UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC103NM

Site Name: Bottomland

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs in the bottoms of broad major drainageways that receive additional runoff from surrounding uplands on a regular basis. Slopes range from 0 to 3 percent. Direction of slope is not significant. Elevations range from 5,000 to 6,500 feet above sea level.

Land Form:

1. Drainageway
2. Valley bottom
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	5,000	6,500
Slope (percent)	0	3
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	Rare	Frequent
Duration	Very brief	Brief

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 the area is "semi-arid continental."

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are not uncommon. Seventy-five percent of the precipitation falls from April to October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is about 50 degrees F with extremes of -29 degrees F in the winter and 103 degrees F in the summer.

The average frost-free season is 130 to 160 days. The last killing frost is in early May and the first killing frost is in early October.

The majority of precipitation falls when temperatures favor warm-season plant growth. However, about 40 percent of the precipitation is also available for cool-season plant growth. This allows the cool-season species to occupy a very important component in this site. The effective precipitation of this site is increased due to its position on the landscape, by runoff from adjoining sites. This site also serves as a cold air drainageway. These two factors are both favorable to cool-season species and also increase the variety of production of the vegetative community. Strong winds from the west and southwest blow across the area from February to June and dry the soil during a critical period for 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):	131	173
Freeze-free period (days):	155	187
Mean annual precipitation (inches):	13	16

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.34	.92	15.6	42.1
February	.34	.81	19.9	52.9
March	.23	.98	24.4	59.7
April	.39	.96	31.4	68.9
May	.85	1.61	39.2	77.7
June	.89	1.62	46.9	87.1
July	1.77	2.75	53.1	88.5
August	2.46	3.22	51.9	85.7
September	1.54	2.26	44.3	80.4
October	1.0	1.51	32.8	70.5
November	.57	1.02	22.2	57.5
December	.34	1.16	15.9	49.3

Climate Stations:

				Period		
Station ID	291918	Location	Clines Corners7SE, NM	From: 12/10/68	To:	11/30/00
Station ID	292096	Location	Corona11SSW, NM	From: 12/01/77	To:	09/30/92
Station ID	293060	Location	Estancia, NM	From: 01/01/14	To:	12/31/00
Station ID	293649	Location	Gran Quivira Natl. Monument, NM	From: 06/01/38	To:	12/31/00
Station ID	295965	Location	Mountainair, NM	From: 03/01/14	To:	12/31/00
Station ID	299405	Location	Vaughn, NM	From: 01/01/71	To:	12/31/00

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from wetlands or streams.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

None

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils on this iste are deep and well drained. The surface textures are loams, silt loam, and silty clay loams. Permeability is slow to moderately slow. The available water-holding capacity is high. The effective rooting depth is 60 inches or more. These soils can store water for relatively long period.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Loams
2. Silt loams
3. Clay loam
4. Fine sandy loam

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): <5
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	8.00
Sodium Absorption Ratio:	0.00	4.00
Soil Reaction (1:1 Water):	6.6	9.0
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	9	12
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 this site is that of a grassland. Mid- and tall-grasses are dominant with occasional shrubs or half-shrubs. This site occurs in a position which receives surface runoff from surrounding uplands on a regular basis. This additional runoff makes the vegetation noticeably taller and more dense than adjacent upland sites.

Canopy Cover	
Trees	0 – 1 %
Shrubs and Half Shrubs	2 – 5 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	40
Bare ground	20
Surface cobble and stone	0
Litter (percent)	40
Litter (average depth in cm.)	3

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	1,314	2,117	2,920
Forb	144	232	320
Tree/Shrub/Vine	144	232	320
Lichen			
Moss			
Microbiotic Crusts			
Totals	1,800	2,900	4,000

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	BOCU	Sideoats Grama	290 - 435	290 – 435
2	SPAI4	Alkali Sacaton	435 - 1015	435 – 1015
3	PAOB	Vine-mesquite	435 - 580	435 – 580
4	PASM	Western Wheatgrass	435 - 1015	435 – 1015
5	BOGR2	Blue Grama	145 - 290	145 – 290
6	PLJA PLMU3	Galleta Tobosa	145 - 290	145 – 290
7	MURI MURE	Mat Muhly Creeping Muhly	145 - 290	145 – 290
8	SPWR2	Giant Sacaton	290 - 580	290 - 580
9	ELEL5	Bottlebrush Squirreltail	87 - 145	87 – 145
10	BOBA3 BOSA	Cane Bluestem Silver Bluestem	145 - 203	145 – 203
11	2GRAM	Other Grasses	145 - 290	145 – 290

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	RACO3 SPCO	Upright Prairie Coneflower Scarlet Globemallow	87 - 145	87 – 145
13	CINE	New Mexico Thistle	87 - 145	87 – 14
14	ACNA2 SOEL	Desert Holly Silverleaf Nightshade	58 - 145	58 – 145
15	HEAN3	Annual Sunflowers	58 - 145	58 – 145
16	ARTEM	Prairie Sage	29 - 87	29 – 87
17	2FORBS	Other Forbs	29 - 87	29 – 87

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
18	ATCA2	Fourwing Saltbush	145 - 232	145 – 232
19	OPIM	Walkingstick Cholla	29 - 145	29 – 145
20	GUSA2	Broom Snakeweed	29 - 87	29 – 87
21	2SD	Other Shrubs	29 - 87	29 – 87

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: burrograss, ring muhly, threeawn, sand dropseed, wolftail, buffalograss, Indian ricegrass, Indiangrass, Canada wildrye, Hall's panicum, prairie junegrass, red muhly, plains lovegrass, and black grama.
Other shrubs include: wolfberry, yucca, fringed sagewort, Apacheplume, ephedra spp., and winterfat.
Other forbs include: buffalobur, buffalo gourd, whorled milkweed, California bricklebush, tansymustard and threadleaf groundsel.

Plant Growth Curves

Growth Curve ID **4303NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Mixed cool and warm-season mid and talll grass species with scattered shrubs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat for a wildlife community characterized by pronghorn antelope, black-tailed jackrabbit, badger, Botta's pocket gopher, coyote, desert cottontail, sparrow hawk, western meadowlark, lart bunting, killdear, tiger salamander, and bullsnake. Artificial ponds on this site provide water for numerous species of wildlife from adjacent areas.

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
Gabaldon	B
La Brier	C
La Fonda	B
Manzano	B
Prewitt	B
Riverwash	B
Tours	C

Recreational Uses:

This site has limited potential for camping, picnicking, or hiking. Hunting is good for antelope, and artifical ponds prevalent on this site provide limited waterfowl hunting and upland gamebird hunting.

Wood Products:

This site produces on wood products.

Other Products:

Grazing:

This site provides forage suitable for grazing by all classes of cattle and sheep at any season of the year. In cases where this site has been invaded by woody plants, goats can be used as a management tool to help control these plants. Mismanagement of grazing on this site will cause a decrease of the more palatable grasses and forbs such as vine-mesquite, western wheatgrass, and alkali sacaton, and a subsequent increase in grasses, forbs, and shrubs with low grazing value and much lower forage production potential such as mat muhly, New Mexico thistle, and cholla cactus. Continued severe mismanagement can lead to reduced ground cover. It will also increase gully erosion which will channel runoff that would nomally spread over the entire site. This further lowers productivity, and extensive structural erosion control measures may be needed to restore productivity on thses severely deteriorated sites. Because of the inherent high productivity of bottomland range sites, they respond very well to grazing management which includes deferment from grazing during the growing season of the desirable forage plants. This site also lends itself well to management as a separate unit fenced to separate it from surrounding uplands.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	.8 – 3.0
75 – 51	1.6 – 3.9
50 – 26	2.6 – 6.3
25 – 0	6.3+

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	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Alkali Sacaton	Sporobolus airoides	EP	D	D	D	D	D	P	P	P	U	U	U	D
Fourwing Saltbush	Atriplex conescens	L/S	P	P	D	D	D	D	D	D	D	P	P	P
Giant Sacaton	Sporobolus wrightii	EP	D	D	D	D	D	P	P	P	U	U	U	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
Scarlet Globemallow	Sphaeralcea coccinea	EP	U	U	P	P	P	P	D	D	D	D	U	U
Upright Prairie Coneflower	Ratibida columnifers	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	Atriplex canescens	L/S	P	P	D	D	D	D	D	D	D	P	P	P
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	U	U
Prairie Sage	Artemisia	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: Wildlife
Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	U	U	U	U	U	U
Fourwing Saltbush	Atriplex canescens	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	D	U	U	U
Upright Prairie Coneflower	Ratibida columnifers	DP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Prairie Sage	Artemisia	L/S	U	U	D	D	D	D	D	D	D	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: **Chavez, De Baca, Guadalupe, Lincoln, San Miguel, Santa Fe, Torrance**

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: Chaves, De Baca, Guadalupe, Lincoln, Sna Miguel, Santa Fe, Torrance.

Characteristic Soils Are:	
Gabaldon	La Brier
La Fonda	Manzano
Prewitt	Riverwash
Other Soils included are:	
Tours	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	11/25/81	Donald H. Fulton	03/03/82

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	06/19/01	George Chavez	12/17/02