

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

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R048BY003NM

Site Name: Subalpine Grassland

Precipitation or Climate Zone: 16 to 30 inches

Phase: _____

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on high mountain tops above and extending down into parks within the spruce-fir zone. Aspen groves and colonies of Gambel oak may be scattered throughout the site. The landscape ranges from rolling to steep with side slopes ranging from 20 to 55 percent. Elevation ranges from 9,100 to 12,000 feet above sea level.

Land Form:

1. Mountainside
2. Mountain slope
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	9,100	12,000
Slope (percent)	20	55
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 is characterized by cold, wet winters in which more than 50 percent of the total annual precipitation is received during the winter. The balance of the precipitation is received in the summer months, some of it in the form of high intensity thunderstorms. Average annual precipitation is about 22 inches but ranges from 16 to 30 inches and yearly fluctuations are common.

The average frost-free period is about 80 days but ranges from 60 days at the highest elevations to 110 days at the lowest elevations; however, the period lengths vary. The average last killing frost in the spring occurs about June 10th. The average first killing frost in the fall occurs about September 20th. Average annual air temperature is 22.6 degrees F in January and 64.5 degrees F in July with extremes ranging from -40 degrees F to 95 degrees F.

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):	67	93
Freeze-free period (days):	95	115
Mean annual precipitation (inches):	16	30

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

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.67	1.91	2.1	39.7
February	0.61	1.70	7.0	44.1
March	1.01	1.85	14.5	50.5
April	0.97	1.75	21.8	60.1
May	0.99	1.79	28.7	69.9
June	0.83	1.29	35.0	80.6
July	1.81	2.90	40.8	85.2
August	2.34	3.18	40.2	82.1
September	1.25	1.98	32.9	76.1
October	0.96	1.72	22.5	65.7
November	0.74	1.37	13.5	51.3
December	0.70	1.79	4.8	41.9

Climate Stations:

		Period					
Station ID	<u>291664</u>	Location	<u>Chama, New Mexico</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>292700</u>	Location	<u>Eagle Nest, New Mexico</u>	From:	<u>11/01/37</u>	To:	<u>12/31/01</u>
Station ID	<u>292837</u>	Location	<u>El Vado Dam, New Mexico</u>	From:	<u>09/01/23</u>	To:	<u>12/31/01</u>
Station ID	<u>297323</u>	Location	<u>Red River, New Mexico</u>	From:	<u>01/01/15</u>	To:	<u>12/31/01</u>

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 are moderately deep to deep but may be high in surface cobbles and stones and give the impression of being shallow. Surface textures range from loams and clay loams to cobbly and/or stony loams and clay loams. Subsoils range from clay loams and clays. Permeability is moderate to slow. Runoff is medium to slow, depending on vegetative cover and surface cobble and stones. Available water-holding capacity is moderate to high.

Parent Material Kind: Colluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam

2. Clay loam

3. Cobbly loam

4. Cobbly clay loam

5. Stony loam

6. Stony clay loam

Surface Texture Modifier:

1. Cobble

2. Stone

3.

Subsurface Texture Group: Clayey

Surface Fragments $\leq 3''$ (% Cover): 15 to 60

Surface Fragments $> 3''$ (% Cover): 15 to 60

Subsurface Fragments $\leq 3''$ (%Volume): 15 to 60

Subsurface Fragments $> 3''$ (%Volume): 15 to 60

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Moderately slow
Depth (inches):	60	> 72
Electrical Conductivity (mmhos/cm):	0.00	0.00
Sodium Absorption Ratio:	0.00	0.00
Soil Reaction (1:1 Water):	4.5	7.8
Soil Reaction (0.1M CaCl₂):	N/A	N/A
Available Water Capacity (inches):	6	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 primarily a grassland site with scattered Gambel oak and other shrub colonies, aspen groves and occasional trees. Forbs are present throughout, but are a minor component on the site.

Canopy Cover:

Trees, shrubs and half-shrubs (average)	5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	45
Bare ground	10
Surface gravel	2
Surface cobble and stone	8
Litter (percent)	35
Litter (average depth in cm.)	6

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	1,020	1,275	1,530
Forb	72	90	108
Tree/Shrub/Vine	72	90	108
Lichen			
Moss			
Microbiotic Crusts			
Total	1,200	1,500	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	FEAR2 FETH	Arizona Fescue Thurber Fescue	375 – 525	375 – 525
2	CAREX	Sedge spp.	150 – 225	150 – 225
3	MUMO	Mountain Muhly	75 – 105	75 – 105
4	ACNEN2	Columbia Needlegrass	75 – 105	75 – 105
5	POFE	Muttongrass	75 – 105	75 – 105
6	BRMA4	Mountain Brome	75 – 105	75 – 105
7	BLTR PASM FEOV MUWR	Pine Dropseed Western Wheatgrass Sheep Fescue Spike Muhly	75 – 105	75 – 105
8	AVSA KOMA SCSC ELEL5 2GRAM	Oatgrass spp. Prairie Junegrass Little Bluestem Bottlebrush Squirreltail Other Grasses	45 – 105	45 – 105

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	ACMI2 IRMI LUPIN TRIFO DECO3 ? 2FORB	Western Yarrow (Common) Rocky Mountain Iris Lupine spp. Clover spp. Larkspur Alumroot Other Forbs	45 – 120	45 – 120

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	QUGA	Gambel Oak	15 – 45	15 – 45
11	RHTR DAFI3 RIMO2 AMUT SYAL	Skunkbush Sumac Shrubby Cinquefoil Currant Serviceberry Snowberry	15 – 45	15 – 45
12	ARFR4 ARGL9 2SD	Fringed Sagewort Cudweed Sagewort Other Shrubs	15 – 45	15 – 45

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 on this site include: tufted hairgrass, letterman needlegrass, sleepygrass, slender wheatgrass, redtop, alpine timothy, monkshood, dandelion, cowparsnips, geranium, wildrose, quaking aspen, elderberry, roseberry, Engelmann spruce and bristle cone pine.

Plant Growth Curves

Growth Curve ID 3303NM

Growth Curve Name: HCPC

Growth Curve Description: Grassland with minor 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:

This site provides habitats, which support a resident animal community that is characterized by Rocky Mountain bighorn, sheep, montane vole, yellow-bellied marmot, pika, mountain bluebird and white-tailed ptarmigan. There is seasonal use by elk, deer, prairie falcon, white-crowned sparrow and rosy finches.

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
Ess	B
Penitente	B

Recreational Uses:

This site occurs in a beautiful mountain setting with expansive views of lower-lying areas. However, the site is limited in its accessibility.

Wood Products:

This site produces no significant amounts of wood products on a sustained yield basis. Harvesting of wood products is limited by the location of the site.

Other Products:

Grazing:

Approximately 90 percent of the vegetation produced on this site are suitable for use by domestic livestock and wildlife. Season of use is limited to late spring through early fall due to heavy winter storms. Due to the steepness of slope and season of use, this site is better adapted for use by yearlings than by cows and calves. Herding to and from these sites when adjacent to heavy woodlands insures utilization of the site. Herding, salting and trail construction can improve grazing distribution of the site.

Deterioration of the potential plant community is indicated by a decrease in Arizona fescue, mountain muhly, Columbia needlegrass, bluegrass spp., mountain brome and sheep fescue. Species that increase include sedges, Thurber fescue, bottlebrush squirreltail, forbs and woody species such as Gambel oak and quaking aspen. A planned grazing system with periodic grazing and rest during the grazing season is best to maintain the natural balance between plant species and to maintain high productivity.

This site is seasonally suited to elk and small mammals in addition to domestic livestock.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	2.1 – 2.7
75 – 51	2.6 – 4.1
50 – 26	4.0 – 8.1
25 – 0	8.1+

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
Arizona Fescue	<i>Festuca arizonica</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	D	D	D	P	P	P	D	D	D	D	D	D
Muttongrass	<i>Poa fendleriana</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Mountain Muhly	<i>Muhlenbergia montana</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Columbia Needlegrass	<i>Achnatherum nelsonii</i>	EP	D	D	D	P	P	P	D	D	D	D	D	D
Spike Muhly	<i>Muhlenbergia wrightii</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pine Dropseed	<i>Blepharoneuron tricholepis</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Bluegrass	<i>Poa spp.</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Mountain Brome	<i>Bromus marginatus</i>	EP	D	D	P	P	P	P	P	P	P	P	P	D
Sheep Fescue	<i>Festuca ovina</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Tufted Hairgrass	<i>Deschampsia caespitosa</i>	EP	D	D	P	P	P	P	P	P	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
Muttongrass	<i>Poa fendleriana</i>	EP	P	P	P	P	P	P	P	P	P	P	P	P
Pine Dropseed	<i>Blepharoneuron tricholepis</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	<i>Muhlenbergia wrightii</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Mountain Muhly	<i>Muhlenbergia montana</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Bluegrass	<i>Poa spp.</i>	EP	D	D	P	P	P	D	D	D	P	P	P	D
Mountain Brome	<i>Bromus marginatus</i>	EP	D	D	P	P	P	D	D	D	D	D	D	D
Western Wheatgrass	<i>Pascopyrum smithii</i>	EP	U	U	D	D	D	D	D	D	D	D	D	U
Sheep Fescue	<i>Festuca ovina</i>	EP	D	D	D	D	D	D	D	D	D	D	D	D
Tufted Hairgrass	<i>Deschampsia caespitosa</i>	EP	D	D	P	P	P	P	P	P	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
Fringed Sagewort	<i>Artemisia frigida</i>	L/S	D	D	D	U	U	U	U	U	U	U	D	D

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
Willow	Salix spp.	L/S	D	D	U	U	U	D	D	D	D	D	D	D
Bromegrass spp.	Bromus spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Fescue spp.	Festuca spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Needlegrass	Achnatherum spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Rush	Juncus spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Clover	Trifolium spp.	EP	P	P	P	P	P	P	P	P	P	P	P	P
Marigold spp.	Baileya spp.	EP	U	U	D	D	D	D	D	D	D	D	D	U
Dandelion	Agoseris	EP	U	U	P	P	P	D	D	D	D	D	D	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
Serviceberry	Amelanchier utahensis	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Hairy Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Aspen	Populus spp.	L/S	D	D	P	P	P	P	P	P	D	D	D	D
Elderberry	Sambucus nigra	L/S	U	U	P	P	P	P	P	P	U	U	U	U
Astragalus	Astragalus spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Lupine	Lupinus alpestris	EP	U	U	D	D	D	D	D	D	U	U	U	U
Penstemon	Penstemon spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	Castilleja coccinea	EP	U	U	D	D	D	D	D	D	U	U	U	U
Dandelion	Agoseris spp.	EP	U	U	P	P	P	D	D	D	D	D	D	U
Geranium	Geranium spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Balsamroot (Arrowleaf)	Balsamorhiza sagittata	EP	U	U	P	P	P	P	P	P	U	U	U	U
Dock	Rumex spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Clover	Trifolium spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Phlox	Phlox 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: McKinley, Rio Arriba, Sandoval, Santa Fe, Taos

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes No

General Legal Description: _____

Relationship to Other Established Classifications:

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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. Taos, Santa Fe, Rio Arriba, Los Alamos, and Sandoval county surveys.

Characteristic Soils Are:

Ess	Penitente

Other Soils included are:

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Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	03/23/82	Don Sylvester	03/23/82

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	02/26/03	George Chavez	10/31/03