

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XA017NM

Site Name: Swale

Precipitation or Climate Zone: 9 to 14 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on broad valley bottoms, floodplains, and in depression and other low-lying area which receive runoff moisture from adjacent sites. Slopes range from 1 to 3 percent. Elevation ranges from 6,400 to 7,800 feet above sea level.

Land Form:

1. Swale

2. Depression

- 3.

Aspect:

1. N/A

- 2.

- 3.

	Minimum	Maximum
Elevation (feet)	6,400	7,800
Slope (percent)	1	3
Water Table Depth (inches)	N/A	N/A
	Minimum	Maximum
Flooding:		
Frequency	Rare	Frequent
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:

Medium to high.

CLIMATIC FEATURES

Narrative:

Mean annual precipitation varies from 9 to 14 inches. Deviations of 4 inches or more are quite common. Approximately 60 percent of the precipitation is received during the native plant growth period, April through September. During July, August and September 4 to 6 inches of precipitation influence the presence and production of warm-season plants. Fall and spring moisture is conducive to the growth of cool-season herbaceous plants. Maximum shrub growth also occurs during this time. Summer precipitation is characterized by brief, localized thunderstorms. Winter moisture usually occurs as snow or light rain.

Mean annual temperature varies from 64 degrees F in July to 21 degrees F in January. The maximum is near 100 degrees F. The minimum is near 40 degrees F. The average last killing frost in the spring is around mid-May. The first killing frost in the fall is late September or early October. The frost-free period is approximately 120 to 140 days, but freezing temperatures have been recorded for every month except July and August. Temperatures are generally conducive for herbaceous plant growth from April through September.

Wind velocities are relatively light most of the year with stronger winds occurring in spring and early summer. These stronger winds, which may exceed 25 miles per hour, increase transpiration rates of plants and rapidly dry the soil surface. Also, small soil particles are often displaced by the stronger winds, which can result in structural damage to native plants, particularly young seedlings.

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

	Minimum	Maximum
Frost-free period (days):	104	119
Freeze-free period (days):	134	145
Mean annual precipitation (inches):	9	14

Monthly moisture (inches) and temperature (⁰F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.52	1.79	7.6	45.6
February	.43	1.56	10.7	50.4
March	.67	1.92	16.8	56.8
April	.52	1.26	22.7	66.0
May	.62	1.26	28.8	75.5
June	.49	1.21	35.1	85.8
July	1.54	3.41	42.1	88.9
August	1.86	3.72	41.8	85.8
September	1.08	1.86	34.6	78.8
October	1.01	1.86	25.3	68.8
November	.71	1.60	16.2	56.0
December	.56	1.49	9.3	47.0

Climate Stations:

		Period					
Station ID	<u>292241</u>	Location	<u>Cuba, NM</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>293422</u>	Location	<u>Gallup FAA AP, NM</u>	From:	<u>01/01/21</u>	To:	<u>12/31/01</u>

INFLUENCING WATER FEATURES**Narrative:**

This site may be 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 are deep and well drained. Surface textures range from loams, silt loams to clays. Permeability is moderately slow to slow. Available water-holding capacity is moderately high to high. Runoff is medium to rapid.

Parent Material Kind: Eolian deposits

Parent Material Origin: Sandstone - shale

Surface Texture:

1. Silty clay loam
2. Clay loam
3. Fine sandy loam
4. Silty loam

Surface Texture Modifier:

1. N/A
1.
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
	<u>Well</u>	<u>Well</u>
Drainage Class:		
Permeability Class:	<u>Very slow</u>	<u>Moderately slow</u>
Depth (inches):	<u>40</u>	<u>60</u>
Electrical Conductivity (mmhos/cm):	<u>0.00</u>	<u>4.00</u>
Sodium Absorption Ratio:	<u>0.00</u>	<u>5.00</u>
Soil Reaction (1:1 Water):	<u>6.6</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl2):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>6</u>	<u>12</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

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

Typically, this is a grassland site with scattered shrubs. Western wheatgrass is the dominant grass on this site with basin big sagebrush and fourwing saltbush providing a shrub savannah aspect. Forbs are a minor component on the site.

Canopy Cover:

Trees, shrubs and half-shrubs	8 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	33
Bare ground	37
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	680	1,063	1,445
Forb	32	50	68
Tree/Shrub/Vine	80	125	170
Lichen			
Moss			
Microbiotic Crusts			
Total	800	1,250	1,700

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	PASM	Western Wheatgrass	375 – 500	375 – 500
2	MUWR	Spike Muhly	63 – 188	63 – 188
3	SPAI	Alkali Sacaton	63 – 188	63 – 188
4	ELEL5	Bottlebrush Squirreltail	68 – 125	68 – 125
5	BOGR2 PLJA	Blue Grama Galleta	38 – 88	38 – 88
6	POFE KOMA	Muttongrass Prairie Junegrass	38 – 88	38 – 88
7	2GRAM	Other Grasses	68 – 88	68 – 88

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	CLSE ARDO3 ARTEM CIRSI 2FORBS	Rocky Mountain Beeplant Green Sagewort Louisiana Sagewort spp. Thistle spp. Other Forbs	38 – 68	38 – 68

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ATCA2	Fourwing Saltbush	38 – 68	38 – 68
10	ARTRT	Basin Big Sagebrush	38 – 68	38 – 68
11	ERNAN5 2SD	Rubber Rabbitbrush Other Shrubs	38 – 68	38 – 68

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 species that could appear include: sand dropseed, mat muhly, silver bluestem, slender wheatgrass, sedge spp., tansy mustard, western ragweed, fleabane spp., globemallow spp., skunkbush sumac, Apacheplume, winterfat, green rabbitbrush, spineless horsebrush and broom snakeweed.

Plant Growth Curves

Growth Curve ID 0017NM

Growth Curve Name: HCPC

Growth Curve Description: Grassland with scattered shrubs and a minor forb component.

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
Billings	B
Hickman	B
Manzano	B
Ruson	C
Shawa	?
Sparham	D
Teromote	B

Recreational Uses:

This site is not usually thought of as having much recreational value. The site may be well adapted to horseback riding and hunting.

Wood Products:

This site produces no significant wood products in its potential plant community.

Other Products:

Grazing:

Approximately 95 percent of the vegetation produced on this site are suitable for grazing or browsing by domestic livestock and wildlife. Grazing distribution on to adjacent sites may be a problem since grazing animals are attracted to this site due to early green up. Such continuous, heavy grazing pressure, as well as trampling damage on wet soils, may lead to deterioration of the potential plant community. The result is a decrease in western wheatgrass, spike muhly, muttongrass, prairie junegrass and fourwing saltbush. Plant species that increase include blue grama, mat muhly, basin big sagebrush, rubber rabbitbrush and broom snakeweed. Serious deterioration is represented by a sod bound cover of blue grama or total dominance by basin big sagebrush, both in low in production.

A planned grazing system, which will prevent repetitive grazing of the most desirable species and allows a periodic replenishment of the root reserves, is best to maintain the desirable balance between plant species and high production.

In addition to domestic livestock, deer, elk, pronghorn antelope, small mammals and birds also use this site.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	1.7 – 2.2
75 – 51	2.1 – 3.4
50 – 26	3.3 – 6.7
25 – 0	6.7+

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
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Spike Muhly	<i>Muhlenbergia wrightii</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
Fourwing Saltbush	<i>Atriplex canescens</i>	L/S	P	P	P	P	P	D	D	D	D	D	D	P
Muttongrass	<i>Poa fendleriana</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Some 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

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: _____

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes No

General Legal Description: _____

<u>Relationship to Other Established Classifications:</u>
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Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the New Mexico and Arizona Plateaus and Mesas 36 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Mckinley & Sandoval

Characteristic Soils Are:

Billings	Hickman
Manzano	Ruson
Shawa	Sparham, Teromote

Other Soils included are:

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Site Description Approval:

{PRIVATE}Author	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester		Don Sylvester	

Site Description Revision:

{PRIVATE}Author	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	08/16/02	George Chavez	09/11/02

