soils Are:

Amarillo, Bascom, Berwolf, Canez, Clovis Drake, Las Tanos, Mansker, Portales, Springer

Other Soils included are:

Site Description Approval:

| | | | |
|---------------|-------------|-----------------|-------------|
| <u>Author</u> | <u>Date</u> | <u>Approval</u> | <u>Date</u> |
| Don Sylvester | 07/26/78 | Don Sylvester | 07/26/78 |

Site Description Revision:

| | | | |
|------------------|-------------|-----------------|-------------|
| <u>Author</u> | <u>Date</u> | <u>Approval</u> | <u>Date</u> |
| Elizabeth Wright | 08/29/02 | George Chavez | 09/12/02 |