

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R039XC050NM

Site Name: Mountain Grassland

Precipitation or Climate Zone: 16 to 30 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on the north and northeast facing slopes at the lower elevation and on all exposures at the higher elevations. The site is located on open benchlands, fans or ridges between parks, valleys and mountain slopes. High mountain rims and valleys are included in this site. It often occurs on benches or depressed areas within the steeper slopes of the ponderosa pine. Slopes range from 0 to 20 percent but average less than 15 percent. Elevation ranges from 6,500 to 12,000 feet above sea level.

Land Form:

1. Fan
2. Ridge
- 3.

Aspect:

1. North and northeast at lower elevations
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	6,500	12,000
Slope (percent)	0	20
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 average annual precipitation ranges from 16 to 30 inches. Precipitation increases with elevation. Variations of five inches, more or less, are common. Nearly two-thirds of the precipitation falls in the form of high intensity-short duration thunderstorms, from March to October. Winter precipitation is mainly in the form of snowfalls of six to ten inches.

Mild summers and moderately cold winters characterize temperatures. Large seasonal and diurnal temperature changes occur. The average annual temperature is about 45 degrees F with extremes of 26 degrees F below zero in the winter to 100 degrees F in the summer.

The average frost-free season is 80 to 145 days. The last killing frost is in early May to early June and the first killing frost is in early September to early October.

Temperature and precipitation favor cool-season, perennial plant growth. However, the temperatures are warm enough in the lower elevations to allow the warm-season species to occupy an important part of this plant community.

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):	106	147
Freeze-free period (days):	134	175
Mean annual precipitation (inches):	16	30

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.66	1.68	16.3	49.2
February	0.58	1.90	19.4	53.3
March	0.71	1.55	23.1	60.2
April	0.69	0.99	28.1	67.6
May	0.66	1.27	34.6	75.8
June	0.51	2.50	42.2	85.3
July	1.87	6.13	46.8	87.0
August	1.96	5.89	46.0	83.3
September	1.73	2.91	40.5	77.4
October	1.02	2.64	31.2	68.0
November	0.55	1.66	24.0	57.1
December	0.72	2.25	16.1	50.5

Climate Stations:

Station ID	Location	Period	
		From:	To:
291440	Capitan, New Mexico	01/01/14	07/31/00
291931	Cloudcroft, New Mexico	09/01/87	12/31/01
297649	Ruidoso 2NNE, New Mexico	01/01/42	07/31/00
298015	Sandia Park, New Mexico	01/01/39	12/31/01
298018	Tijeras Ranger Stn, New Mexico	1971	2000

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:

The soils of this site are typically moderately deep and well drained over partially weathered igneous bedrock at about 30 to 50 inches, although pockets of deep soil also occurs. Surface textures are typically loams. Underlying layers vary from clay loam to clay at a depth of two to seven inches. Permeability is slow. Available water-holding capacity is high.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam

Surface Texture Modifier:

1. Cobble

2. Stone

3.

Subsurface Texture Group: Clayey

Surface Fragments <=3" (% Cover): N/A

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

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

Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Slow
Depth (inches):	30	>72
Electrical Conductivity (mmhos/cm):	N/A	N/A
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	N/A	N/A
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

This is a grassland site characterized by cool-season perennial mid-grasses. Woody species and forbs occupy a major role on this site.

Canopy Cover:

Trees	5 – 15 %
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	15 – 30
Bare ground	15 - 30
Surface gravel	0
Surface cobble and stone	10 – 25
Litter (percent)	15 – 25
Litter (average depth in cm.)	4

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	340	782	1,224
Forb	50	115	180
Tree/Shrub/Vine	110	253	396
Lichen			
Moss			
Microbiotic Crusts			
Total	500	1,150	1,800

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	ANGE	Big Bluestem	115 – 173	115 – 173
2	KOMA	Prairie Junegrass	230 – 288	230 – 288
3	SCSC	Little Bluestem	115 – 173	115 – 173
4	MUMO	Mountain Muhly	230 – 288	230 – 288
5	BLTR	Pine Dropseed	115 – 288	115 – 288
6	BOGR2	Blue Grama	58 – 115	58 – 115
7	MUWR	Spike Muhly	58 – 115	58 – 115
8	FEAR	Arizona Fescue	58 – 115	58 – 115
9	BRMA4	Mountain Brome	58 – 115	58 – 115
10	BOCU	Sideoats Grama	173 – 230	173 – 230
11	PASM	Western Wheatgrass	115 – 173	115 – 173
12	2GRAM	Other Grasses	58 – 115	58 – 115

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
13	IRIS	Iris spp.	0 – 58	0 – 58
14	ACMI2	Western Yarrow (Common)	0 – 58	0 – 58
15	LATHY	Peavine spp.	0 – 58	0 – 58
16	VICIA	Vetch spp.	0 – 58	0 – 58
17	2FORB	Other Forbs	0 – 58	0 – 58

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
18	QUERC	Oak spp.	58 – 115	58 – 115
19	JUNIP PIED PIPO	Juniper spp. Pinyon Pine Ponderosa Pine	0 – 230	0 – 230
20	CEMOP	Hairy Mountainmahogany	0 – 58	0 – 58
21	2SD	Other Shrubs	0 – 58	0 – 58

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: Kentucky bluegrass, muttongrass, sedges, redtop, New Mexico feathergrass, Letterman needlegrass, Canadian wildrye, sleepygrass, bottlebrush squirreltail, timothy, slender wheatgrass, wolftail, creeping muhly, orchardgrass, nodding brome and Indiangrass.

Other woody species that could appear on this site include: rubber rabbitbrush, broom snakeweed, pingue, snowberry, fringed sagewort, cliffrose, skunkbush sumac, fourwing saltbush, New Mexico locust, mountain ash and rose.

Other forbs that could appear on this site include: lupine, locoweed spp., trailing fleabane, aster spp., goldenrod and geranium.

Plant Growth Curves

Growth Curve ID 1601NM

Growth Curve Name: HCPC

Growth Curve Description: Cool-season perennial mid-grass grassland with components of 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 elk, deer, mountain lion, black bear, gray fox, porcupine, chipmunk, red and rock squirrels, eagle, great horned owl, turkey, harlequin quail, band-tailed pigeon, Stellar's jay, pinyon jay, junco, woodpecker, hummingbird, Sacramento Mountain salamander, short-horned lizard, garter and patches snakes and black-tailed rattlesnake.

Bald eagle hunts over this site and the Sacramento Mountain salamander may be resident under logs and rocks.

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
Monjeau	D
Nolton	D

Recreational Uses:

This site offers recreation potential for picnicking, camping, horseback riding, biking, nature observation and photography. Hunting opportunities include elk, deer, turkey, red squirrel, bear and mountain lion. The mountainous setting of the site enhances natural beauty.

Wood Products:

The potential for tree production is limited to a few scattered ponderosa pine and Douglas fir. Some Christmas trees can be cut in the fringed areas along the adjacent woodland. Scattered pinyon and juniper could be cut for fuelwood and/or fence material.

Other Products:

Grazing:

This site is suitable for grazing by all kinds and classes of livestock during late spring, summer and early fall. The length of the grazing season varies with elevation and from year to year with weather patterns. Although this site is suited to all kinds and classes of livestock, it is best suited to younger animals. To reduce spot-grazing and over grazing of flatter slopes, herding and/or construction of stock trails are recommended. Continuous grazing during the grazing season will cause the more desirable species, such as Arizona fescue, mountain muhly, prairie junegrass, sideoats grama, western wheatgrass and oatgrass to decrease. There would be a corresponding increase in bare ground, Kentucky bluegrass, blue grama, oak, pinyon and juniper. Goats can be a good tool to help control brush species. This site responds best to a system of grazing that rotates the season of use in pastures.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.0 – 4.2
75 – 51	3.9 – 5.0
50 – 26	4.8 – 9.0
25 – 0	9.0+

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
Big Bluestem	Andropogon gerardii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	P	P	D	D	D
Mountain Muhly	Muhlenbergia montana	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Arizona Fescue	Festuca arizonica	EP	D	D	D	D	D	D	D	D	D	D	D	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	EP	D	D	D	D	D	D	D	D	D	D	D	D

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
Big Bluestem	Andropogon gerardii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	P	P	D	D	D
Mountain Muhly	Muhlenbergia montana	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Arizona Fescue	Festuca arizonica	EP	D	D	D	D	D	D	D	D	D	D	D	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	EP	D	D	D	D	D	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
Prairie Junegrass	Koeleria macrantha	EP	U	U	D	D	D	U	U	U	U	U	U	U
Pine Dropseed	Blepharoneuron tricholepis	EP	D	D	D	D	D	D	D	D	D	D	D	D
Arizona Fescue	Festuca arizonica	EP	D	D	D	D	D	D	D	D	D	D	D	D
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Oatgrass	Avena sativi	EP	D	D	D	D	D	D	D	D	D	D	D	D
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Vetch	Vicia spp.	EP	D	D	P	P	P	P	P	P	D	D	D	D

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
Oak	Quercus spp.	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
Hairy Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Iris	Iris spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Western Yarrow	Achillea millefolium	EP	U	U	D	D	D	D	D	D	D	D	D	U
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Vetch	Vicia spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Oak	Quercus spp.	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
Hairy Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Iris	Iris spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Western Yarrow	Achillea millefolium	EP	U	U	D	D	D	D	D	D	D	D	D	U
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Vetch	Vicia spp.	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: Lincoln, Otero, 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 Arizona and New Mexico Mountains 39 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy, Otero, Lincoln and South Chavez Soil Surveys.

Characteristic Soils Are:

Monjeau	Nolton
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Other Soils included are:

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Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	09/17/81	Don Sylvester	09/17/81

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	03/07/03	George Chavez	10/31/03