RABBIT MOUNTAIN

Management Plan

- 1. General Description of Property
- 2. Management Objectives
- 3. Description of Property
 - 3.A. Physical Characteristics
 - 1. Location
 - 2. Climate
 - 3. Topography
 - 4. Geology
 - 5. Soils
 - 6. Hydrology
 - 3.B.

.

- Biological Environment 1. Ecosystem
 - 2. Flora
 - 3. Fauna
- 3.C. Cultural Environment
 - 1. Prehistory
 - 2. Recent History
- 3.D. Current Use
 - 1. Acquisition/Lease Schedule
 - 2. Easements

4. Management Considerations4.A. Protection of Resource, Visitors & Neighbors

- 4.B. Resource Management
 - 1. Forest Management
 - 2. Range Management
 - 3. Wildlife Management
- 4.C. Recreation/Education
 - 1. Outdoor Recreation
 - 2. Special Recreation Use
 - 3. Environmental Education
- 5. Bibliography
- 6. Appendices
 - 1. Plants
 - 2. Birds
 - 3. Mammals

(Adopted 1984)

1. GENERAL DESCRIPTION OF PROPERTY

Rabbit Mountain is situated on a peninsula of mountain topography which extends from the foothills out into the plains. In addition to being the easternmost point of the foothills in Boulder County, the Rabbit Mountain area is unique with six overlapping County Comprehensive Plan designations. These include a scenic area, a county landmark, a critical wildlife habitat, mule deer winter range, critical plant association and an archaeologically sensitive area.

Located approximately five miles northwest of Longmont, the Rabbit Mountain ridgetop provides a panoramic view of the Continental Divide, Front Range and Great Plains. As a natural landmark it is visible from parts of Larimer, Weld and Boulder Counties.

Two critical plant associations on the property have been identified through the Colorado Natural Heritage Inventory program. Both associations are of state-wide and local concern.

There is a wide diversity of wildlife in the area including numerous songbirds, raptors, small mammals, big game species and prairie rattlesnakes. Three uncommon species of birds and white-tailed deer combine to give Rabbit Mountain a critical wildlife habitat designation in the County Comprehensive Plan.

Rabbit Mountain has been widely recognized as an important geologic area because of its diversity of features within a small area. The Blue Mountain-Little Thompson fault is but one significant feature which crosses the property and extends into Larimer County where an adjacent landowner had it registered as a Colorado Natural Area.

Preliminary surface surveys support the belief that the Rabbit Mountain area was an important habitation site for Indians. Research is on-going to further our understanding of these early county residents.

⁻ 2. MANAGEMENT OBJECTIVES

The goals and policies of the County Comprehensive Plan were revised and updated in December, 1983. Those goals of particular relevance to the Rabbit Mountain property include:

- B.1 Unique or distinctive natural features and systems and cultural features and sites should be conserved and preserved in recognition of the irreplaceable character of such resources and their importance to the quality of life in Boulder county. Other resources should be managed in a manner which is consistent with sound conservation practices, while enhancing compatibility between natural and man-made characteristics.
- B.3 Critical wildlife habitats should be conserved and preserved in order to avoid the depletion of wildlife and to perpetuate and encourage a diversity of species in the county.
- B.4 Critical plant associations and rare plant sites should be conserved and preserved to encourage a diversity of plant types within the county and to perpetuate the species.
- C.1 Provision should be made for open space to meet human needs throughout the county in order to protect and enhance the quality of life and enjoyment of the environment.
- C.2 Adequate parks and recreation facilities should be encouraged throughout the County and should be integrated whenever suitable with public facilities.
- C.3 Open space should be promoted as an urban-shaping method and as a means of protecting from development those areas which have significant environmental, scenic or cultural value.
- C.4 A County-wide trail system shall be promoted to serve transportation and recreation purposes.

In accordance with these adopted goals, the management objectives for the Rabbit Mountain property include:

- 1. protect those plant and wildlife species which contributed to the critical designations in the County Comprehensive Plan;
- 2. preserve the historical, geological and archaeological integrity of area;
- 3. retain as a natural open space buffer separating development in Boulder and Larimer counties;
- 4. manage as a wildlife sanctuary by encouraging and developing natural feed, cover, nesting and resting areas where appropriate;
- 5. restore range conditions from predominantly fair to good and excellent range classes;
- 6. preserve and encourage regeneration of the ponderosa pine forest;

- 7. provide, where appropriate, on-site environmental education opportunities for the public and develop examples and demonstrations of the environmental ethic and proper land stewardship;
- 8. provide, as appropriate, outdoor recreation opportunities which are of a passive nature and which require minimal development of the open space;
- 9. jointly develop protective measures with the Northern Colorado Water Conservancy District to warn public and lessen hazards of the supply canal;

4

10. provide a good neighbor policy to adjacent landowners.

3. DESCRIPTION OF PROPERTY

3.A. Physical Characteristics

3.A1 Location

.

Rabbit Mountain, elevation 5400' to 6060' above sea level, is a tract of land in Sections 3, 10 and 11 in Township 3 North, Range 70 West, of the 6th P.M., Boulder County Colorado. It is situated in north central Boulder County and lies between State Hwy. 66 and the Larimer County line, northeast of Lyons and northwest of Longmont (see Map A). The actual top of Rabbit Mountain only reaches an elevation of 6006' and is on private land adjacent to that owned by the County.

3.A2 Climate

Specific temperature and precipitation data for the Rabbit Mountain area is not available. Differences in altitude and exposure, however, generally create some variations in both temperature and precipitation. Temperatures are likely to be slightly cooler at higher elevations of the property, and northern exposures slightly cooler than southern exposures. Mean annual air temperature is estimated to be between 47° and 51°F, and the average frostfree period should range from 140 to 155 days.

The overall climate of the area is semi-arid with warm summers and mild to cold winters. Annual precipitation for the region ranges from about 16" to 20". Normally, there is a May precipitation maximum and a midwinter minimum. The spring precipitation falls as rain or wet, heavy snow, while the summer moisture can vary from gentle showers to locally severe hail and electrical storms. Some sign of lightning strikes on the pine trees has been observed. Winter storms can be accompanied by warm, drying chinook winds with little snow or by occasional blizzard conditions with deep and rapid accumulations of snow.

Relative humidity in the area averages from 30 to 35% in the summer to 40 to 50% during the winter months. The relatively arid conditions contribute to a high rate of evaporation.

Winds also are quite common due to the unique location of Rabbit Mountain the Little Thompson Canyon on the north, plains on the east and Dowe Flats to the south. The warm chinook winds can be characterized by speeds of 50 to 100 mph.

3.A3 Topography

Rabbit Mountain lies on the boundary of two great physiographic provinces - the Great Plains and the Southern Rocky Mountains Province. The property is in the foothills zone of the Front Range, where the mountains rise abruptly above the plains. The area lies in a topographic zone two to four miles wide that is characterized by long, parallel north-south ridges separated by valleys. The gradual rising of slopes on the east side of the ridges and the shorter, steeper back slopes to the west produce the characteristic "hogback" appearance of the ridges.

The topographic relief of the County property is 660' with the high point (6060') on the hogback in the northwest corner and low point (5400') in the southwest corner. The top of Rabbit Mountain, which is on private land, reaches an elevation of 6006 feet, and is conspicuous because it is surrounded by lower land on three sides. The northwest side of Rabbit Mountain is joined

(MAP Á).



to the County property and the foothills to the west. Dowe Flats, a broad valley approximately one and one-half miles wide, lies southwest of Rabbit Mountain and is surrounded on three sides by mountains.

3.A4 Geology

;(

Rabbit Mountain is a geographically complex area, with a number of interesting structural features. The rocks of the property are sedimentary that is, rocks which have formed from pre-existing materials. The oldest rocks are part of a unit known as the Morrison formation and consist of sandstone, limestone, shales and clays. The rocks were formed approximately 140 million years ago from sediments that were laid down on ancient floodplains and large freshwater lakes. Following this, the land was inundated by a great interior sea that covered the area for millions of years, depositing over 8000 feet of sediment. These sediments compacted to form several of the formations found on the Rabbit Mountain property - the Dakota, Benton and Niobrara formations. They are made up of a variety of rock types, including sandstone, limestone and shale. The formations were exposed when the sea drained off and the entire area pushed up during the great Rocky Mountain uplift that began 70 million years ago. After millions of years, the upward movements ceased and streams proceeded to wear down the landscape. Erosion has been the primary force acting on the mountains since the uplift, and alluvial material from streams and landslides has been left behind on portions of the Rabbit Mountain property.

Rocks deposited as flat-lying sedimentary layers have been tilted and dip gently to the east. The westward slopes descend more abruptly from the sharp crest. These "hogbacks" have formed long, parallel north-trending ridges. The dips of the formations flatten out east of the hogbacks, merging into the plains. The ridges are separated by parallel valleys that have formed in the weaker, less resistant formations.

During the Rocky Mountain uplift, the rocks were not only tilted, but the layers folded and faulted. Rabbit Mountain itself is an eroded anticline. Anticlines form when forces deep within the earth compress the rock, forcing it to bulge upward. The Rabbit Mountain anticline is peculiarly different from the other nearby anticlines in that the east side is much steeper than the west side. The Dowe Flats portion of the property is a syncline - a trough-like downfold of the rock layers that has produced a broad valley. Anticlines and synclines' alternate and generally occur in a northwestsoutheast direction in the area. Folding has formed successive offsets of the local Front Range foothills, and in the Rabbit Mountain area the foothills deviate approximately 30° to the east of their normal north-south trend.

Faulting of rock layers has also occurred in the area. A fault is simply a break in the rock along which movement has taken place. Faults and the sediments overlying over them form some of the dominant structural features of the area. A major fault is believed to extend across the north end of Rabbit Mountain and Dowe Flats, with several smaller faults present on the Rabbit Mountain property. Faults have resulted in the repetition of several rock layers to the east. Both folding and faulting have produced the geologic complexity of the area.

The geology of the Rabbit Mountain area has been mapped in detail by the University of Colorado Geology Department, and it is considered to be an ideal area to examine a variety of geologic formations (see Map B).

3.A5 Soils

Soils are the upper part of the mantle rock which furnishes the substances for plant growth. The development of soil is a complex interplay of weathering and biologic processes. There are many different types of soils. At first it was thought that the parent rock determined the soil type. Climate is now considered more important to soil type development than is parent rock, but the situation is complex and other factors (particularly the type of vegetation) are involved. Since it takes a few hundred years for a soil to develop, conservation is very important. A combination of shallow soils, reduced vegetation and wind can dramatically increase soil erosion.

The soils of Boulder County have been described and classified by the United States Department of Agriculture Soil Conservation Service. With one exception, all of the soils in the Rabbit Mountain area (see Map C) are loams - soils composed of clay, silt and sand and organic material in varying The predominant soil type on Rabbit Mountain is the Baller stoney amounts. sand loam (BaF). In Boulder County, the Baller series forms on the east slopes of ridges. Large amounts of stone are on the surface and throughout There are small areas of rock outcrop present near ridgetops. the soil. Soils tend to be shallow and well-drained, and slopes are 9 to 35%. Runoff is rapid on this soil, and the erosion hazard is high. Acreage is usually in native grass.

The Sixmile stony loam (SmF) occurs in the northern part of the Rabbit Mountain property. These soils formed on upland ridges and side slopes in calcareous loamy residuum weathered from shale. Included with this soil are narrow bands of rock outcrop and rock escarpments. Also included near the base of slopes are small areas of colluvial land. Sixmile stony loam has moderate permeability, and slopes are 10 to 50%. Runoff is rapid and the erosion hazard is high. Soils are moderately deep and are well-drained. In Boulder County, Sixmile soils support native range.

An elongate, narrow strip of the Nunn clay loam (NuD) occurs in the north-central area of the property. Nunn soils formed on terraces and valley side slopes in loamy alluvium, and they are deep and well-drained. Runoff is rapid on the Nunn clay loam, permeability is slow and the erosion hazard is high. Slopes range from 5 to 9%. Most Boulder County acreage of this soil is used for irrigated and dryland crops and for pasture.

Two additional soils belonging to the Nunn series occur on the Rabbit Mountain property. Although all three are called Nunn clay loams and are deep, well-drained soils that formed on terraces and valley side slopes in loamy alluvium, they differ in several ways. One of the remaining Nunn clay loams (NuB) occurs on the western part of the property, and has slopes of 1 to 3%. Runoff is medium on this soil, permeability slow and the erosion hazard moderate. Most Boulder County acreage of this soil is used for irrigated crops and pasture, and the rest for dryland crops.

The other Nunn clay loam (NuC) occurs on both the eastern and western portions of the Rabbit Mountain property, and has slopes of 3 to 5%. Runoff



Legend for Geology Map

(MAP B

Jm - Morrison Formation (Upper Jurassic) Klp - Dakota Group (Lower Cretaceous) Plainview Sandstone Member of the South Platte Formation and the Lytle Formation Undivided Ksm - Dakota Group (Lower Cretaceous) Middle Shale Member of the South Platte Formation Ksf - Dakota Group (Lower Cretaceous) First Sandstone Member of the South Platte Formation Kb - Benton Shale Undivided (Upper and Lower Cretaceous) Knf - Niobrara Formation (Upper Cretaceous) Fort Hays Limestone Member Kns - Niobrara Formatin (Upper Cretaceous) Smoky Hill Shale Member Qtg - Gravel Deposits on Terraces and Pediments (Quaternary) Qc - Colluvium and Alluvium Undivided (Quaternary) Syncline [Variable] Anticline Contact - Solid where exposed; dashed where unexposed; dotted where concealed under younger units. Fault or fracture zone - Dashed where approximately located; queried whre inferred; dotted where concealed. Well D-Springs



•

is medium on this soil, permeability is slow and the erosion hazard moderate. Most Boulder County acreage of this soil type is used for irrigated and dryland crops and for pasture. Some areas located near Longmont are being converted to urban uses.

Irregularly-shaped areas of the Valmont cobbly clay loam (VcC) are found along the eastern and western boundaries of the property. This soil formed on old high terraces and benches in gravelly and cobbly loamy alluvium. They are deep and well-drained, and slopes range from 1 to 5%. Runoff is medium, permeability is moderately slow and the erosion hazard slight to moderate. This soil is not well-suited to cultivation because it has too many cobblestones and too much gravel on its surface. It is, however, a good grassproducing soil. Most Boulder County acreage of this soil is used for native range, and a few small areas for irrigated pasture.

A similar soil, the Valmont clay loam (VaB) is found on a small eastern corner of the Rabbit Mountain property. This soil is situated on terraces and fans, and slopes range from 1 to 3%. Runoff is medium, and the erosion hazard moderate. Most Boulder County acreage of this soil tpye is used for irrigated and dryland crops and for pasture.

The Laporte very fine sandy loam (LaE) is on the western edge of the property and forms on tops and sides of upland ridges in loamy residuum derived from limestone and limey shale. Slopes are 5 to 20%, and runoff is medium to rapid. Soils are shallow and well-drained, and the erosion hazard is high. This soil is too shallow to be cultivated. Nearly all of the LaE acreage in Boulder County is in range or pasture.

Small acreages of two Gaynor series soils occur in the southwestern corner of the Rabbit Mountain property. These soils formed on uplands in loamy alluvium and windlaid materials. They are moderately deep and welldrained. A very small area of Gaynor silty clay loam (GaB) is found on the extreme southwestern corner of the property. This soil is characterized by slopes of 1 to 3%, medium runoff and a slight to moderate erosion hazard. All of the acreage of this soil in Boulder County is used for irrigated and dryland crops. Another Gaynor silty loam (GaD) occurs east of GaB on Rabbit Mountain. This soil has 3 to 9% slopes, runoff is rapid and the hazard of water erosion and soil blowing is high. Almost all of the Boulder County acreage of this soil is used for irrigated crops and for pasture. A few small areas are used for dryland crops.

The only remaining soil (and only one that is not a loam) is the Terrace Escarpment (Te). Located on the eastern part of Rabbit Mountain, these soils are on side slopes of old outwash fans and terraces. They consist of undifferentiated shallow soils that have many cobbles and stones on the surface. Soils may be somewhat deeper near the bottom of slopes. Runoff is rapid, and the erosion hazard high. Terrace escarpments take in water slowly, but in places intake of water is influenced by the amount of stones and cobbles on the surface. Only limited moisture is available for plants because the undifferentiated soils are shallow. In Boulder County, Terrace escarpments are not suited to cultivation, but used instead for native range.

3.A6 Hydrology

Streams on the Rabbit Mountain property are intermittent - mainly gullies that contain water only during periods of melting snow or heavy rains. Most of the erosion occurring in the area is due to these intermittent streams.

The Rabbit Mountain property falls within two watersheds - the Little Thompson River Basin and the St. Vrain Creek Basin. St. Vrain Creek lies approximately two miles south of the property, and runoff from Dowe Flats and Rabbit Mountain flows into natural drainages that empty into the river. The St. Vrain is a tributary of the South Platte River, and all but a few square miles of its headwaters lie within the mountains in western Boulder County. The St. Vrain Creek Basin occupies most of the northern half of the County.

Historically, flooding has occurred on the St. Vrain Creek. Although some of these floods have done extensive damage in the floodplain, the Rabbit Mountain property does not lie within an area subject to hazardous flooding.

The Little Thompson River lies just north of the Rabbit Mountain Gullies and ravines located on the northeast part of the property property. drain into the Little Thompson. The river is a tributary of the Big Thompson River, and it drains an area of approximately 200 square miles. The headwaters of the Little Thompson River lie at the eastern edge of Rocky Mountain National Park near Twin Sisters Peak, and the river drains areas along the northern edge of the County before emptying into the South Platte River. The Little Thompson River has flooded local areas in the past, but little historical data is available. This is probably due to its rural nature, which has resulted in little real property damage during flood events. Floodplain information is not currently available for the Rabbit Mountain property, because it is located outside of the upstream limits of previous study areas. Given the nature of the topography of the property and location of boundary lines, it seems unlikely that flooding in the Little Thompson River would have adverse impacts on Rabbit Mountain.

Much of the precipitation that falls in the area returns to the atmosphere by evapotranspiration. Runoff makes its way to either the St. Vrain Creek or the Little Thompson River. Some of the water seeps into the ground and recharges the aquifers - layers of permeable rock that store varying amounts of water. Some years ago, an exploratory oil and gas well was drilled to a depth of 1571 feet in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 10, T3N, R7OW. Although no oil was found, the well penetrated two rock formations that are considered to be aquifers in Boulder County (see Map B). The Dakota formation was penetrated at a depth of 662 feet, and although excessive concentrations of hardness are a problem, this aquifer is generally considered suitable for a water supply. Well yields of the Dakota are medium to small (5-100 gallons per minute to less than 15 gallons per minute). Excessive concentrations of dissolved solids, trace elements and bacteria have been problems locally in Boulder County.

A second aquifer - the Lyons formation - was hit at a depth of 1402 feet. The Lyons aquifer is generally suitable for use as a drinking water supply, hardness is a problem. Excessive concentrations of dissolved solids, sulfate and bacteria are also problems locally. Well yields of the Lyons aquifer are small; less than 15 gallons per minute.

Seven natural springs have been located on the Rabbit Mountain property (see Map B). Each has a varying amount of seepage depending on season and general climatic conditions.

The St. Vrain Supply Canal crosses the Rabbit Mountain property (mostly underground) in a northeast-southwesterly direction, carrying water **div**erted from Carter Lake. The canal was constructed in 1954 as a part of the Colorado-Big Thompson Project (C-BT). Initiated in 1938, the C-BT began with the construction of the Green Mountain Dam above Kremmling on the western slope of the Continental Divide. Since the plentiful water supply (primarily snowmelt) was on the west and could not be brought over or around the mountains, the only workable option was to bore through the Continental Divide. Water could then be brought to the fertile land on the east slope. The first water was delivered through the 13 mile Adams Tunnel in 1947 for storage and distribution. All authorized features of the C-BT project were completed by 1959.

On the east slope of the Divide, six major reservoirs are connected by a series of tunnels, canals and siphons. Operation and maintenance of all water conveyance facilities south of Carter Lake and north of Horsetooth Reservoir were transferred to the Northern Colorado Water Conservancy District in 1956. All other facilities are operated and maintained by the Bureau of Reclamation.

The Northern Colorado Water Conservancy District allocates and distributes Big T and Windy Gap water to some 125 water user organizations which operate 60 reservoirs and many distribution canals, including the St. Vrain Supply Canal. The Supply Canal consists of nearly 100 miles of water conveyance canals interspersed with tunnels, chutes and inverted siphons. The Canal tunnel openings that are located on the Rabbit Mountain property are surrounded by a four-strand, barbed-wire fence and signs warning of the potentially dangerous conditions.

3.B Biological Environment

3.B1 Ecosystem

Few ecosystems can truly be referred to as undisturbed by man. Rabbit Mountain has had its share of disturbances in the past including timbering, fire, plowing and grazing. A few species of plants have endured and are now identified as indicators of specific ecosystems.

The Plains ecosystem is found at the lower grassland sites and is characterized by blue grama, buffalo-grass, needle-and-thread, sand dropseed, side-oats grama, western wheatgrass, June-grass and red three-awn.

The Foothills ecosystem is predominant from 5700 to 7000 feet. It is characterized by mountain mahogany at the lower elevations and ponderosa pine with mixed grasslands at the higher elevations. Scenic vistas of the front range and the plains have placed heavy development pressure on the foothills ecosystem.

3.B2 Flora

The Rabbit Mountain property lies primarily within the foothills vegetation zone with some spill-over from the plains grasslands. Plant density is relatively sparse and consists principally of coarse grasses, herbaceous growths and trees typical of the dry, rocky soil of the foothills belt. A distant relationship between the vegetation and the underlying rock can be noted. On the dip slopes of the hogback ridges, the thin sandy soil which was derived from sandstone favors the growth of pine trees. Bunch grasses, shrubs and cacti serve as understory. On the eroded slopes of these ridges, buck brush and herbaceous growth is the dominant vegetation. Grasses cover the remainder of the property.

A vegetation survey done in 1984 revealed that 8.5% of the property is forested, 33.5% is predominantly shrubland and 58% is dominated by grasses. Map D illustrates the distribution of the three main vegetation types. Additional data generated includes:

I. Forest - 95 acres

A. Species

- 1. Ponderosa pine (Pinus ponderosa) 95%
- 2. Rocky Mountain juniper (Juniperus scopulorum) 5%
- B. Statistics
 - 1. 8.48 inch avg. diameter; 20.5 inch largest DBH
 - 2. 14 ft. avg. height; 42 ft. tallest
 - 3. 157 trees per acre
 - 4. 62.2 sq. ft. avg. basal area per acre
 - 5. 86 avg. age; oldest 346
 - 6. General tree condition is fair to poor
 - 7. 1 dead tree per 8 acres
 - 8. Little or no disease or insect problems
- C. Reproduction
 - 1. Little or no reproduction is occurring
 - 2. Good cone crops
 - 3. No topsoil or poor soil conditions
- II. Shrubs 375 acres
 - A. Primary species
 - 1. Three-leaf sumac (Rhus trilobata)

2. Mountain mahogany (Cercocarpus montanus)

- III. Grasses -649 acres
 - A. Comprise 78.7% composition of vegetation by weight while shrubs and trees make up the remaining 21.3% of the plant community. Vegetation density on the property averages 17%.
 - B. Species composition (%) over entire acreage

1.	Western wheatgrass	21.9%
2.	Blue grama	10.4%
3.	Kentucky bluegrass	7.8%
4.	Sideoats grama	6.2%
5.	Cheatgrass	6.2%
6.	Griffith's wheatgrass	5.9%
7.	Little bluestem	5.8%
8.	Sandberg bluegrass	5.8%
9.	Buffalograss	5.8%
10.	Big bluestem	5.3%
11.	Japanese brome	4%
12	Sun sedae	2 7%



 13. 14. 15. 16. 17. 18. 19. 20. 21. 	Needle and thread June grass Yellow Indiangrass Sleepy grass Red threeawn Hairy grama Six weeks fescue Sand dropseed Canada bluegrass	2.6% 2.5% 2% 1.7% 1.3% 0.7% 0.7% 0.7% trace
21.	Canada bluegrass	trace
22.	Prairie dropseed	trace
23.	Ring muhly	trace

Two special plant associations of state concern have been recently identified on the Rabbit Mountain property (see Map E). The plant associations are placed on the state list (C.N.H.I., 1983) when the known remaining examples in Colorado, in a condition close to presettlement condition, are threatened with alteration or extirpation.

The <u>Cerocarpus</u> <u>montanus</u> - <u>Rhus</u> <u>trilobata/Andropogon</u> <u>gerardii</u> (Mountain mahogany-Three leaf sumac/Big blue stem) association is ranked A2 because there are less than six known occurrences on small acreage; there are obvious threats to the remaining occurrences and the range of the association is in less than three counties. This plant association is also of national concern.

The <u>Pinus ponderosa/Cercocarpus montanus/Andropogon gerardii</u> (Ponderosa pine/Mountain mahogany/Big blue stem) association is ranked BU on the state list for now and until more information is gathered. It is very likely to be uncommmon with more limited occurrences in the state.

A partial list of vegetation found at Rabbit Mountain is included in the appendix.

3.B3 Fauna

The Rabbit Mountain property is in many respects a transitional belt between the plains grasslands and the ponderosa pine forests of the foothills. The grasslands, shrublands and scattered forests on the site provide for a greater variety of animal associations than one might find at higher or lower elevations. A preliminary mammal analysis completed recently by Dr. David Armstrong, CU Center for Interdiciplinary Studies, has listed 72 potential species at Rabbit Mountain. Of these, the habitat has or currently does support 53 hypothetical species, 13 species have been observed and 6 species have been extirpated from the County in recent times and would not likely be found unless reintroduced. A species list follows in the appendix.

Of particular note in the study given the large acreage of grasslands, was the low number of small mammals live-trapped in 500 trapnights even though there was abundant sign in all ecosystems. Poor weather conditions are suspect for the dismal results of only three individuals trapped.

An additional peculiarity noted in the study was the absence of rabbits he property. Only one individual of the genus <u>Sylvilagus</u> was spotted on the property. although droppings and tracks were observed on all transects. Two hypotheses have been advanced and warrant further study. Division of Wildlife harvest records point to cottontail population fluctuations in Boulder County with



1984 predicted as a low point in the cycle. Secondly, there has been some research which suggests that competition with livestock will drive leporids out of an area. Further field work will be necessary to test these hypotheses and provide a better data base on the mammal populations.

Avifaunal populations have yet to be subjected to extensive field work. Birds typical of the grasslands and foothills life zones would be expected and a listing of potential species is included in the appendix. The surrounding region is excellent habitat for many of the birds of prey. Buteos, accipiters, prairie falcons, small kestrels and owls have all been seen on or over the property. Golden eagles also nested in the area in 1976, but there has been little sign of similar activity in recent years.

The critical wildlife habitat designation for the Rabbit Mountain area was based on documentation of two breeding bird species listed as rare in Boulder County (Say's phobe and scrub jay), presence of the white-tailed deer and reports of an uncommon miner bee. The property being purchased by the County is only a part of the larger critical wildlife habitat designated on the County Comprehensive Plan.

Some historical accounts mention that Rabbit Mountain was once nicknamed "Rattlesnake Mountain" because of the presence of numerous snakes. Although the population is considerably less than what was reportedly on the property, prairie rattlesnakes can still be found during the warmer months. Further field work will be necessary for a definitive data base on reptile species.

3.C Cultural Environment

'n

The Rabbit Mountain area is situated at the boundary between two of the five major physiographic regions recognized as culturally relevant by the Colorado Historical Society: the Plains and the Mountains. The location provides the potential for important cultural resources research into the prehistoric and historic uses of the foothills region and the similarities and differences between cultural adaptations to mountains and plains environments.

3.C1 Prehistory

<u>Paleoindian Stage</u> - the Paleoindian Stage is characterized by a nomadic lifestyle and a specialized hunting and gathering economy based upon the exploitation of large game animals that are now extinct, including bison, mammoth, bear and sloth, and undetermined species of flora.

Humans are thought to have entered Colorado prior to 10,000 B.C., although interpretations of the scant evidence which dates to that time are controversial. The Paleoindian Period (10,000 to 5,000 B.C.) represents the first period of human occupation which is well-documented in Colorado. Variations of the large projectile points typical of Paleoindian Period sites can be distinguished and are found to characterize tool assemblages which can be assigned to specific time periods: Clovis - 10,000 to 9,500 B.C.; Folsom - 9,500 to 8,000 B.C.; and Plano - 8,000 to 5,000 B.C.

<u>Archaic Stage</u> - The Archaic Stage is characterized by a nomadic lifestyle, the exploitation of mammals such as deer and modern bison and the use of a variety of floral resources. The procurement of foodstuffs was apparently achieved through intensive exploitation of flora and fauna on a specialized seasonal cycle of migration as each species became available. Material remains include more varied tool kits, specifically more groundstone implements, than those of the Paleoindian Stage.

The Archaic Period (5,000 B.C. to A.D. 500) follows the Paleoindian Period, which ended with the termination of the last glaciation. Climates became warmer and drier, and the large, ice-age animals became extinct. The Archaic Stage is presumed to have developed in response to this shift in environment. Subsistence strategies changed from concentration on these large animals and relatively few plant resources to exploitation of a wider variety of available fauna and flora. Archaic Period cultural remains include large projectile points, most of which are triangular, and smaller and more crude than Paleoindian Period types.

Late Prehistoric Period - Although A.D. 500 is the defined termination of the Archaic Period, the Archaic Stage (lifeway) continued, with various modifications, throughout succeeding periods of aboriginal occupation in Colorado. The Late Prehistoric Period (A.D. 500 to 1600) began with the adoption of the bow and arrow and the introduction of ceramics. Late Prehistoric remains are abundant in the mountains and foothills areas. Discovered sites include open camps, rock shelters, lithic scatters, tipi ring sites, quarries and rock art.

Formative Stage - The Formative Stage of cultural development is characterized by the settlement of villages and a growing reliance on horticulture. In Colorado, three distinct cultures display variations of Formative Stage lifeways: Anasazi or Pueblo, Fremont and Woodland. Sites associated with the more prominent Formative stage cultures lie well outside the Rabbit Mountain area.

Occupants of the foothills appear to have been influenced by Formative Stage developments which were centered further east. By A.D. 1, maize horticulture and pottery began to appear on the plains of southeastern Colorado. These developments are attributes of the Woodland Culture, which also occurred over a large area on the plains to the east and southeast of Colorado. No direct evidence of settled villages has been discovered within the foothills of eastern Colorado, and it is currently believed that no true Formative Stage developed within this area. Foothills occupations appear to have decreased after A.D. 1000; and by A.D. 1400, a confusing combination of intrusions by various antecedents of modern aboriginal groups, such as the Shoshone, Ute and Apache, has been indicated but not clearly defined.

<u>Protohistoric Period</u> - The Protohistoric Period (A.D. 1600 to 1800) represents the time during which contacts first with the Spanish, and later with trappers and Euroamerican explorers, resulted in the incorporation of European items into the material culture of aboriginal peoples. These items include glass beads, metal projectile points and other implements, the horse and equestrian trappings. Hunting and gathering lifeways also continued, with acquisition of the horse enabling some groups to range over a wider territory and place greater emphasis on certain species such as the buffalo.

The Plains Apache are the earliest known occupants of eastern Colorado during this period, but they were forced south by the Comanche and Ute in the late 1700's. Early records indicate that the Shoshone were present in

Colorado. The Cheyenne and Arapaho are known to have hunted in the mountain parks, although the plains comprised their major territory until their restriction to reservations in the late 19th century.

Although aboriginal groups continued to practice the hunting and gathering strategies of the Archaic Stage of cultural development, extensive modifications in lifestyle were necessary, due to the pressure and influence of Euroamerican settlement of the region. Evidence of this influence can be seen in the increase of Euroamerican cultural materials found at aboriginal sites and in the gradual increase in restriction of aboriginal movement until the various tribes were assigned to reservations.

Rabbit Mountain Sites

According to current records, 24 archaeological sites have been found in the Rabbit Mountain area by the University of Colorado Anthropology Department. Seven prehistoric sites have been recorded on the property, and one is near the property line. Additionally, three historic sites and one prehistoric/historic site were recorded and at least ten prehistoric and three historic sites were located but not yet officially certified.

Prehistorically, there are artifacts which range from the Middle Archaic Period (approximately 5000 years before present), pottery from around 600-800 years ago, and the enigmatic stone circles, of which there are at least 80, and 2 rock shelters. Artifacts found include two projectile point fragments and several lithic flakes.

According to reports by some of the early residents of the Rabbit Mountain region, the property contained a large number of archaeological artifacts. For the most part, these have been collected by some of the early property owners, and many have undoubtedly been taken by "pot-hunters". One early resident of Dowe Flats, Mrs. Herbert Kincaid Jones, mentioned that Dowe Flats was the site of an Indian campground and that an Indian hunting ground existed on the northwest hill of Dowe Flats. A later resident of Rabbit Mountain, Jack Moomaw, is reported to have accumulated quite an extensive collection of artifacts from the area. These have been sold to a museum in Houston; some are on display at the Museum at the YMCA Camp near Estes Park; and some are now in private collections.

3.C2 Recent History

The settlement of the area now known as Colorado began around 1540, when a Spaniard named Don Francesco de Coronado entered the region. He found many Indians - the Ute, Arapaho and Cheyenne - inhabiting the area. Soon after the acquisition of lands by the Louisiana Purchase of 1803, several explorers were commissioned to inspect the new territory. Pike, Long, Custer and others brought back such gloomy reports that little interest developed in settling the area. For the most part, fur traders and mountain men were the only travelers to brave the rugged mountains in the early 1800's.

Gold was discovered in the Rocky Mountains in 1858, initiating the gold rush that brought many people to Colorado. Gold seekers, merchants, farmers and ranchers came in droves and established permanent settlements. The City of Boulder was first settled on October 17, 1858 and became an important outfitting spot for the gold mines; several hotels were constructed, saw

mills and stamp mills were erected, a school house was built and churches were organized.

Along the St. Vrain River, the town of Burlington was growing as well. By late 1862 a U.S. Post Office was established and farming was continuing to expand over the valley. During the fall of 1870 a group of influential Chicago men and women organized the Chicago-Colorado Colony, which was laid out in the Spring of 1871 as the center of a cooperative agriculture venture. Persons joining the group paid an initiation fee of \$5 and membership fee of \$150 which entitled them to a tract of land from 5-40 acres outside the village limits or three building lots.

The first settlers in the Lyons vicinity came in the early 1860's. Mr. E.S. Lyon, for whom the town is named, arrived from Connecticut in 1880 to improve his health. He quickly realized the value of the local red sandstone found on the land he had purchased. Lyon returned east to sell quarry shares and persuaded many to come to the vicinity where a townsite was plotted in 1882. The quarries of Lyons sandstone have been the mainstay of the local economy throughout the years.

Christopher Columbus Weese (1845-1916) was the first white settler in the Rabbit Mountain area. Born in Green County, Illinois, Weese lived there with his family until his mother's death in 1849. He then went to live with his uncle, William Baker, an Illinois farmer. Around 1858 Baker outfitted an ox-drawn covered wagon and started for the gold fields of California accompanied by his wife and Weese. Tired and discouraged after a long, slow ride across the prairies of Nebraska and Colorado, they arrived in the St. Vrain valley in July of 1859. The "pleasant valley" east of what is now Lyons appealed to them as a place to settle down for farming.

With the help of Weese, William Baker established a farm near McCall Lake. After four years on the farm, Weese volunteered for the United States As a member of the Colorado First Cavalry he took part in the Sand Cavalry. Creek Massacre on November 29, 1864. Weese always regretted that he had a part in this sad event and rarely mentioned it. Having served the required time, Weese was discharged in December of 1864 and returned to the St. Vrain He homesteaded 160 acres of land west of McCall Lake and continued valley. to buy land around his homestead over the years. His property extended north to Dowe Flats, including dry land called "Rabbit Hill". (A long-time resident of Hygiene, Ruth McKnight, has stated that the spot was called "Rabbit Hill" prior to "Rabbit Mountain", although a 1914 Boulder County map. lists it as Rabbit Mountain.) Numerous abstracts show that Weese was the original or second owner of much of the land in the area.

At age 37 Weese married Melinda Jane Baker and later fathered two children: Alvin in 1883 and Lila in 1894.

Jack Moomaw was born in Nebraska in 1982. In 1983 his family moved to a farm near Lyons but spent much of their time in the Estes Park Mountains. Jack joined the Navy but disliked it enough to return to Colorado after two years. He took various jobs in the Estes Park area, guiding on Longs Peak before he became a National Park ranger. As a guide to world-famous scientists, Jack acquired a varied education, especially in archaeology. He was an author, lecturer and world traveler but he always returned to the

Colorado mountains. Moomaw Glacier in Wild Basin (Rocky Mountain National Park) is named after Jack Moomaw.

In 1917, Jack and Lila moved into the original Weese homestead, just west of McCall Lake. The property included 1200 acres of river bottom land and parts of Rabbit Mountain. One daughter was born into their marriage.

In April 1964, Mr. and Mrs. Norman Stamp bought the 102-acre property west of McCall Lake from Jack Moomaw. The renamed it Rascal Ranch and continued farming it until recently when it was sold to John and Gaynor Toteve. Meanwhile, Jack Moomaw moved to Lyons and was cared for by Rosie Miller and her husband until he died in 1975. Moomaw's Rabbit Mountain property was inherited by his granddaughter, Helen A. Motley.

Homestead claims that were filed in the general vicinity between 1858 and the early 1900's include the names of David Wolpert, John Becker and Arthur Chline. No information has been uncovered regarding these men.

Besides the obvious ranching activities, the plat records indicate mineral exploration occurred in the Rabbit Mountain area as early as 1902 by such outfits as the Lulu Oil and Gas Company, Webber Oil and Stone, and the Sweet Group Placer.

C.S. Burford bought the Dowe Flats property in 1903-04. At this time, Dowe Flats numbered 2300 acres. According to Mrs. Herbert Kincaid Jones, a granddaughter of C.S. Burford, Dowe Flats was the site of an Indian campground, and a natural lakesite was present. In addition, an Indian hunting ground existed on a hill northwest of Dowe Flats. She recalls how her family pulled sixteen plows behind a steam tractor to plant wheat. It appears that the area has historically had a number of reptiles because when the wheat shocks were thrown into the thresher that first year a rattlesnake was found in each one. Indeed, Lila Moomaw and others had nicknamed Rabbit Mountain "Rattlesnake Mountain".

The Burford family sold Dowe Flats to Ideal Cement in 1957. In 1984, Ideal Cement sold much of the surface-rights to Marigold 41, a development partnership of Bill Crowell and Michael Dollaghan.

The remains of a structure probably used for ranching and grazing purposes is located on the eastern part of the property near the entrance gate. No information is available regarding this structure other than that it is not present in a photograph taken in 1932.

A batch plant was located on the property during the 1950's for the construction of the St. Vrain Supply Canal. All that remains of the plant is a concrete slab and some cement pilings.

An inholding, recorded as Dowe Flats Sotrage Reservior #2, exists in the southern portion of the Rabbit Mountain property and is owned by Paul Zenobia.

3.D Current Use

The Rabbit Mountain property is currently closed to public use until resources can be inventoried, boundaries marked and access secured. There

are no outstanding agricultural leases in effect, the last one having been terminated June 22, 1984.

3.D1 Acquisition/Lease Schedule

On December 13, 1983, the County of Boulder entered into a purchase contract and lease with option to purchase with Helen L. Motely for 1119.62 acres of land on Rabbit Mountain. This arrangement allows the County to spread the payments over several years while yet controlling use of the entire property through a lease until all parcels have been purchased. The following schedule gives particulars on the purchase and Map G illustrates the property boundaries with the five parcel options.

OPTION NUMBER	PARCEL NUMBER	ACRES	LAST DATE FOR EXERCISE OF OPTION	LAST DATE FOR CLOSING	PURCHASE	INTEREST PAYMENT IN ARREARS	LEASE PAYMENT DUE AT CLOSING DATE (PLUS TAXES)	TOTAL PAYMENT*
	1	373		12/14/83	261,100	0	\$ 747(1)	\$ 261,847
1	2	155	2/1/84	6/14/84	108,500	20,906	\$ 296(2)	\$ 129,702
2	3	180	2/1/85	6/14/85	126,000	33,131	\$ 412	\$ 159,543
3	4	195	2/1/86	6/14/86	136,500	23,051	\$ 217	\$ 159,768
4	5	216.62	2/1/87	6/14/87	151,634	12,131	s <u>o</u>	\$ 163,765
TOTALS :		1,119.62			\$ 783,734	\$ 89,219	\$1,672	\$ 874,625

*Purchase price plus interest and lease payment

(1) Lease payment through December 13, 1984

(2) For lease term December 14, 1984 through June 13, 1985

3.D2 Easements/Leases

The following easements and leases have been recorded on the Rabbit Mountain property (see Map H):

1. Right-of-way for ditches or canals constructed by the authority of the United States as reserved in United States patent of record;

2. An easement and right-of-way for roads and ditches designated as Tracts F and G as granted to the United States in deed recorded April 1, 1951;

3. Right-of-way for the operation and maintenence of certain works of the Colorado-Big Thompson project under the provisions of the "Canal Act" and designated as Tracts A, B, and I in document recorded October 10, 1973;

4. An easement for an access road as granted to the United States by deed recorded May 19, 1954;

5. A right-of-way for a ditch or ditches to and from the Dowe Flats Storage Reservoir No. 2 together with the right to enter upon said land for the purpose of maintaining and repairing said reservoir and ditches as granted in deed recorded June 3, 1913 and as reserved in deed recorded July 10, 1916. Mr. Paul Zenobia owns this 12.5 acre inholding and it has never been built on or used as a reservoir;

6. Easements for ingress and egress, road and utilities as granted by deed recorded April 22, 1981. This easement ties to a 160-acre parcel





of land southeast of the County Rabbit Mountain property which Helen Motley sold to an investment partnership;

7. Record affidavit of non-production as it pertains to that certain oil and gas lease recorded July 24, 1980 and amendment thereto recorded December 15, 1982.

Several other oil test wells have been drilled on the property. Two of these are located in the central part of the property; the third is to the southwest (see Map B).

8. A conservation easement between Helen Motley and Boulder County recorded March 26, 1984.

Although there is no recorded easement, the Rural Electric Association maintains a power line which crosses the Rabbit Mountain property in an east-west direction. In the northeast corner there is an additional line which runs north into the Parrish property. REA accesses Rabbit Mountain from 55th Street and from the NCWCD road across the Parrish property.

4. MANAGEMENT CONSIDERATIONS

.A Protection of Resource, Visitors & Neighbors

When the Rabbit Mountain property was acquired by Boulder County, a number of problems regarding use and access of the area were also inherited. The previous owner was an absentee landowner and many abuses to wildlife, vegetation and archaeological artifacts occurred over the years. Since Boulder County has contracted to purchase the property, there have been cut locks and chains, torn down fences, illegal road building, stray cattle, horses and dogs, illegal hunting and removal of rocks and vegetation. Additionally, there has been a considerable amount of trespass by adjacent landowners and others even though the property has been closed to the public while a resource evaluation is undertaken.

In view of the problems, the following management considerations are recommended:

1. The existing entrance on 55th Street is owned by the Northern Colorado Water Conservancy District. A new public parking area and entrance should be constructed on the parcel of land the County is purchasing just north of the NCWCD land (see Diagram A). This entrance would also serve as a trailhead and could include appropriate facilities such as picnic tables, shelter, toilets and trash cans. Gate i would be constructed at the east end of the parking lot to allow official vehicle access to the Rabbit Mountain property.

2. In order to keep livestock out, delineate the boundary and completely secure the area, the property should be surveyed and fenced around the entire perimeter.

3. In the event that stray livestock get on the proprety, provision needs to be made to herd them back through the fence. It is recommended that three new four-foot wide livestock channel gates (see Diagram B) be installed at points h, f and k (Map I) to allow fence openings for livestock to be herded back through.

4. Existing gates a, (2 NCWCD gates on eigher side of canal), g, d, e should be chained, locked and maintained for official access purposes only. Gate c and b (cattle guard) should be locked to signify a barrier to public access if the NCWCD is in agreement. The road ending from this access point deadends at the canal siphon works.

5. Adequate numbers of boundary signs need to be posted around the perimeter of the property. A visual check should be made on an annual basis to replace stolen or damaged signs.

6. A bulletin board should be installed near the trailhead at the east end of the parking lot. It would contain maps of the open space facilities, rules and regulations and other pertinent recreation user information.

7. Since there are rattlesnakes on the property, appropriate warning signage is suggested.







8. It is suggested the NCWCD post additional warning signs at the entrance/exit outlots of the St. Vrain Feeder Canal. Chain link fence may also be necessary at some point in time to lower the level of danger of someone falling into the canal, siphons or tunnels.

9. Maintenance and patrol of the property should be increased once it is open to the public. Enforcement of County Park and Open Space rules and regulations should be continued.

10. Old buildings and miscellaneous junk found on both sides of the canal just east of the 55th Street entrance should be removed. Photo documentation of the buildings is suggested prior to removal.

11. Alternate access options should be explored with adjacent landowners southeast of County property who have recorded easements.

12. Options for purchase of easements or additional buffers around the Rabbit Mountain property should be explored in the future, with the objective being to more closely match topographical features with the boundary and to add an additional measure of protection to those environmental resources identified on the larger scale in the County Comprehensive Plan. Inholdings in the current purchase area should be considered for acquisition.

13. Extended/Intensive use of the property for research purposes should fall within the guidelines established for such activities in the joint City and County of Boulder research proposal format. Natural and cultural history research will be encouraged to the extent it adds to the existing body of knowledge and does not compromise protection of the resources.

4.B Resource Management

4.B1 Forest Management

The ponderosa pine forest is in a state of decline with little or no obvious reproduction. There is evidence of fire and major soil erosion at some time in the past, and current contributors to the revegetation problem include lack of adequate topsoil and extensive grazing.

Due to very poor site conditions, the trees in the pine forest have little or no timber value. Although firewood has been taken off the property in the past, there is a limited amount of stock from which to continue this practice. The remaining forest has its greatest value in providing for a diverse wildlife habitat, erosion control of the remaining topsoil, and diversity in the aesthetics of the area.

Forest management considerations include:

1. Develop a reforestation plan which would include planting potted stock in areas where trees currently exist and the soil is adequate for growth.

2. Keep domestic livestock grazing out of the forested zones and monitor the area for natural reproduction. This recommendation also coincides with that suggested by the Colorado Natural Heritage Inventory Program for protection of the rare plant association sites. 3. Continually monitor the forest for insect and disease problems.

4. Particularly in areas where there are ladder fuels, evaluate feasibility of pruning up trees.

5. Evaluate the feasibility of developing a fire break around the base of the mountain (particularly the southwest side) to lessen the risk of forest loss through grassland fires.

4.B2 Range Management

Based upon a recent range analysis conducted by the Soil Conservation Service (SCS), the Rabbit Mountain property is presently in poor to good condition with the majority of the rangeland rated as fair compared to what would be considered optimum for the site. There has been a long history of grazing on the property, and the grassland has evolved to those species with more tolerance of domestic livestock. Desired objectives for the Rabbit Mountain property are to increase the overall range condition to good to excellent and increase the species composition with more native grasses (i.e., Indiangrass, switchgrass, big and little bluestem, sideoats grama and buffalo grass).

Management considerations include:

1. For the immediate future, the entire property should be kept free of domestic livestock grazing. This will allow the range condition to improve while at the same time giving the Parks and Open Space Department adequate opportunity to complete a boundary survey and perimeter fencing. An additional side benefit of the rest period should be an increase in food and cover for wildlife.

2. Monitoring the grasslands can best be accomplished through an annual range analysis. Reintroduction of a livestock grazing lease might be a future option under the following conditions:

a. the analysis shows the range condition objectives are being met;

b. the forested area and rare plant association sites are fenced to exclude grazing;

c. grazing take place only during the dormant season (November through March) and within the stocking level recommended by the SCS;
d. grazing be deferred one out of every three growing seasons.

3. Springs and seeps which have been identified should be improved for wildlife water supplies as well as for livestock where needed. Underground tanks might be appropriate for emergency water storage in case of wildland fire when other supply sources are not available.

4.B3 Wildlife Management

Historically, a number of species of wildlife have been hunted on Rabbit Mountain. According to Division of Wildlife reports, approximately thirty mule deer have been harvested annually since 1971. Another 20-30 deer are taken from adjacent property. Records also indicate a deer winter range distribution of 32.7 individuals per square mile for big game unit 20, in which Rabbit Mountain is located, and a buck/doe/fawn ratio of approximately 25/100/58. White-tailed deer have been seen on Rabbit Mountain but their numbers are few compared to mule deer. Observations over the past year indicate both species move freely across the property boundaries, particularly to the north.

During recent harsh winters, elk have been sighted on Rabbit Mountain. They probably dispersed from the herd which normally winters near Lyons. There was also an undocumented report of black bear some years ago, but they are unlikely to be in the area now.

Smaller wildlife which has been hunted or trapped on Rabbit Mountain includes dove, cottontail rabbits, coyote and bobcat. Although there are no accurate records of the coyote harvest, DOW reports show that 2-3 bobcats had been trapped annually until 1981.

Two major management directions for Rabbit Mountain are to improve the habitat for a diversity of wildlife and to provide a sancutary particularly for those species on the property that have been identified as rare in Boulder County.

Management considerations for wildlife include:

1. There should be a permanent environmental monitoring schedule and record system on wildlife species present on the property and their abundance. The wildlife transects which have been set up (Map F) will also provide information on the relationship between habitat types and wildlife usage and the relationship between human and wildlife use of the property.

2. The property should be maintained as a sanctuary with no hunting or trapping allowed. Up until the present, continued hunting on adjacent private properties appears to help control the deer population. However, if careful monitoring of the habitat indicates resource damage is occurring (i.e., deer excess), management options to reduce overpopulation should be considered.

3. Forage production for wildlife could be improved by maintaining strict control over domestic livestock use of the property.

4. It is essential to maintain and improve habitat critical to those species for which the critical wildlife habitat designation was listed in the County Comprehensive Plan.

5. Brush piles and more edge-effect islands can be used to create escape, refuge or travel corridors.

6. Permanent, undisturbed cover should be maintained along fences and odd corners.

7. Standing dead trees should be left for cavity nesters and raptors.

8. Steps should be taken to improve the supply and quality of water for wildlife use throughout the year. Springs located at Rabbit Mountain could be developed and become tremendously valuable to wildlife. Monitoring should be done on a regular basis.



9. Parks and Open Space rules and regulations which affect wildlife should be enforced, and the Parks and Open Space Department should work closely with DOW on enforcement of state laws.

10. Development of further wildlife research on the site should be encouraged, as should programs relative to wildlife management.

11. Review of the management plan should be done periodically to assess program strategies as the needs and current situations dictate.

It has been determined that there are four major prairie dog towns on the Rabbit Mountain property (see Map J). The smallest is approximately five acres and lies in the eastern part of the property (referred to as the east town). The south town is approximately ten acres and is located in the southern valley. The north town is approximately 30 acres in the north meadow, and the largest colony is in the west town, which is 70 to 80 acres and located in the southwest corner of the property.

In order to maintain some control over expansion of the prairie dog towns, the following recommendations are suggested:

1. The north and east towns are relatively recent and should be eliminated before they expand over more land. The erosion potential from vegetation loss is greatest at the north town and the east town is an expansion of the extensive prarie dog colonies on adjacent land. Once the towns are removed from these areas, rejuvenation of the range to excellent condition should preclude their re-establishment.

2. Perimeter control of the south town is all that is currently recommended since most of it lies within the private inholding.

3. The west town is quite extensive and a source of prey for several predators. Perimeter control is recommended to keep it confined on open space property and away from the St. Vrain Supply Canal.

4. A monitoring program should be set up to determine when treatment is necessary as well as its effectiveness. Only two control agents, zinc phosphide or aluminum phosphide, have been authorized for use on County lands. Neither agent passes through the food chain.

4.C Recreation/Education

4.C1 Outdoor Recreation

Prior to Boulder County's acquisition of Rabbit Mountain, the primary types of recreation on the property included hunting, hiking and horseback riding. The limited recreational use has been restricted to private groups for many years, but visitation will soon increase when the area is open to the public.

Special plant associations, critical wildlife habitat and archaeological features on the property have been identified in the Boulder County Comprehensive Plan as being significant and requiring protection. Every effort will be made to lessen human impact on these resources and to direct visitors to less critical areas. Other facility development constraints include access, terrain, availability of utilities, and a lease-purchase contract wherein the County will not complete purchase until 1987.





For recreational management purposes, the property can be divided into three zones: (see Map L)

Maintained area - Area that requires continual maintenance

Passive area - Area that has minimal disturbance

2**4**0

Special area - Area requiring various levels of maintenance and management, for example areas of archaeological and geological significance, and special wildlife and rare plant site areas

The following management is recommended for these zones:

<u>Maintained area</u> A parking lot for the park visitor will be located at the west entrance to the property. It will measure approximately 150 by 150 feet, be fenced, and have a pipe gate just east of the lot which will prevent vehicular access to other roads on the property. These roads will serve the dual function of hiking/riding trails for the public and authorized vehicle access.

Just east of the parking lot (see Diagram B), a public picnic area will be constructed. No trees are growing in this part of the property, so a picnic shelter should eventually be constructed to provide shade. Other amenities would include picnic tables, charcoal grills, trash cans and a pit toilet. A two-sided kiosk/bulletin board adjacent to the parking lot would provide natural history information, park maps, trail information and rules and regulations.

A spring located just north of the main entrance has signs of previous use and should be explored as a possible source of drinking water.

Long-term maintenance requirements would include trash collections, pit toilet maintenance and fence and signing maintenance. The NCWCD will maintain the roadways on the property as long as they are not opened for general public use.

<u>Passive area</u> The following management objectives are proposed for areas zoned for passive recreation:

- Preserve unique, rare or endangered species, natural landmarks, communities or ecosystems.

- Provide gene pools of the native plant and animal species.

- Provide areas where the general public can participate in passive forms of recreation, such as hiking, horseback riding, wildlife photography, birdwatching, sketching, etc.

- Provide areas for more formalized environmental education activity including short field trips, outdoor research laboratories and extending learning experiences.

- Provide areas for aesthetic and psychological appreciation of the Rabbit Mountain property.

- Provide areas where the public can experience and appreciate the historical background of the region.

To achieve these objectives, it is recommended that the following minimal development be implemented:

Two hiking trails should be developed on the central part of the property (see Map K). One of these trails would be developed as a shorter (3/4 mile),



self-guided nature trail loop. The trail would begin approximately $\frac{1}{2}$ mile beyond the parking lot, and signs posted along the pedestrian accessible unimproved road leading to the trail would provide information to maintain interest regarding the natural history of the park. Brochures for the selfguided trail could be placed in a mounted wooden box at the actual beginning of the trail. The second trail would consist of a longer loop of approximately four miles in length designed for day hikes and equestrian use.

Both trails would provide access through some of the more scenic areas of the Rabbit Mountain property, as well as provide the opportunity to observe some of the various plants and animals that exist in the area. This not only allows public enjoyment of these resources, but also concentrates the area of human impact so that wildlife and vegetation may remain relatively undisturbed in other areas of the property. Maintenance on primitive trails would be minimal. If markers were used on the self-guided trail, there would be an initial cost; but maintenance would require only replacement of damaged or destroyed markers and annual painting.

A long-term possibility which warrants further investigation is that of providing a controlled camping area for youth groups within the passive zone. The historical significance of the area and uniqueness of the natural environment lend themselves to possible overnight use in conjunction with a formal outdoor adventure/environmental education program (Note environmental education section). Facilities might include a pit toilet, open-air shelter and tepees.

<u>Special area</u> Those portions of the Rabbit Mountain property zoned as special areas would be posted and maintained as closed to the general public. These areas contain cricial wildlife populations, rare plants, archaeological and geological features that could be impacted by indiscriminate human use and high hazard areas associated with the St. Vrain Supply Canal.

The special areas also have potential for research sites by qualified individuals or institutions. Proposals to use those areas will be evaluated on a case-by-case basis.

4.C2 Special Recreation Use

From time to time there will be requests by special interest groups/ commercial operators to allow specific outdoor recreational pursuits on Rabbit Mountain. Each request should be evaluated on its own merits keeping in mind the long-term stewardship responsibilities of the Parks and Open Space Department. The overriding objective in management of the property is to prevent loss of those natural and cultural resources identified as critical/unique while yet allowing education and passive recreational activity which is compatible with protection of the resources and other visitors.

4.C3 Environmental Education

A United States Commissioner of Education once referred to environmental education as "Education that cannot wait". The "hands-on" experiences of the outdoor classroom are one of the ways in which students can translate textbook studies into real situations. They can observe and evaluate the effects of resource management in relation to specific projects. The general public can benefit from environmental education experiences as well. Partici-

pants can gain knowledge in how to protect and care for limited resources as they learn about their natural environment and heritage.

Rabbit Mountain is rich in resources that lend themselves well to interpretation. The trails proposed in the Outdoor Recreation section would lead visitors through ponderosa pine forests, a dry shrub ecosystem and an overlook area where there is a eagle's-eye view of the plains, foothills and Front The shorter, self-guided nature trail loop would provide information Range. on natural and cultural history topics. These could include themes on forestry, wildlife, geology and history. The self-quided trail would begin approximately $\frac{1}{2}$ mile east of the parking lot, and hikers would follow signs leading to the actual trailhead. These signs could be designed in such a manner to hold the interest of the pedestrians in route to the trailhead, for example by natural history riddles, "fun facts", etc. The self-quided trail booklets would be available at the trailhead, and kept in stock by the Parks and Open Space staff.

The four mile loop trail could be utilized for formal interpretive walks as well as general recreational hikes. Staff and Volunteer Naturalists could lead groups on the trail, discussing such topics as flora, fauna, geology, prehistory, wildlife management, entomology, agriculture, etc. This trail would also serve the needs of those wanting longer hiking routes in the Rabbit Mountain area (see Map K).

The environmental education bus being developed by staff could provide another type of environmental education experience for groups and/or the general public. The bus could be driven to the parking lot at Rabbit Mountain, and themes including Indians and archeology, geology, forestry, wildlife management, birds, wildflowers, entomology, fungi and lichens, survival techniques, etc. could be interpreted.

A long-term environmental education direction is to tie programming and interpretive materials/displays together with a proposed nature center on the Lohr property, northwest of Longmont. The nature center could be used for group orientation and include displays dealing with the various resources found on the Rabbit Mountain property, including wildlife, flora, archaeology, geology, history, life zones, etc. Programming could be centered in this facility, and the proximity of the Rabbit Mountain property lends itself well to follow-up activities after a visit to the center.

The archaeological importance of Rabbit Mountain relative to other sites is not yet well understood by noted authorities. The surface survey is nearly complete, and it confirmed that most artifacts have already been removed from the site. Further research may be appropriate in a sacrifice dig area if it is determined that there is likely to be new information uncovered about the peoples who once inhabited the property. Observations of a dig and demonstrations of flint-knapping techniques and Indian lifestyles could be associated interpretive programming themes for the site.

Another idea to be explored for the future is the proposed youth group camp area. It would provide primitive lodging limited to recognized youth organizations and science/outdoor living students from Boulder County K-12 schools. It is recommended that the camp area require a reservation and that there be limited stay with a maximum of 25 persons using it at any one time. Groups would be required to park in the west entrance parking lot and hike in to the camp. All food, water and overnight gear would be packed in and out by the group.

It is recommended that the overnight experience be coordinated with an environmental education experience which could be developed by the Boulder County Parks and Open Space Department staff, Volunteer Naturalists and Boulder County School Districts. The experience could include intensive prior instruction and experience with environmental investigations and studies, such as those given in local "outdoor living" and science classes, and for scout "wildlife badge" requirements. A curriculum guide could be prepared in conjunction with the overnight experience, and groups could apply some of the special skills learned and practiced in the "pre-camp" sessions.

Goals of this curriculum would include:

- Help youth and children learn about the total environment - biological, physical, social and cultural.

- Enable groups to become sensitive to their own responsibility toward maintaining a productive and liveable environment.

- Motivate groups to work constructively toward the solution of environmental problems.

Topics that could be explored in a "hands-on" curriculum linked to spending several days on the Rabbit Mountain property include terrestrial ecosystems, geologic and geographic studies, plot studies (analyzing a small plot of ground), and wildlife ecology. During their stay, groups could receive instruction in camping survival techniques, first-aid, artwork, drama and music.

In conclusion, Rabbit Mountain can provide a number of environmental education opportunities. Environmental education and interpretation can increase the effectiveness of resource management; informed visitors are more likely to use resources with less impact. In addition, interpretation can be used to attract persons to the areas suited for use and away from those that are easily impacted.

BIBLIOGRAPHY

 Anderson, Allen E. Experimental Deer Inventory - Northeast Region". Colorado Division of Wildlife, Game Res. Dept., July (1), 1978. Experimental Deer Inventory - Northeast Region. Colorado Division of Wildlife, Game Res. Dept., July (2), 1980. Baker, S.G., ed. "Baseline Cultural Resource Surveys and Evaluations in Primary Impact Areas of the Mount Emmons Project: 1978 and 1979 Field Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahgre Omplex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado. Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Beological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Feague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Division of Wildlife, Game Res. Dept., July (1), 1978. Experimental Deer Inventory - Northeast Region. Colorado Division of Wildlife, Game Res. Dept., July (2), 1980. Baker, S.G., ed. "Baseline Cultural Resource Surveys and Evaluations in Primary Impact Areas of the Mount Emmons Project: 1978 and 1979 Field Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompander Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompander Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. Colorado Historical Archaeology Context. The State Historical Society of Colorado, 1984. Colorado Beological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Eague, Richard D. and Decker, Eugene. Wildlife Conservation: Principles and Practices. Eiglimy, Jeffery L. Colorado Plains Prehistoric Context. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County, Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Experimental Deer Inventory - Northeast Region. Colorado Division of Wildlife, Game Res. Dept., July (2), 1980. Baker, S.G., ed. "Baseline Cultural Resource Surveys and Evaluations in Primary Impact Areas of the Mount Emmons Project: 1978 and 1979 Field Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado. Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. Colorado Historical Archaeology Context. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. Wildlife Conservation: Principles and Practices. Eiglimy, Jeffery L. Colorado Plains Prehistoric Context. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 of Wildlife, Game Res. Dept., July (2), 1980. Baker, S.G., ed. "Baseline Cultural Resource Surveys and Evaluations in Primary Impact Areas of the Mount Emmons Project: 1978 and 1979 Field Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompandere Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompandere Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Baker, S.G., ed. "Baseline Cultural Resource Surveys and Evaluations in Primary Impact Areas of the Mount Emmons Project: 1978 and 1979 Field Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado. Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahyre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahyre Plateau in West Central Colorado. Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County, Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Primary Impact Areas of the Mount Emmons Project: 1978 and 1979 Field Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. Colorado Historical Archaeology Context. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. Wildlife Conservation: Principles and Practices. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Seasons, Volume 1". Heritage Resource Study Series for the Mount Emmons Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Project of Amax, Inc., Gunnison County, Colorado. Unpublished report, Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. Colorado Historical Archaeology Context. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. Wildlife Conservation: Principles and Practices. Eiglimy, Jeffery L. Colorado Plains Prehistoric Context. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Centuries Research, Inc., Montrose, Colorado, 1980. Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". <u>Southwestern Lore</u>, 34(3):53-67. 1968. "The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Barkley, J.R. "Northern Colorado Water Conservancy District". Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompahyre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahyre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Benedict, J.B. and Olsen, B.L. "The Mount Albion Complex: A Study of Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". <u>Southwestern Lore</u>, 34(3):53-67. 1968. "The Uncompander Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompander Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Prehistoric Man and the Altithermal Research Report No. 1". Center for Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompandinge Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompandinge Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Mountain Archaeology, Ward, Colorado, 1978. Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". <u>Southwestern Lore</u>, 34(3):53-67. 1968. "The Uncompahyre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahyre Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Boddicker, Major L. "Prevention and Control of Wildlife Damage B-75". Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompanding Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompanding Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Extension Wildlife Service, Colorado State University, Fort Collins, Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompanding Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompanding Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Colorado. Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". <u>Southwestern Lore</u>, 34(3):53-67. 1968. "The Uncompanding Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompanding Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Buckles, William G. "The Archaeology of Colorado: Part III". "Archaeology in Colorado: Historic Tribes". <u>Southwestern Lore</u>, 34(3):53-67. 1968. "The Uncompandere Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompandere Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 in Colorado: Historic Tribes". Southwestern Lore, 34(3):53-67. 1968. "The Uncompandinge Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompandinge Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County, County, County, Colorado, 1984.
 "The Uncompanding Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompanding Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Archaeology on the Uncompanding Plateau in West Central Colorado". Unpublished Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado Plains Prehistoric Context. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County, County, County, County, Colorado, 1984.
 Ph.D. dissertation. Dept. of Anthropology, University of Colorado, Boulder, Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Colorado, 1971. Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Buckles, William G. and Nancy B. <u>Colorado Historical Archaeology Context</u>. The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 The State Historical Society of Colorado, 1984. Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Colorado Geological Survey. "Water Resources of Boulder County, Colorado". Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
Bulletin 42, 1980. Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u> . Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u> . The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
 Teague, Richard D. and Decker, Eugene. <u>Wildlife Conservation: Principles and Practices</u>. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u>. The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
Practices. Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u> . The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
Eiglimy, Jeffery L. <u>Colorado Plains Prehistoric Context</u> . The State Historical Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
Society of Colorado, 1984. Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
Flood Plain Information, Volume IV, "Upper St. Vrain Creek, Boulder County,
ribba riarn información, vorane iv, opper be, vrain breek, bourder bouney,
Colorado" 1972
"Big Thompson and Little Thompson Diver" June 1977
Cuthria M. P. Gadd P. Johnson P. Lischka J. J. Colorado Mountains
Prohistoric Context The State Historical Society of Colorado 1984
Hunter Zena Margret Geologic Patterns in the Foothills of the Front Range.
Boulder-Ivons Area Colorado Ph D dissertation University of Colorado.
Boulder Colorado 1947
Husted, W.M. "A Proposed Archaeological Chronology for Rocky Mountain National
Park Based on Projectile Points and Pottery. Unpublished M.A. thesis. Dept.
of Anthropology University of Colorado, Boulder, Colorado, 1962.
Irwin C and Irwin H "Excavations at the Lokaiska Site in the Denver.
Colorado Area" Proceedings Number 8 Denver Museum of Natural History.
Denver Colorado 1959
Mann Donald Geology of an Area near Eldorado Springs Colorado. M.A. thesis.
University of Colorado, Boulder, Colorado, 1960.
Nelson, C.F. and Graeber, J.M. "Excavations at Graeber Caul North Turkey Creek".
Southwestern Lore, 32(3):47-54, 1966.
Sharpe, Grant W. Interpreting the Environment.

Smith, Phyllis. A Look at Boulder. Pruett Publishing Co., 1981. Smith, Anne M. "Ethnography of the Northern Utes". Papers in Anthropology No. 17. Museum of New Mexico Press, Albuquerque, N.M., 1974. Tice, John H. Over the Plains and on the Mountain. 1872.

United States Department of Agriculture, Soil Conservation Service. "Soil Survey of Boulder County, Colorado". 1975

United States Department of the Interior, Bureau of Reclamation. "Colorado-Big Thompson Project".

Acknowledgements

Ann Armstrong, Boulder County Volunteer Naturalist Frank Beck, Boulder County Volunteer Naturalist William A. Braddock, University of Colorado Geology Dept. Colorado Division of Water Resources Colorado Oil and Gas Commission Dave Essex, Rocky Mountain National Park Dawn Genes, Soil Conservation Service Mrs. LaVerne Johnson, Curator of Lyons Museum Ted Johnson, Boulder County Public Works Kris Kranzush, Archaeology Consultant Robert H. Nykamp, University of Colorado Anthropology Dept. Harvey Sprock, Soil Conservation Service

Partial Plant List Found at Rabbit Mountain

Grasses

Common Name sandberg bluegrass blue grama buffalo grass hairy grama little bluestem yellow Indiangrass sideoats grama needle & thread Junegrass Japanese brome downey brome (cheatgrass) red three aun western wheatgrass Kentucky bluegrass Canada bluegrass big bluestem six weeks fescus sleepy grass Griffith's wheatgrass sand dropseed prairie dropseed ring muhly crested wheatgrass intermediate wheatgrass foxtail barley

Forbs & Shrubs horsetail prickly pear cactus snakeweed Louisiana sage hairy goldaster wild onion wooly Indianwheat prairie sunflower narl wort salsify fringe sage late goldenrod pincushion cactus wild rose wax current mountain mahogany freemont geranium (crainsbill) sun sedge curly dock dandelion

Scientific Name Poa sandbergii Bouteloua gracilis Buchloe dactyloides Bouteloua hirsuta Schizochyrium scoparium Sorghastrum nutans Bouteloua crutipendula Stipa comata Koeleria pyramidata Bromus japanicus Bromus tectorum Aristida longiseta Agropyron smithii Poa patensis Poa compressa Andropogon gerardii Vulpia octoflora Stipa robeusta Agropyron griffithsii <u>Sporobolus</u> cryptandrus Sporobolus cryptandrus Muhlenbergia torreyi Agropyron cristatum Agropyron intermedium Hordeum jubatum

Equisetum arvense Opuntia compressa Guierrezie sarothrae Artemisia ludoviciana Chrysopsis villosa Allium cernuum Plantago patagonica Helianthus nuttallii Paronychia phlyinata Tragopogon dubius Artemisia frigida Solidago gigantea <u>Echinocactus simpsonii</u> Rose acicularis Ribes cereum Cercocarpus montanus Geranium fremontii Carex heliophila Rumex crispus Taraxacum officinale

Forbs & Shrubs (continued) yellow evening primrose yucca silvery wormwood grass-leaved senecio gumweed western ragweed sedge gooseberry spring beauty dotted gayfeather rubber rabbitbrush textile onion death camis bedstraw wiskbroom parsley anens (prairiesmoke) aster winged buckwheat phlox wild wallflower waveyleaf thistle foxweed plains larkspur blue bonnet sumac locoweed sandlily skunkbush poison ivy showy milkweed ball cactus common harebell pasture sagebrush prairie sage Canada thistle daisy fleabane blanket flower sunflower (2 kinds) coneflower bindweed pepper grass chasping peppergrass wild geranium ground plum milk vetch scarlet globemallow prickly poppy plantain spiderwort (snotweed) rush mariposa lily great mullien

Oenothera brachycarpa Yucca glauca Artemisia filifolia Senecio spartioides Grindelia squarrosa Ambrosia psilostachya Carex spp. Ribes inerme Claytonia lanceolata Liatris punctata Chrysothamnus nauseosa Allium textile Zygadenus gramineus Galium boreale Lomatium orientale Geum triflorum Aster falcatus Eriogonum alatum Phlox hoodii Erysiusum wheeleri Cirsium undulatum Thlaspi arvense Delphinium virescens Lupinus plattensis Rhus glabra cismontana Oxytropis lambertii Leucocinum montanum Rhus trilobata Toxicodendron rydkergii Asclepias speciosa Coryphantha vivipara Campanula rotundifolia Artemisia frigida Artemisia ludo viciana Cirsium arvense Erigeron strigosus Gaillardia aristata Helianthus annuus Ratbida columnifera Convolvulus arvensis Lepidium virginicum Lepidium perfoliatum Geranium caespilosun <u>Astragalus crassicarpa</u> Astragalus sp. Sphaeralcea cuspidata Argemone polyarihmos Plantago patagonica Tradescontia accidentalis Juncus sp. Calochortus gunnisonii Verbascum thapsus

Se

Trees American plum Rocky Mountain juniper ponderosa pine plains cottonwood peach leaf willow chokecherry

Prunus americana Juniperus scopulorum Pinus ponderosa Populus sargentii Salix amygdaloides Prunus virginiana var. melanocarpa

34

۰.

Potential Birds of Rabbit Mountain

Order/Species	Time of <u>Year</u>	Habitat	Frequency
Falconiiformes Turkey Vulture Northern Harrier Swainson's Hawk Red Tailed Hawk Ferruginous Hawk Rough Legged Hawk Golden Eagle American Kestrel Prairie Falcon Peregrine Falcon	Summer Resident Summer Resident Resident Winter Resident Summer Summer	Mountain Valleys Wetland, Open Country Open Country Open Country Open Country-Plains Mountains Open Country Plains, Open Valleys/ Cliffs Plains, Open Valleys/	Fairly Common Rare Rare Uncommon Uncommon Common Uncommon Common Uncommon
Galliformes Ring Necked Pheasant	Resident	Plains-Roadsides	Uncommon
Columbiformes Mourning Dove	Summer	Roadsides, Open Country	Common
Strigiformes Great Horned Owl Burrowing Owl	Resident Summer	Forests Grasslands, Prairie Dog Towns	Fairly Common Uncommon
Long-eared Owl Short-eared Owl	Winter Winter	Riparian, Sagebrush Grasslands, Wetlands	Uncommon Uncommon
Caprimulgiformes Common Nighthawk Common Poor Will	Summer Summer	Dry Forests Junipers	Fairly Common Fairly Common
Apodiformes Black Swift White Throated Swift	Summer Summer	Cliffs Rock Outcrops	Fairly Common Common
Piciformes Lewis' Woodpecker Downy Woodpecker Hairy Woodpecker Northern Flicker	Resident Resident Resident Resident	Open Forests Riparian, Forests Riparian, Forests Open Forests	Uncommon Fairly Common Fairly Common Abundant
Passiformes Say's Phoebe	Summer	Open Country	Uncommon
Alauvidae Horned Lark	Resident	Summer-Alpine Winter-Plains	Fairly Common

Order/Species	Time of <u>Year</u>	Habitat	Frequency
Hirundinidae Cliff Swallow	Summer	Riparian, Open Country	Abundant
Corvidae Blue Jay Scrub Jay Black Billed Magpie American Crow Common Raven	Resident Resident Resident Resident Resident	Plains-Around Houses Shrub Areas, Junipers Agricultural, Open Areas, Forests Valleys-low Almost everywhere	Fairly Common Rare Abundant Common Common
Paridae Bushtit	Resident	Shrublands, Riparian	Fairly Common
Sittidae Pygmy Nuthatch	Resident	Ponderosa Pine	Abundant
Troglodytidae Rock Wren Canyon Wren House Wren	Summer Resident Summer	Rocky Cliffs, Canyons Cliffs Shrub areas, Forests	Fairly Common Fairly Common Common
Sylviidae Blue-gray Gnatcatcher	Summer	Shrub areas	Casual
Turdidae Mountain Bluebird American Robin	Summer Resident	Open Country Almost everywhere	Common Abundant
Mimidae Northern Mockingbird Brown Thrasher	Migrant/ Winter Migrant/ Winter	Open Forests, Open Country, Agricultural Agricultural, Riparian	Rare Uncommon
Bombycillidae Bohemian Waxwing Cedar Waxwing	, Winter Spring/Fall	Shrub areas Open Woods	Irregular Fairly Common
Laniidae Northern Shrike	Winter	Open Country, Riparian	Fairly Common
Vireonidae Solitary Vireo	Summer	Ponderosa Pine	Fairly Common
Parvlidae Virginia's Warbler	Summer	Riparian, Open Country	Fairly Common
Icteridae Western Meadowlark	Resident	Open Country	Abundant

Lazuli Bunting

Indigo Bunting

Tree Sparrow

Green-tailed Towhee

Rufous-sided Towhee

Clay-colored Sparrow

White Throated Sparrow Winter

Chipping Sparrow

Savannah Sparrow

Dark-eyed Junco

Cassin's Finch

Lesser Goldfinch

American Goldfinch

Lapland Longspur

Vesper Sparrow

Lark Bunting

Rosy Finch

Fringillidae

Time of Year

Summer

Summer

Summer

Summer

Winter

Summer

Summer

Summer

Summer

Winter

Summer

Resident

Resident

Resident

Resident

37

Migrant

Habitat

Shrub areas Riparian, Shrublands Riparian, Shrublands Riparian, Shrubland Brushy areas Open Wood Riparian, Grasslands Grasslands, Shrublands Grasslands, Agricul. Grasslands Cliffs Brush near Forests Grasslands, Agricul. Open Country Open Forest Brushy Areas Brush Areas

Frequency

Common Rare Fairly Common Abundant Common Common Fairly Common Common Rare Rare Uncommon Common Irregular Fairly Common Irregular Fairly Common Common

Potential Natural Fauna of Rabbit Mountain (D=Documented; H=Hypothetical; E=Extirpated)

Common Name

Insectivores masked shrew (H) montane shrew (H) dwarf shrew (H) Merriam's shrew (H) least shrew (H)

Bats

little brown bat (H) long-eared myotis (H) fringed myotis (H) long-legged myotis (H) small-footed myotis (H) silver-haired bat (H) big brown bat (H) hoary bat (H) Townsend's big-eared bat (H)

Rabbits & Allies Nuttall's cottontail (H) desert cottontail (D) white-tailed jackrabbit (H) black-tailed jackrabbit (H)

Rodents

Teast chipmunk (H) Colorado chipmunk (D) yellow-bellied marmot (H) Wyoming ground squirrel (H) thirteen-lined ground squirrel (H) spotted ground squirrel (H) rock squirrel (H) golden-mantled ground squirrel (H) black-tailed prairie dog (D) fox squirrel (H) Abert's squirrel (H) northern pocket gopher (D) plains pocket gopher (H) olive-backed pocket mouse (H) plains pocket mouse (H) silky pocket mouse (H) hispid pocket mouse (H) Ord's kangaroo rat (D) plains harvest mouse (H) western harvest mouse (D)

Scientific Name

Insectivora <u>Sorex</u> <u>cinereus</u> <u>Sorex</u> <u>monticola</u> <u>Sorex</u> <u>merriami</u> <u>Cryptotis</u> parva

Chiroptera <u>Myotis</u> <u>lucifugus</u> <u>Myotis</u> <u>evotis</u> <u>Myotis</u> <u>thysanodes</u> <u>Myotis</u> <u>volans</u> <u>Myotis</u> <u>leibii</u> <u>Lasionycteris</u> <u>noctivagans</u> <u>Eptesicus</u> <u>fuscus</u> <u>Lasiurus</u> <u>cinereus</u> <u>Plecotus</u> townsendii

Lagomorpha Sylvilagus nuttallii Sylvilagus audubonii Lepus townsendii Lepus californicus

Rodentia Tamias minimus Tamias quadrivittatus Marmota flaviventris Spermophilus elegans Spermophilus tridecemlineatus <u>Spermophilus</u> <u>spilosoma</u> <u>Spermophilus</u> <u>variegatus</u> Spermophilus lateralis Cynomys ludovicianus <u>Sciurus</u> niger Sciurus aberti Thomomys talpoides Geomys bursarius <u>Perognathus fasciatus</u> Perognathus flavenscens Perognathus flavus Perognathus hispidus Dipodomys ordii Reithrodontomys montanus Reithrodontomys megalotis

Rodents deer mouse (D) rock mouse (H) northern grasshopper mouse (H) Mexican woodrat (D) meadow vole (H) montane vole (H) long-tailed vole (H) prairie vole (D) muskrat (H) meadow jumping mouse (H) porcupine (D) Carnivores

coyote (D) gray wolf (E) red fox (H) swift fox (H) gray fox (H) black bear (H) grizzly bear (E) raccoon (H) ringtail (H) ermine (H) long-tailed weasel (H) black-footed ferret (E) badger (H) spotted skunk (H) striped skunk (H) mountain lion (H) bobcat (D)

Even-toed Ungulates wapiti or elk (D) mule deer (D) white-tailed deer (D) pronghorn (E) bison (E) bighorn sheep (E) Rodentia (continued) <u>Peromyscus</u> <u>maniculatus</u> <u>Peromyscus</u> <u>difficilis</u> <u>Onychomys</u> <u>leucogaster</u> <u>Neotoma mexicana</u> <u>Microtus</u> <u>montanus</u> <u>Microtus</u> <u>longicaudus</u> <u>Microtus</u> <u>longicaudus</u> <u>Microtus</u> <u>longicaudus</u> <u>Microtus</u> <u>zibethicus</u> <u>Zapus hudsonicus</u> <u>Erethizon dorsatum</u>

Carnivora <u>Canis</u> <u>latrans</u> <u>Canis</u> <u>lupus</u> Vulpes vulpes Vulpes velox Urocyon cinereoargenteus Ursus americanus Ursus arctos Procyon lotor Bassariscus astutus Mustela erminea Mustela frenata <u>Mustela</u> nigripes Taxidea taxus Spilogale putorius Mephitis mephitis Felix concolor Felis rufus

Artiodactyla <u>Cervus elaphus</u> <u>Odocoileus hemionus</u> <u>Odocoileus virginianus</u> <u>Antilocapra americana</u> <u>Bison bison</u> <u>Ovis canadensis</u>