

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R048AY004NM

Site Name: Mountain Loam

Precipitation or Climate Zone: 15 to 30 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site is on steep to moderately steep slopes on benches within the steeper slopes of the surrounding ponderosa pine tree zone. The slope is to the southwest; south and southeast, making the site directly exposed to the dry south and southwest winds and more intensive heat from the sun. Slopes vary from 3 to 45 percent. Elevation ranges from 6,500 to 8,000 feet above sea level.

Land Form:

1. Mountain slope

2.

3.

Aspect:

1. Southwest

2. South

3. Southeast

	Minimum	Maximum
Elevation (feet)	6,500	8,000
Slope (percent)	3	45
Water Table Depth (inches)	60	>72
	Minimum	Maximum
Flooding:		
Frequency	Rare	Occasional
Duration	Very Brief	Very Brief
	Minimum	Maximum
Ponding:		
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Medium to very high.

CLIMATIC FEATURES

Narrative:

Annual precipitation varies from 15 to 25 inches on this site and of this amount approximately 30 percent occurs in the form of winter snows. Variations in both winter and summer precipitation may be quite extreme ranging from rather open, dry winters to winters during which several feet of snow are accumulated. Summer thunderstorm activity, which is greatest during July and August, is also very sporadic.

Air temperatures vary from a monthly mean of 19 degrees F in January to 68 degrees F in July. Mean monthly temperatures also vary elevationally. Winter low temperatures fall below the freezing mark much of the time from mid September through the first of June. Dates of the last killing frost vary elevationally. At lower elevations the last killing frost occurs around May 6th and at higher elevations June 22nd. Dates of the first killing frost vary from September 9th at higher elevations and October 11th at the lower elevations.

The freeze-free season ranges elevationally from 141 days at the lower elevations to 79 days at the higher elevations. About 50 percent of the precipitation falls in the form of rainfall during the freeze-free season. The precipitation pattern is beneficial to both cool-season and warm-season plants. The growing season lasts from 3 to 5 months extending from early May through October. Some cool-season plants begin their growth with snow recession and also enjoy a brief growing period in the fall.

Mountain winds have an effect on growing conditions within this site in their effect on increasing moisture losses and litter in the surface soil horizon. Availability of the moisture for plant growth is more of a limiting factor on this site than it is on site of higher elevations. Forage production is dependent upon both winter and summer moistures; and therefore, yields of forage fluctuate directly with the amount of precipitation. Evaporation rates vary with elevations within the site. Rates are generally lower at higher elevations and increase at lower elevations, particularly on southern and western exposures.

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>103</u>	<u>144</u>
Freeze-free period (days):	<u>127</u>	<u>169</u>
Mean annual precipitation (inches):	<u>15</u>	<u>30</u>

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.32	.88	14.2	46.8
February	.33	1.13	16.7	50.0
March	.62	1.79	20.4	55.7
April	.81	1.71	25.6	63.6
May	1.12	2.00	33.3	72.7
June	1.26	2.27	40.6	82.4
July	2.68	4.24	44.9	84.9
August	2.87	4.48	44.0	81.8
September	1.63	1.92	38.1	76.8
October	1.05	1.64	29.2	67.7
November	.56	1.15	20.3	55.6
December	.41	1.06	14.5	48.7

Climate Stations:

Station ID	Location	Period
291813	Cimarron 4SW, NM	From: 5/1/1904 To: 12/31/01
293488	Gascon, NM	From: 11/18/53 To: 12/31/01
296275	Ocate 1N, NM	From: 08/01/60 To: 12/31/01
296676	Pecos Ranger Station, NM	From: 01/01/16 To: 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:

The soils on this site are shallow to moderately deep and well drained. The surface texture is stony silt loam or cobbly loam. The subsurface is stony loam or cobbly loam. They have a moderate permeability. The available water-holding capacity is low. Effective rooting depth is from 20 to 40 inches. There is cobble or stone throughout the profile and on the surface. Air-water-plant relationship is fair.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

- | |
|---------------------|
| 1. Silty loam |
| 2. Gravelly loam |
| 3. Cobbly silt loam |
| 4. Loam |
| 5. Cobbly loam |
| 6. Stony silt loam |

Surface Texture Modifier:

- | |
|-----------|
| 1. Gravel |
| 2. Stone |
| 3. Cobble |

Subsurface Texture Group: Loamy

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

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

Subsurface Fragments <=3" (%Volume): 35 to 60

Subsurface Fragments >=3" (%Volume): 35 to 60

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Very slow	Moderately rapid
Depth (inches):	28	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	0.00	5.00
Soil Reaction (1:1 Water):	6.1	8.4
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	3	6
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 mixed grassland characterized by both cool-season and warm-season mid-grasses and bunch grasses and a minor amount of woody plants and forbs. Ponderosa pine or pinyon pine is widely scattered throughout the site. Grasses or grasslike plants make up approximately 90 percent of the total vegetative composition. Woody plants and forbs are evenly distributed and make up a minor portion of the plant community. Tree species associated with this site are ponderosa pine and pinyon pine. Overstory canopy is less than 2 percent.

Canopy Cover:

Trees	<2 %
Shrubs and half shrubs	5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	35
Bare ground	15
Surface gravel	5
Surface cobble and stone	20
Litter (percent)	20
Litter (average depth in cm.)	5

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	616	880	1,232
Forb	35	50	70
Tree/Shrub/Vine	35	50	70
Lichen			
Moss			
Microbiotic Crusts			
Total	700	1,000	1,400

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	MUMO	Mountain Muhly	130 – 150	130 – 150
2	BOCU	Sideoats Grama	130 – 150	130 - 150
3	SCSC	Little Bluestem	80 – 100	80 – 100
4	BOGR2	Blue Grama	80 – 100	80 – 100
5	FEAR	Arizona Fescue	80 – 100	80 – 100
6	PASM	Western Wheatgrass	80 – 100	80 – 100
7	MUWR BRMA4 AVSA	Spike Muhly Mountain Brome Oatgrass spp.	30 – 50	30 – 50
8	BLTR	Pine Dropseed	30 – 50	30 – 50
9	CAREX	Sedge spp.	30 – 50	30 – 50
10	ANGE KOMA LYPH	Big Bluestem Prairie Junegrass Wolftail	30 – 50	30 – 50
11	2GRAM	Other Grass	30 – 50	30 – 50

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	LATHY VICIA IRIS ACMI2	Peavine spp. Vetch spp. Iris spp. Western Yarrow	30 – 50	30 – 50
13	2FORB	Other Forbs	30 – 50	30 – 50

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	QUERC CEMOP PIPO PIED	Oak spp. Hairy Mountainmahogany Ponderosa Pine Pinyon Pine	30 – 50	30 – 50
15	2SD	Other Shrubs	30 – 50	30 – 50

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, galleta, vine-mesquite, bottlebrush squirreltail, threeawn spp., lupine, rubber rabbitbrush and sagebrush.

Plant Growth Curves

Growth Curve ID 3104NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed cool/warm-season mid/bunch grass grassland with minor components of shrubs and forbs.

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:

This site provides habitats, which support a resident animal community that is characterized by elk, heather vole, Gunnison's prairie dog, golden-mantled ground squirrel, pygmy owl, western bluebird and kingsnake. Mule deer use this site seasonally.

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
Carrick	C
Chrishall	B
Dalcan	C
Des Moines	C
Doslomas	C
Hesperus	B
Jarmillo	B
Millpaw	C
Ohwiler	B
Pastorius	B
Raton	D
Suposo	C

Recreational Uses:

This site provides limited recreation potential for hiking and horseback riding. The main limitation is the steep slope and stony soil surface. It also provides hunting for rabbits, deer and turkey.

Wood Products:

This site produces no wood products except for occasional fuel for campfires.

Other Products:

Grazing:

This site can be grazed from May until mid-October. It is better suited to a younger age of livestock due to the slope and the stony or cobbly surface. Distribution of domestic livestock is a problem on this site. All ages and classes of livestock tend to graze the flatter slopes leaving the steeper slopes ungrazed. Approximately 90 percent of the total annual yield are from species that furnish forage for livestock or grazing animals when accessible. This site generally greens up first in the spring due to the exposure of the south facing slopes. Continuous grazing during the grazing season will cause the more desirable forage plants such as mountain muhly, little bluestem, sideoats grama, Arizona fescue and western wheatgrass to decrease. The species most likely to invade this site are Kentucky bluegrass, broom snakeweed and pingue. Species most likely to increase from small amounts or trace amounts are blue grama, oak and forbs. As the ecological conditions deteriorate, it is accompanied by a sharp increase in blue grama. Most of the mid-grasses and bunch grass species will disappear as deterioration advances. In some areas there may be large patches of sleepygrass and a variety of annual and perennial forbs. Oak brush will also increase to the point where it is dominant. A system of deferred grazing, which varies the time of grazing and rest in the pastures during successive years, is needed to maintain or to improve a healthy, well-balanced plant community. Livestock distribution can be improved by use of mechanically constructed tails.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.5 – 5.0
75 – 51	3.4 – 5.6
50 – 26	4.3 – 9.8
25 – 0	9.8+

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
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Mountain Muhly	Muhlenbergia montana	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
Arizona Fescue	Festuca arizonica	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
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	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
Big Bluestem	Andropogon gerardii	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
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Vetch	Vicia spp.	EP	D	D	P	P	P	P	P	P	D	D	D	D
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sedge	Carex spp.	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
Mountain Brome	Bromus marginatus	EP	D	D	P	P	P	P	P	P	P	P	P	D
Mountain Muhly	Muhlenbergia montana	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
Arizona Fescue	Festuca arizonica	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
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	Blepharoneuron tricholepis	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
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	Avena sativi	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
Big Bluestem	Andropogon gerardii	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
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Hairy Mountainmahogany	Cercocarpus montanus	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Vetch	Vicia spp.	EP	D	D	P	P	P	P	P	P	D	D	D	D
Peavine	Lathyrus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sedge	Carex spp.	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
Mountain Brome	<i>Bromus marginatus</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Arizona Fescue	<i>Festuca arizonica</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
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Pine Dropseed	<i>Blepharoneuron tricholepis</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
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	D	D	D	D	D	D	U
Oatgrass	<i>Avena sativi</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
Sedge	<i>Carex spp.</i>	EP	U	U	D	D	D	U	U	U	U	U	U	U
Vetch	<i>Vicia spp.</i>	EP	D	D	P	P	P	P	P	P	D	D	D	D
Peavine	<i>Lathyrus</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Elk

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Brome	<i>Bromus marginatus</i>	EP	D	D	P	P	P	P	P	P	P	P	P	D
Mountain Muhly	<i>Muhlenbergia montana</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
Arizona Fescue	<i>Festuca arizonica</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
Prairie Junegrass	<i>Koeleria macrantha</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	<i>Blepharoneuron tricholepis</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
Little Bluestem	<i>Schizachyrium scoparium</i>	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Oatgrass	<i>Avena sativi</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
Big Bluestem	<i>Andropogon gerardii</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
Sideoats Grama	<i>Bouteloua curtipendula</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Hairy Mountainmahogany	<i>Cercocarpus montanus</i>	L/S	U	U	U	D	D	D	U	U	U	U	U	U
Vetch	<i>Vicia spp.</i>	EP	D	D	P	P	P	P	P	P	D	D	D	D
Peavine	<i>Lathyrus spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Sedge	<i>Carex spp.</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D

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
Hairy Mountainmahogany	<i>Cercocarpus montanus</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
Vetch	<i>Vicia spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Peavine	<i>Lathyrus spp.</i>	EP	U	U	D	D	D	D	D	D	U	U	U	U
Oak	<i>Quercus spp.</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

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: Colfax, Mora, Rio Arriba, Sandoval, San Miguel, Santa Fe, Taos

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 Rocky Mountains 48 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Colfax, Taos, Mora, San Miguel, and Santa Fe.

Characteristic Soils Are:

Carrick, Chrishall, Dalcan, Des Moines	Doslomas, Hesperus, Jarmillo, Millpaw
Ohwiler, Pastorius, Raton, Suposo	

Other Soils included are:

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Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	09/01/78	Don Sylvester	09/01/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	09/23/02	George Chavez	2/12/03