BALD MOUNTAIN SCENIC AREA
Management Plan

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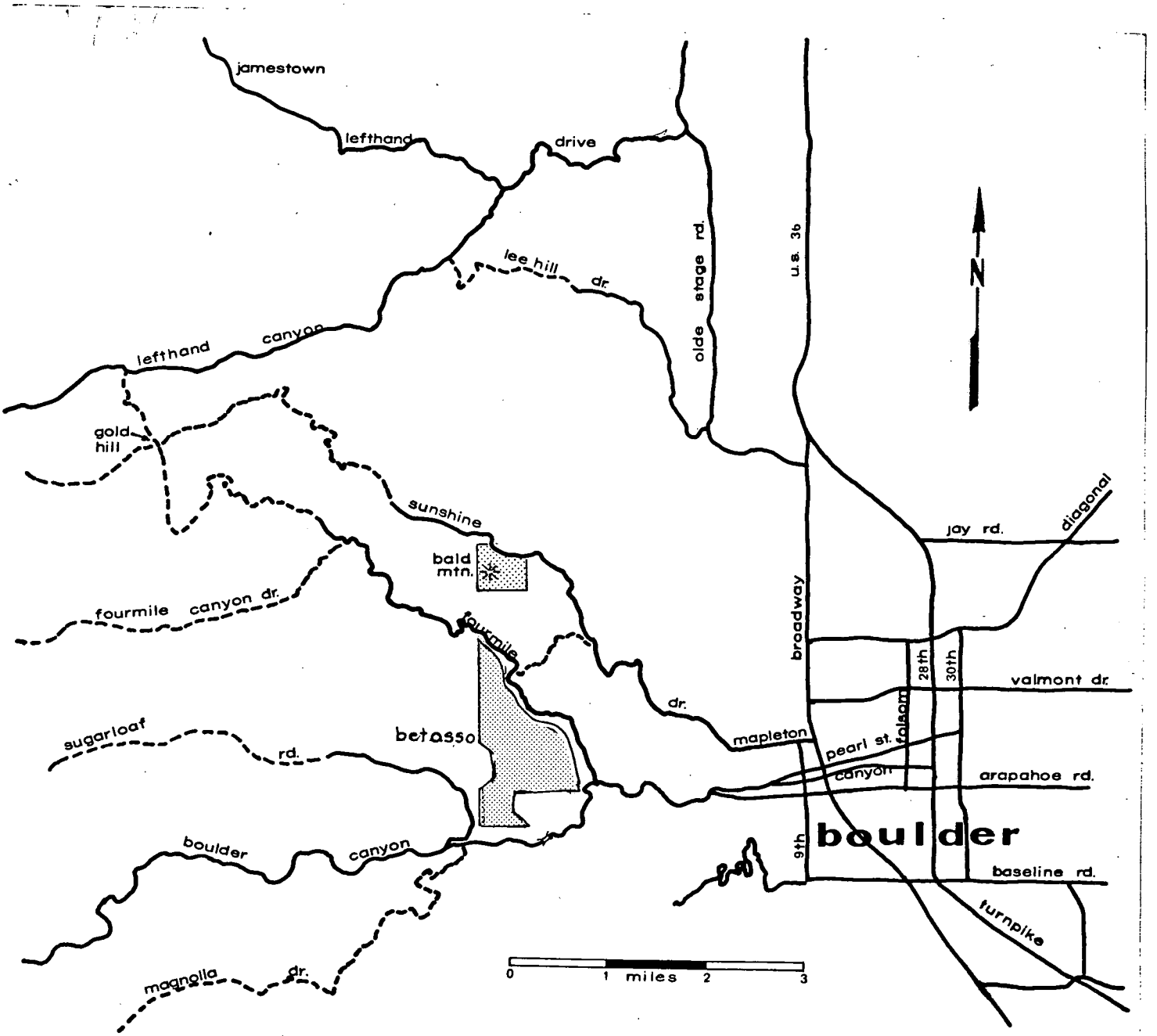
1. GENERAL DESCRIPTION OF PROPERTY

Bald Mountain Scenic Area is 108 acres of ponderosa pine forests and meadows located five miles west of the Boulder city limits on the south side of Sunshine Canyon Drive (County Road 52). It lies in Section 16, Township 1 North, Range 71 West (Figure 1). Bald Mountain is the major peak in this section with an elevation of 7160 feet above sea level. It may be observed from the plains as well as from other parts of Boulder County. From its summit, visitors have a scenic view of both the great plains and the Continental Divide.

Figure 1


jamestown
lefthand
drive
lee hill dr.
olde stage rd.
u.s. 36
N
lefthand canyon
gold hill
sunshine
bald mtn.
jay rd.
diagonal
fourmile canyon dr.
fourmile dr.
broadway
28th
30th
valmont dr.
sugarloaf rd.
betasso
mapleton
pearl st.
canyon
folsom
arapahoe rd.
boulder
9th
boulder canyon
baseline rd.
turnpike
magnolia dr.
0 1 miles 2 3

2. MANAGEMENT OBJECTIVES

The Bald Mountain Scenic Area is leased from the Colorado State Board of Land Commissioners by Boulder County and managed by the Parks and Open Space Department as a low intensity open space leisure area, wildlife sanctuary and nature study site. Specific objectives for the park include the following:

1. Manage the entire property as a wildlife sanctuary by maintaining or enhancing natural food, cover and nesting areas.
2. Manage the property to encourage restoration of presettlement vegetation and to serve as an outdoor laboratory of a typical montane ecosystem.
3. Provide visitors with trails and other facilities, as needed, to enjoy Bald Mountain Scenic Area and the scenic vistas from the park.
4. Provide on-site environmental education opportunities for the public.
5. Provide visitors with a safe outdoor recreation experience.
6. Maintain the forest resource of Bald Mountain Scenic Area to prevent fire hazards for adjacent landowners.

3. DESCRIPTION OF PARK

3.A Physical Characteristics

3.A1 Location

Bald Mountain Scenic Area is the 108 acres of the SE¼ of Section 16, Township 1 North, Range 71 West (6th P.M.) that is south of County Highway 52. The park is situated at elevations from 6400 feet on the east to 7160 feet at the summit.

Bald Mountain Scenic Area is surrounded primarily by private land.

3.A2 Climate

Bald Mountain Scenic Area has a continental, semi-arid climate that is greatly influenced by the nearby Front Range of the Rocky Mountains. The greatest amount of precipitation occurs during spring and summer, with an average 23 inches of precipitation occurring annually. The average annual temperature is 47°F with extremes as great as 40°F from daytime highs to nighttime lows. The low relative humidity of the front range facilitates these daily extremes. There are, on the average, 125 frost free days in the vicinity of Bald Mountain (Mutel, 1976).

3.A3 Geology

Bald Mountain Scenic Area is underlain by a rock formation known as the Boulder Creek Granodiorite. Geologists estimate this rock at 1.7 billion years old, formed during an ancient episode of mountain building in the area.

Grandiorite is an igneous rock; that is, one that has solidified from molten material. This molten material, known as magma, had its origin deep beneath the earth's surface. During mountain building, forces within the earth pushed the magma upward through a conduit that is deeply buried in the area between Nederland, Gold Hill and Ward. The magma never quite reached the earth's surface, but spread southward below the surface. The magma cooled slowly, and the mineral crystals grew large enough to be visible to the naked eye.

Mountains that existed in the area were eroded, and the area underwent a number of geologic changes that spanned millions of years. Mountain ranges uplifted the area approximately 50 miles to the west, and the climate underwent many changes, ranging from tropical to desert-like. An ocean covered the area for millions of years, depositing thousands of feet of sediment. The sea gradually withdrew from the area, and the present Rocky Mountains began to uplift the area around 70 million years ago. During this great mountain building episode, mineral rich solutions were injected into cracks of the older granodiorite. These solidified to form the rich mineral veins that have been mined in the Colorado Mineral Belt. At Bald Mountain Scenic Area, gold or silver was mined from the small cave-type mine in the south part of the property.

Erosion has been the predominant force shaping the area since the uplift, stripping off between 15,000 and 20,000 feet of rock layers to expose the harder Boulder Creek Granodiorite.

Runoff from snow and rain has sculpted the gullies and gulches seen at Bald Mountain Scenic Area. The granodiorite is well exposed in the rugged southern portion of the property. The gently sloping meadow in the northern part of the park was formed as soil was washed down into this area from the summit of Bald Mountain.

3.A4 Soils

In a soil survey of Boulder County (Soil Conservation Service, 1975), Bald Mountain Scenic Area was found to have Juget Series soils on the forested hillsides and Peyton Series soils underlying the more gently sloping meadows (Figure 2).

The Juget-Rock outcrop complex that is present is approximately 50% Juget gravelly sandy loams, 30% rock outcrop, and 20% Peyton Soils. These soils are excessively drained having great permeability despite the ability to take in water readily. However, the erosion hazard is high because bedrock is very near the surface. Slopes are nine to fifty-five percent.

In a profile of Juget series substrate, the surface layer, usually approximately six inches thick, is a dark gray, very gravelly sandy loam. The underlying substrate is approximately five inches of very gravelly loamy sand. These soils are slightly acid. Juget series soils have formed from weathered granite on mountain slopes and ridges. The native vegetation is typically ponderosa pine in warm, dry habitats and Douglas fir in moist, cool settings.

Peyton series soils are very gravelly loamy sands that are deep, well drained and have moderate permeability. The surface horizon, approximately 11 inches thick, is a dark gray, very gravelly loamy sand. The underlying substrate can reach depths of 60 inches from the surface and are a more pale gravelly loamy sand. Peyton soils formed on upland hills in weathered loamy and sandy material that has been locally transported. The Peyton-Juget complex, which is found on Bald Mountain Scenic Area, is approximately 65% Peyton soils, 20% Juget soils, 15% dark colored alluvium. These soils are found in areas that have 5-20% slopes. The native vegetation is typically tall grasses and scattered ponderosa pine.

3.A5 Topography

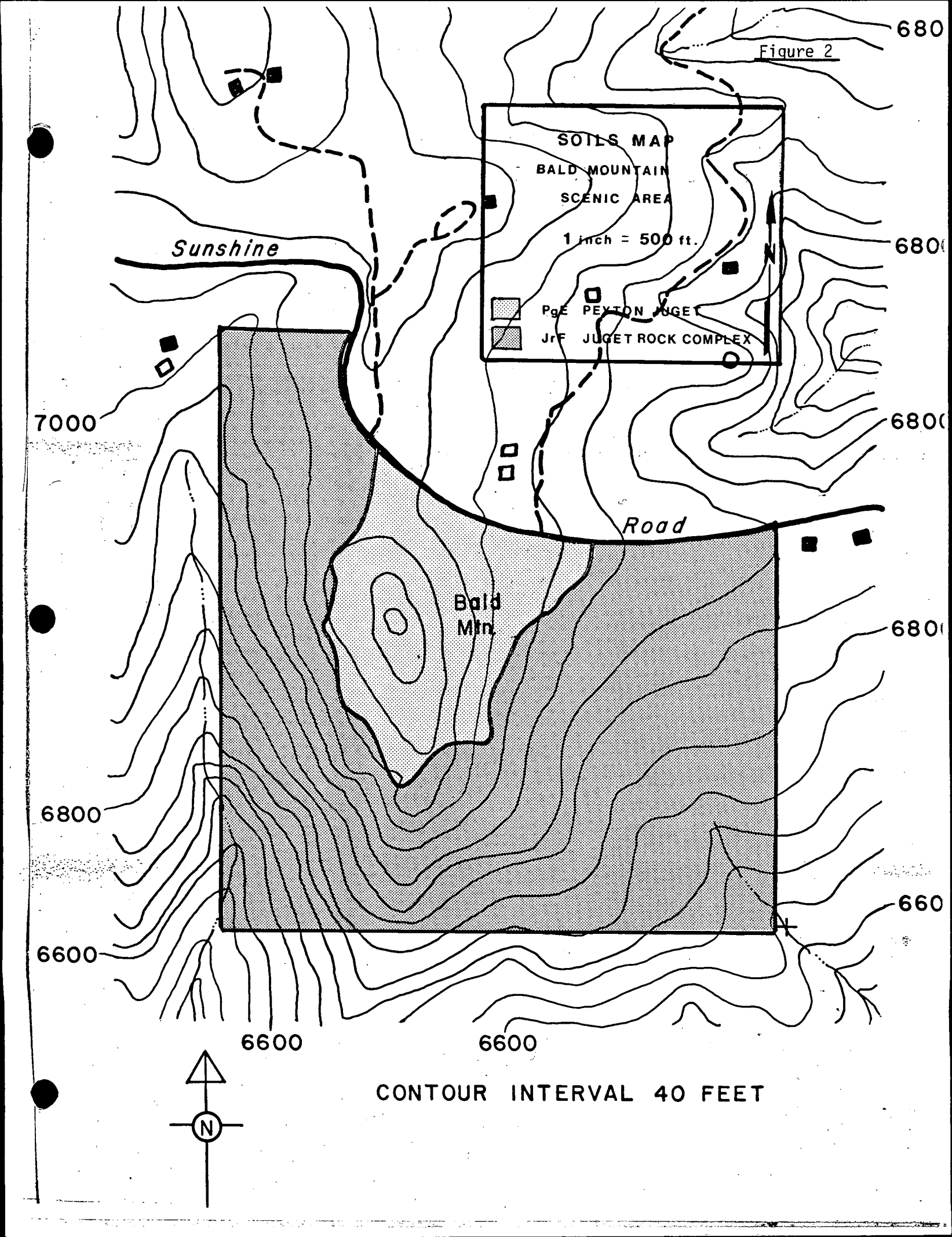
Bald Mountain Scenic Area lies within the great physiographic province known as the Southern Rocky Mountain Province. The rolling foothills topography seen today at Bald Mountain Scenic Area resulted from relatively recent geologic events coinciding with or following the last great series of mountain uplifts over the past 70 million years. Since the area was uplifted, erosion has been the dominant force carving the present topography. Rain and snowmelt waters have formed the gullies and gulches that carry the runoff to Fourmile and Boulder Creek to the south (Figure 3).

Bald Mountain is the highest peak of the section, reaching an elevation of 7,160 feet. The southwest portion of Bald Mountain Scenic Area is relatively rugged, with steep slopes and exposed rock outcrops. Moderate to gentle slopes are found in the north and northeast areas of the park.

3.A6 Hydrology

There are no permanent streams flowing through Bald Mountain Scenic Area. Several small gulches, including Short Cut Gulch, drain the area, emptying

Figure 2


SOILS MAP
BALD MOUNTAIN
SCENIC AREA
1 inch = 500 ft.
N
PgE PEYTON JUGET
JrF JUGET ROCK COMPLEX
Sunshine
Road
Bald Mtn.
7000
6800
6600
6600
6600
680
680
680
680
660
N
CONTOUR INTERVAL 40 FEET

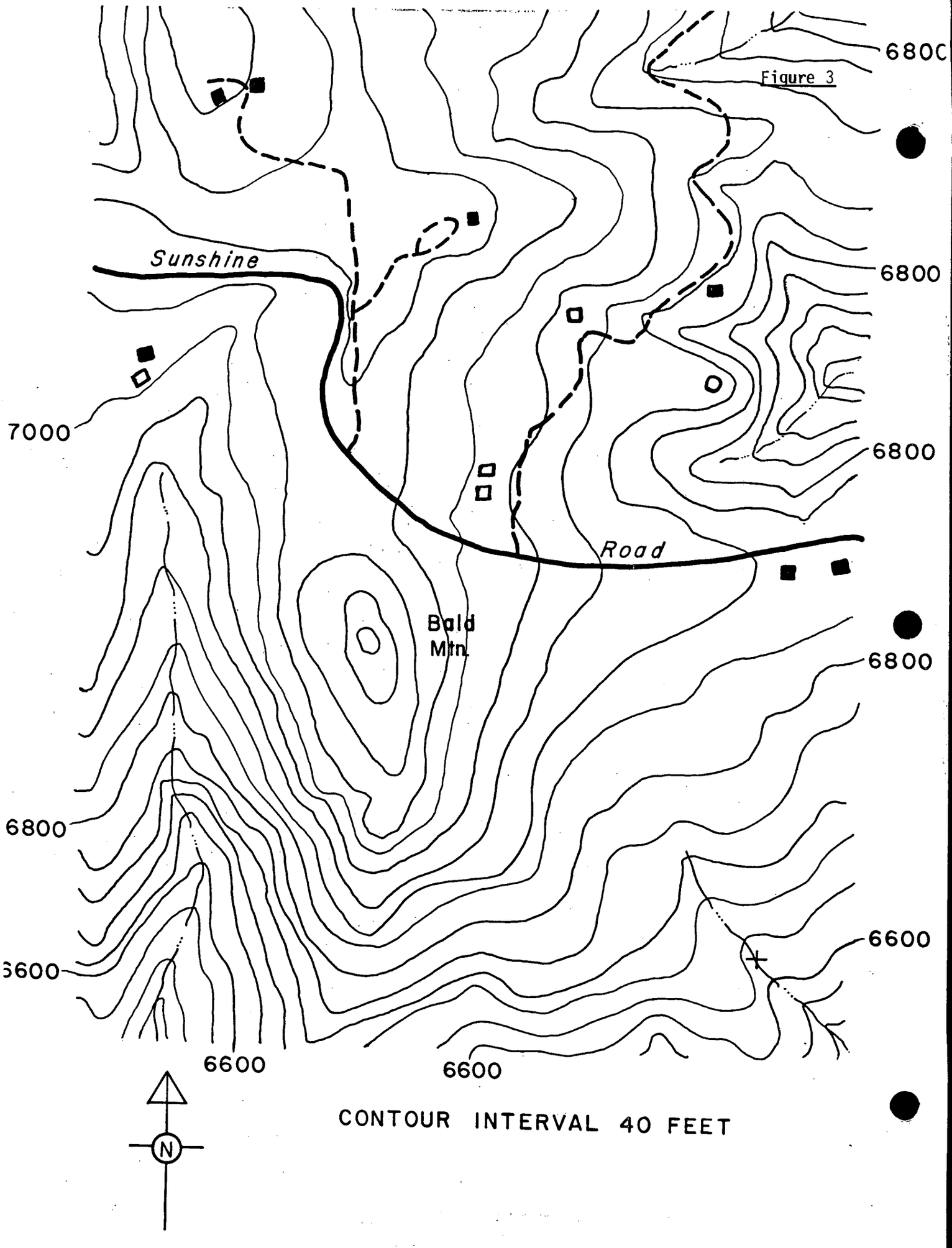


Figure 3
6800
Sunshine
6800
7000
6800
Road
Bald
Mtn.
6800
6800
6600
3600
6600
6600
N
CONTOUR INTERVAL 40 FEET

into Fourmile Creek. Fourmile Creek flows southeast to Middle Boulder Creek, which drains most of the southern half of Boulder County.

Precipitation at Bald Mountain Scenic Area falls in the form of rain (56%) and snow (44%) (Barry, 1972). The steep topography in the southern part of the area allows runoff to reach streams relatively quickly. Because of the limited storage capacity of the hard, crystalline rocks found at Bald Mountain Scenic Area, much of the precipitation returns to the atmosphere by evapo-transpiration (direct evaporation and transpiration by vegetation). Only a portion of the amount of rainwater that falls upon a drainage basin flows out as streams. Much evaporates, some is used by plants, and some seeps into the ground. The crystalline rocks store water in cracks, and serve as water table aquifers only where the rock has been fractured. Water may move more rapidly through the fractures that occur in these crystalline rocks. The rocks have a median measured depth to water of 27.5 feet below the surface (Hall, Hillier, Cain and Boyd, 1980) in Boulder County in a sample of 149 wells. Median well yields of 54 wells sampled in crystalline rocks of the county were 3 gallons per minute. Generally, water quality from the crystalline rocks is suitable for drinking, although pollution does exist in some locations thoroughout Boulder County.

3.B Biological Description

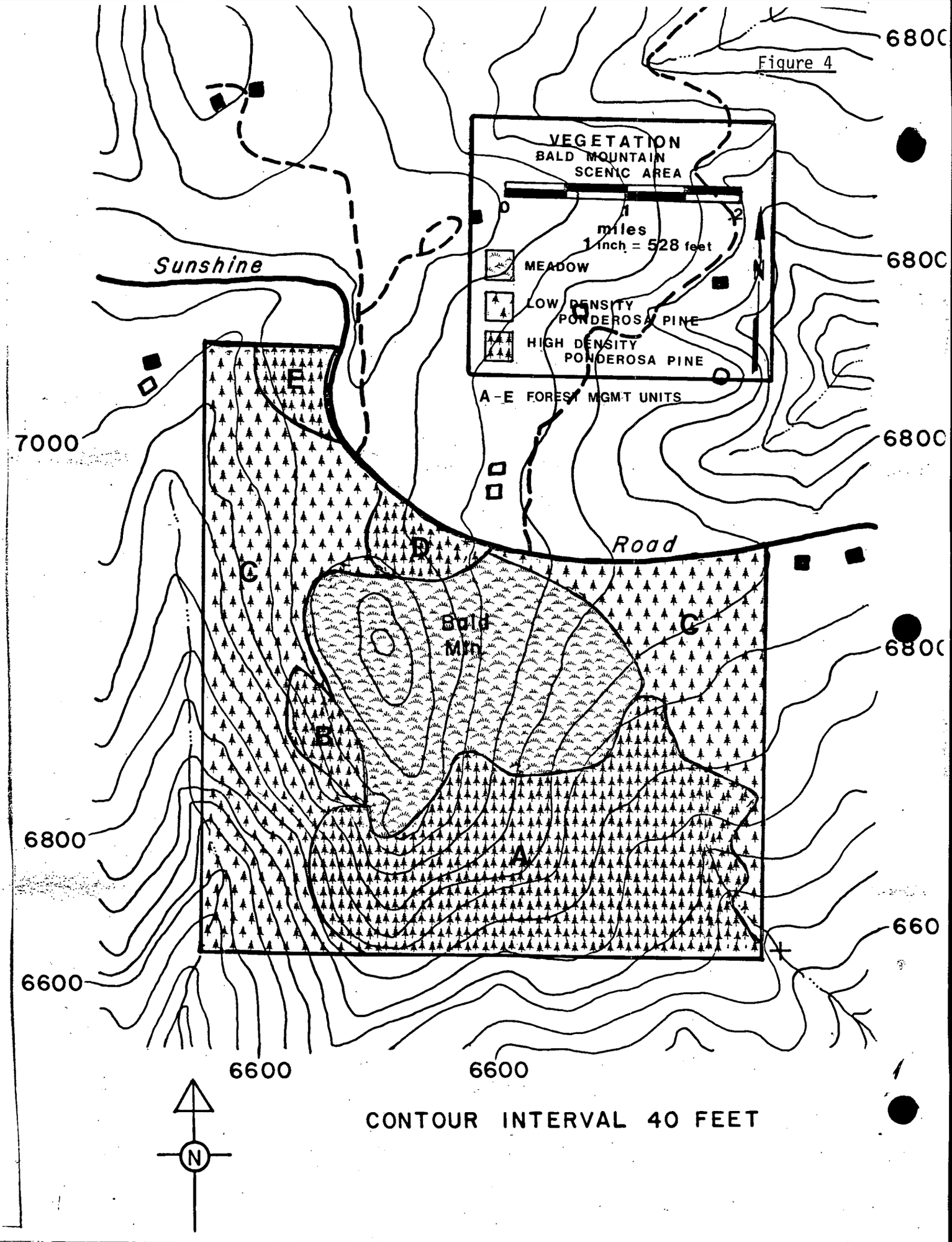
3.B1 Ecosystem

Bald Mountain Scenic Area is in the foothills of the Front Range - the major range of the Southern Rocky Mountains (Fenneman, 1931, Thornbury, 1965). Ecosystems present today in this region have developed through climatic variability in the Quaternary and recent time. There have been three cycles of cooling and warming. During the cooling trends, or neoglacial periods, small glaciers formed in high mountain cirques and during warm periods these glaciers melted (Richmond, 1972). The coolest period within the last 4000 years was 1200 to 1900 years before present (Bray, 1971). Since many of the major forest tree species became established under cooler conditions than exist today, some ecologists believe these trees do not represent what could become established under current climatic conditions which are considerably warmer (Peet, 1981).

3.B2 Flora

Bald Mountain Scenic Area can be stratified into several distinct ecosystems: meadow, ponderosa parkland, and ponderosa forest based on overstory tree coverage and basal area. In the summer of 1984, these stratifications were initially identified from USFS aerial photographs (Figure 4). Staff members of the Environmental Resources Division of the Parks and Open Space Department ground-verified the stratifications and floristically described each ecosystem. One hundred and six species were documented. Nomenclature follows Rocky Mountain Flora (Weber, 1976). The floristic composition of each ecosystem was found to be somewhat representative of presettlement vegetation. Several species, such as cheatgrass (Bromus tectorm) are exotic weeds and were probably introduced with grazing. Other native plants, such as prickly pear cactus (Opuntia compressa) and pasture sage (Artemisia frigida) most likely occur in greater abundance currently than in presettlement time also because of grazing. No stands of noxious weeds were located on the property. Although no attempt was made to compile a complete foristic list of Bald Mountain Scenic Area, the observations collected during ground verification along with previous records have resulted in a relatively compre-

Figure 4


VEGETATION
BALD MOUNTAIN
SCENIC AREA
0
1
2
miles
1 inch = 528 feet
MEADOW
LOW DENSITY
PONDEROSA PINE
HIGH DENSITY
PONDEROSA PINE
A-E FOREST MGMT UNITS
N
Sunshine
Road
Bald
Mtn.
A
B
C
D
E
7000
6800
6600
CONTOUR INTERVAL 40 FEET

hensive list for this park. The floristic list is presented as Appendix 1. The following paragraphs describe each ecosystem.

The meadow The meadow ecosystem, comprising 22 acres of Bald Mountain Scenic Area is dominated by a mosaic of grass species including western wheatgrass (Agropyron smithii), bluegrama (Bouteloua gracilis), side oats grama (Bouteloua curtipendula), cheatgrass (Bromus tectorum), smooth brome (Bromus inermis), june grass (Koeleria macrantha), mountain muhly (Muhlenbergia montana), switch grass (Panicum virgatum), bluegrasses (Poa pratensis and Poa compressa), green needle grass (Stipa virdula) and needle and thread grass (Stipa comata). Numerous forb species are components of this ecosystem, but are not as dominant as the grasses. These include miners candle (Cryptantha virgata), prickly pear cactus (Opuntia compressa), hairbell (Campanula rotundifolia), yarrow (Achillea lanulosa), western ragweed (Ambrosia psilostachya), pasture sage (Artemisia frigida), fringed sage (Artemisia campestris), wild geranium (Geranium caespitosum) and carpet phlox (Phlox multiflora). Mature as well as seedling ponderosa pine (Pinus ponderosa) occur scattered throughout the meadow as do a variety of shrubs: woods rose (Rosa woodsii) and skunkbrush (Rhus trilobata). A complete list of meadow ecosystem plants and their abundances is presented in Appendix 2.a.

Ponderosa parkland (low density ponderosa pine) Scattered, mature ponderosa pine with a coverage of 30-50% co-dominate the ponderosa parkland ecosystem along with grasses including bluegrasses (Poa pratensis and Poa compressa) as well as several species of wheat grass, sand dropseed (Sporobolus cryptandrus), big bluestem (Andropogon gerardi), and cheatgrass (Bromus tectorum). Rocky Mountain juniper (Juniperus scopulorum), mountain mahogany (Cercocarpus montanus), buckbrush (Ceanothus fendleris), and cliff jamesia (Jamesia americana) are the common shrubs of this ecosystem. The forb species including prickly pear cactus (Opuntia compressa), hairy golden aster (Heterotheca villosa), wild geranium (Geranium caespitosum) and sulphur flower (Erigonum umbellatum), and the grasses are more common in areas of gradual slope, while the shrubs are the predominant understory species scattered among the rock outcrops. A complete list of ponderosa pine parkland ecosystem plants and their abundances is presented in Appendix 2.b.

Ponderosa forest (medium and high density ponderosa pine) Dense stands of ponderosa pine are found on 45 acres of Bald Mountain Scenic Area. The coverage exceeds 50% in most places of this forest ecosystem. The shrubs beneath the closed canopy do not exceed 5% coverage and are composed of Rocky Mountain juniper (Juniperus scopulorum), ponderosa pine (Pinus ponderosa), mountain mahogany (Cercocarpus montanus), wax currant (Ribes cereum), and cliff jamesia (Jamesia americana). The herb layer also does not exceed 5% coverage except in gaps where herb coverage may reach 25%. The herb layer is composed of many species including pasture sage (Artemisia frigida), hairy golden aster (Heterotheca villosa), sulphur flower (Erigonum umbellatum), wild geranium (Geranium caespitosum) and several species of grasses including blue grama (Bouteloua gracilis), cheatgrass (Bromus tectorum), and mountain muhly (Muhlenbergia montana). A complete list of plants present in the ponderosa pine forest ecosystem is listed as Appendix 2.c.

3.B3 Fauna

The wildlife of Bald Mountain Scenic Area is characteristic of ponderosa pine and meadow ecosystems of the lower montane life zone. Incidental

observations of wildlife have been recorded by park rangers and volunteers since the property was leased by Boulder County Parks and Open Space Department in 1973. During the vegetation inventory of 1984, staff recorded findings of wildlife and wildlife signs.

In the mid 1970's a live trap inventory study of small mammals was conducted in the area. Four plots were situated in four habitat types: 1)an open meadow, 2)an opening in dense forest, 3)a meadow near cliffs and 4)cliff side. This data was apparently not tabulated by habitat, but the data was added to the inventory of Bald Mountain Scenic Area (Bald Mountain Scenic Area management plan, no date).

"Potential faunal lists" for Boulder County were compiled by habitat for the Environmental Resource Element of the Boulder County Comprehensive Plan The list of potential species for Bald Mountain Scenic Area is presented along with the fauna that has been documented as Appendix 3.a for mammals, as Appendix 3.b for birds, and as Appendix 3.c for reptiles and amphibians. Forty-four percent of the potential mammals occur at Bald Mountain Scenic Area, 46% of potential birds occur there, and 29% of the reptiles and amphibians have been documented. The relatively low diversity of animals recorded at Bald Mountain Scenic Area may be explained by three factors: 1)the small size of the park, 2)the lack of water in the park and 3)the lack of specific wildlife studies to adequately inventory the fauna present.

The small size of the park, coupled with the fact that the surrounding areas are residential, precludes certain reclusive wild ranging species such as black bear (Ursus americanus) and mountain lion (Felis concolor) from utilizing the area. An adult male black bear was relocated on Bald Mountain June 21, 1984 by the Division of Wildlife but it did not stay around.

Water is a potentially limiting factor for some wildlife in the park. A spring is located immediately to the northwest of Bald Mountain Scenic Area in Short Cut Gulch. Another spring has been noted to the southeast of the park. A stream runs through the gulch during the spring and summer, drying in late August. The spring provides water to free ranging species most of the year.

It is likely that systematic wildlife inventories would increase the number of documented species at Bald Mountain Scenic Area, particularly of inconspicuous and less common animals.

A fourth factor which could influence the presence of certain animals is the large number of loose dogs frequently seen roaming the park area.

Mammals Twenty species of mammals have been documented to occur at Bald Mountain Scenic Area. A herd of mule deer (Odocoileus hemionus) utilize Bald Mountain Scenic Area. The herd was recorded to number 16-18 head in the mid-1970's. Carnivores observed in the park include coyote (Canis latrans), red fox (Vulpes vulpes), short-tailed weasel (Mustela erminea), long-tailed weasel (Mustela frenata), and bobcat (Felis rufus). Nuttall's cottontail (Sylvilagus nuttalli) and white tailed jackrabbit (Lepus townsendii) also occur in the park. A variety of rodents and bats have also been documented at Bald Mountain Scenic Area.

Of the mammals documented to utilize Bald Mountain Scenic Area, two have special status in the Boulder County Comprehensive Plan. Bobcat is a species that is believed to be undergoing a long-term, non-cyclical population decline. Loss of large mammal habitat as well as over-trapping may have contributed to this species decline in Boulder County.

Abert's squirrel (Sciuris aberti) is a species known to have restricted habitat, in this case, ponderosa pine ecosystems. These dark brown, black or gray tufted-eared squirrels are found only where there are ponderosa pines because they depend on the pines for feeding and nesting. Abert's squirrels feed on pine cones as well as the inner bark of pine twigs.

Birds Thirty-eight species of birds have been documented at Bald Mountain Scenic Area; 22 of these are resident species of Boulder County. The remainder are migrants or casual visitors to the county. No inventories have been done to determine which species are actually utilizing the park for breeding.

American kestrel (Falco sparverius), common nighthawk (Chordeiles minor), and mountain bluebird (Sialia currucoides) are species that have been documented at Bald Mountain Scenic Area and are listed by the Boulder County Comprehensive Plan as undergoing non-cyclic long-term population declines. All three species are on the American Birds Blue List of declining species (Tate and Tate, 1982). The American kestrel is the only one of the three species not believed to be declining in Boulder County.

Five species are listed by the Boulder County Comprehensive Plan as having habitat restrictions. Northern Goshawks (Accipiter gentilis) and red tailed hawks (Buteo jamaicensis) are two raptor species that have been documented at Bald Mountain Scenic Area. Goshawks prefer forested ecosystems, while red tailed hawks prefer open country. Hairy woodpeckers Picoides villosus) are primarily cavity nesters that utilize dead standing trees for food and nesting and are therefore restricted to mature, forested ecosystems. Pygmy nuthatches (Sitta pygmaea) are partial to ponderosa pine ecosystems. Female pine cones are the prefered food source for pygmy nuthatches and they also nest in cavities of these trees (Robbins, Bruun, Zim, Singer, 1966). Gray-headed juncos (Junco hyemalis) are restricted to the forest meadow ecotone and are primarily ground feeders.

All of these species of restricted habitats are considered "management indicator species" by the U.S. Forest Service. The pygmy nuthatch has also been characterized as a "Stenotopic bird" by the Colorado Division of Wildlife (Kingery and Graul, 1978).

Reptiles and Amphibians Eastern fence lizard, (Sceloporus undulatus erythrocheidus) and prairie rattlesnake (Crotalus viridus) have been documented to occur at Bald Mountain Scenic Area.

3.C Cultural History

3.C1 Prehistory

Bald Mountain Scenic Area lies just north of areas that have been designated as archaeologically sensitive in the Boulder County Comprehensive Plan. Although there have been no reported archaeological finds at Bald Mountain Scenic Area, Boulder County was extensively utilized by early man.

The first evidence of man in Colorado dates back 18,000 to 20,000 years ago, near the end of the geologic epoch known as the Pleistocene. These early peoples, known as the Paleo-Indians, had a nomadic lifestyle hunting the mammoth elephants, giant bison, and other species of prey. The animals provided food, sinew for hafting weapons, hides for clothing and shelter, and bone for tools. Early hunters escaped the hot, dry periods on the plains by climbing a few thousand feet into the mountains, while large game could be taken in the summer months. For several thousand years the Paleo-Indians moved throughout the area, focusing on herds of late Pleistocene big game. Chipped stone tools are the only artifacts that indicate the presence of these people in the area.

By approximately 7,000 years ago, mammoths had become extinct, and attention shifted to previously unexploited resources. The Archaic peoples responded to the extinction of the large Ice-Age animals by seeking out plant resources as a staple food source. The hunters primarily sought deer, rabbits and bison, where available.

Around A.D. 1, the plains peoples adopted ceramic technology, a trait common to the Eastern Woodland peoples. Evidence that these people utilized natural shelters and open camp sites has been found. Later, certain Mississippian attributes filtered into the territory just east of the Continental Divide. This combination of hunting, gathering and horticulture continued for several hundred more years.

When modern history began around 1700 A.D., the Ute Indians inhabited the west and the Apaches the east. As time passed, the historic tribes of the Comanches, Cheyennes, Arapahoes and Kiowas lived on the Plains, while the Utes existed in the mountains. The Utes lived by hunting and gathering, and occasionally planting crops in stream valleys. Bison was the primary source of food, shelter and clothing. With the acquisition of the horse, Utes were able to travel more quickly down to the Plains.

The alpine zones west of Bald Mountain Scenic Area offered attractive resources, and seasonal occupations by all groups took place throughout most of known prehistoric time. The areas south and east of the park offered a place where early inhabitants could live within a one or two day travel to areas with high country game, as well as plains areas with bison and antelope.

3.C2 Recent History

Bald Mountain Scenic Area is owned by the State of Colorado and leased by the Boulder County Parks and Open Space Department. The federal government deeded this parcel of land as well as all of Sections 16 and 36 in Colorado to the state to provide the funding for schools. This legislation is the "Enabling Act" and was effective at Statehood in 1876. The State Board of Land Commissioners administers leases and sales of these "school sections". The County has leased Bald Mountain Scenic Area since May 11, 1973 for the "...purpose of a public park and public recreational purposes..." (Lease Agreement). From May, 1973 to May, 1983, the County paid $108.00 annually. From May, 1983 to May 1993, the County will pay $214.00 annually.

Prior to the County lease of Bald Mountain Scenic Area, the State Board of Land Commissioners leased the land for several uses. In 1896 Frank Weist and John Weist were granted a mineral lease for Bald Mountain Scenic Area.

Evidence of mining is found on the south, west and east slopes of Bald Mountain. It is not certain if this activity is from the mineral lease activity or from owners of two potential mining claims (#45377 and #45265) that are excluded from the state owned land (see Figure 1. These claims were patented on May 11, 1907 by E.W. Farmer. Rusted buckets, cans and pieces of tools have been found, remnants of mining activities in the late 1800's and early 1900's. Exploratory pits with tailings piled nearby remain. A cave type, cul-de-sac mine is located on the south fence line. Trees thoughout the area were cut for support timbers in shafts, for buildings, and for firewood.

Many gold mines and towns were located in this area of Boulder County in the late 1860's. The road extending up Sunshine Canyon that leads to Bald Mountain Scenic Area was begun in 1860 (Schooland, 1980). This road, the Gordon-McHenry Trail, extended to Sunshine Hill and then headed south to Four Mile Creek. The extension of the road past Bald Mountain Scenic Area was surveyed in 1960.

Grazing leases on Bald Mountain have also been granted since 1886 from the State Board of Land Commissioners. Mary Jones was granted a lease to graze the 40 acres in the NW¼ of the SE¼ of Section 16. She continued to utilize the property until 1916. The next grazing lease verified on record at the office of the State Board of Land Commissioners was granted to Emily and Lillie Jones of Gold Hill in 1936. The lapse of a lease agreement in the mid-1930's may have been due to the great drought. Information was not available to trace a complete lease history between 1936 and the first record in 1896.

3.C3 Current Use

In 1973, after the County assumed management of Bald Mountain Scenic Area, the park planner completed a site plan. A parking lot for 6-10 cars and a trail to the summit of Bald Mountain were developed on the property from this plan (Figure 5). A bulletin board is present at the trailhead. In 1983, the loading chute, used in the past for cattle operations, was restored and serves as part of the gate at the trailhead. Approximately 50 people visit Bald Mountain Scenic Area each weekend day during the summer, from Memorial Day to Labor Day. Activities include hiking, kite-flying, informal picnicking and mountain bike-riding. Many visitors hike the trail to the summit to view the panoramic scene of the plains and the Continental Divide. The average stay for a visitor at Bald Mountain Scenic Area is approximately 30 minutes.

Bald Mountain is also used several times a year for interpretive activities. Activities have included plant identification hikes, winter bird nature walks and a winter ecology snowshoe hike. In the mid-1970's a self-guided nature trail was developed for Bald Mountain Scenic Area. Appendix 4 are the brochures used on the trail. The trail markers were removed due to vandalism after several years of use.

4. MANAGEMENT CONSIDERATIONS

4.A Resource Managment

4.A1 Forest Management Plan

Introduction

The forest management section was prepared in October, 1984 and describes the condition of the forest based on field observations and on basal area measurements taken within each of the management units. Detailed inventory data was not available and, therefore, the plan is not a quantitative analysis based on sustained yield. The prescriptions are made with the intention of maintaining or improving the quality and diversity of the landscape commensurate with the present and future park usage.

Goals

The following goals have been identified as those which are most desirable to strive for at Bald Mountain Scenic Area. (1) To promote a healthy and vigorously growing forest through established silvicultural practices. (2) To maintain sufficient forest density and diversity to preserve wildlife habitat for birds and small mammals. (3) To reduce fire hazards. (4) To improve and/or restore natural and scenic qualities.

Any vegetative manipulation causes distruption of established habitats for various wildlife species. The key to any forest management activity is to identify which species will be adversely affected and which species will benefit from the manipulation. Once these populations have been identified a cognizant decision can be made as to how best to meet both the management needs within the forest and the habitat needs of the target wildlife species at the same time. Many potential problems regarding preservation of density and diversity can be resolved by evaluating the capability of the land to provide a balance of healthy trees and quality wildlife habitat. In general forestry practices such as pre-commercial and commercial thinning, overstory removal, clearcutting, and chemical control of herbaceous vegetation will no longer be used at Bald Mountain Scenic Area. In all cases the array of prescription options are considered with regard to the effects on wildlife and the most appropriate ones chosen for the protection of all aspects of the environment. According to the lease agreement, all management that involves sale of timber is prohibited without prior approval by the State Board of Land Commissioners. All forest management projects should be brought to the attention of this board.

Resource Evaluation

Forest Bald Mountain Scenic Area contains three timber stratifications: high density ponderosa pine, medium density ponderosa, and low density ponderosa. The timber types are classified as management units on Figure 6 and have been delineated according to species, site and density. Individual stands within a given management unit are lettered A, B, C, etc. Each management unit is described according to its condition. Each description is followed by a treatment prescription, when appropriate.

Insect and Disease Bald Mountain Scenic Area has a history of insect and disease problems. In the mid to late 70's the mountain pine beetle epidemic spread into the park from adjacent property killing groups of ten to one hundred trees. The majority of the damage occured on 25 acres in the western half of the property. By 1980 county crews and the Colorado State Forest

Service had cut, piled and fumigated over 95% of the infested trees, reducing the pine beetle population to to an endemic level. Inflight from adjacent areas was a problem for a few years after control, but the mountain pine beetle soon ran its course throughout the Sunshine Canyon area. The beetle epidemic was symptomatic of a problem which still exists in much of this park: overstocking which creates intense competition for soil nutrients, water, and sunlight. Competition weakens the trees and significantly increases their susceptibility to insects and disease.

Dwarf mistletoe infestations are found in scattered areas throughout the property. This parasitic plant has occupied ponderosa trees for many years in the northwest part of the park. Over 90% of the trees in this northwest area have severe mistletoe infestations. Many trees are either dead or dying, a condition which is negatively affecting the scenic quality along the nature trail. Also, there is evidence of the infestation spreading from Unit 2 into Units 1 and 3.

Description: Unit 1 (Stands A, B)

This unit occupies approximately 45 acres. It is a two-storied ponderosa pine forest type on an east facing slope (5 to 20%). About 75% of the stand is comprised of co-dominant trees 20 to 35 feet tall. Tree vigor varies with density. Some areas are open and contain trees with good form and vigor, but the majority of the stand is overstocked with stagnant groups of ponderosa pine with sparse, narrow crowns. These weak groups are competing for nutrients, water and sunlight and will continue to decline. The unit is insect and disease free except for Stand B which contains trees with a severe infestation of dwarf mistletoe. There is also evidence of top kill due to porcupine activity but the damage is minimal. Regeneration is poor or non-existant in this unit. The fire hazard is high due to the dense understory and ladder fuels.

Prescription: Unit 1

The overstocked condition of Unit 1 is the primary cause of suppressed tree growth, poor regeneration and a high fire hazard.

To correct these problems an improvement cut is recommended to reduce competition. Maintaining stocking level range will preserve the structural diversity of the area for birds. Diversity of habitat for wildlife is best maintained by harvesting narrow, irregular shaped strips parallel to the contours for maximum useful food producing area.

The actual stocking level of a specific strip will depend on the individual characteristics of the forest. The goal is to create a natural mosaic of tree densities to enhance scenic qualities and to preserve cover for wildlife. The thinning will also reduce the fire hazard.

Mistletoe trees in Stand B should be evaluated according to the class 6 system and possibly pruned or girdled to reduce the spread of this parasitic plant into Stand A. Girdling severely infested mistletoe trees will increase the number of snag trees for cavity nesting birds. Porcupine damaged trees should also be preserved for their wildlife values. Also reforestation along the nature trail with a non-mistletoe host species is desirable to provide diversity and to insure forest cover if the mistletoe continues to cause tree mortality. See range mangement section for planting recommendations.

Description: Unit 2 (Stand C)

This unit occupies 35 acres along the west side and the northeast corner of the property. It is a two storied ponderosa pine forest type. Slope ranges from 10% to 40%. The southern slope contains some Rocky Mountain juniper, which comprise less than 20% of the total stand. Most of this unit has been devastated by the mountain pine beetle and dwarf mistletoe (Arceutho bium americanum). This unit was sanitized in 1978 to control the pine beetle and to reduce mistletoe. While the mountain pine beetle problem has been effectively controlled, the mistletoe has invaded all the regeneration as well as the dominant and co-dominant trees. The stocking level is poor in this unit, under 30 sq. ft./ac., and it will continue to decline as the mistletoe kills most of the remaining ponderosa pines over the next twenty years.

Prescription: Unit 2

It is recommended that this stand be managed on a maintenance level. Due to the severe, widespread mistletoe infestation, little can be done to effectively reduce the problem short of a clear cut. Clear cutting is not recommended for this site due to the likelihood of windscouring. A combination of scarification and reforestation is the best method of maintaining forest cover in this unit. Reforestation of the entire unit is impractical, therefore, reforestation should be concentrated along the nature trail to maintain the scenic quality. Scarifying two strips four to six feet wide along the contour lines below the west trail loop will provide a seed bed for natural regeneration and a planting site for seedlings. The edges of each strip can be planted in the spring with Douglas fir and native shrubs to provide species diversity and to provide a wind break for the regeneration.

Description: Unit 3 (Stands D and E)

This unit is comprised of two small stands occupying five acres. They are two-storied ponderosa pine stands similar to Unit 1 except that they have been sanitized to control mountain pine beetle and mistletoe. The density range is 60 sq. ft./ac. to 90 sq. ft./ac. Both of the stands are highly visible from Sunshine Canyon Road. Stand E in the northern area is in good condition except for light mistletoe in some trees along the power line. Stand D along Sunshine Canyon Road contains a few groups of dense saplings and seedlings that are stagnating due to crowded conditions.

Prescription: Unit 3

Stand E needs no immediate attention, but should be carefully monitored for dwarf mistletoe using the class 6 method (Appendix 5) and then treated to prevent the mistletoe from spreading.

Stand D contains some dense patches of saplings and seedlings which require thinning to ensure the development of healthy trees. Ponderosa pine requires open park spacing to accomodate its shade-intolerant characteristics. Young trees and seedlings should be thinned to a 6x6 and 4x4 spacing respectively. This stand should also be monitored for dwarf mistletoe and treated accordingly.

4.A2 Range Management

The range management section is based on information collected during the vegetation survey of 1984. Since the management objectives for this park

focus on the ecological and recreational values rather than forage production, this is not a quantitative analysis of the forage.

Goals

The following are specific goals for the management of the grassland areas at Bald Mountain Scenic Area: (1) To promote a healthy grassland community as may have existed in presettlement times. (2) To maintain or improve wildlife habitat. (3) To reduce the risk of soil erosion in recently disturbed areas.

Resource Evaluation

Bald Mountain Scenic Area contains one grassland area in the central part of the park (Figure 4). Much of the remainder of the area is a ponderosa pine parkland that has a major grassland component. In July of 1973, several months after the County assumed management of Bald Mountain Scenic Area, a range analysis of the area was completed by the Colorado State Forest Service for the State Board of Land Commissioners. They concluded that the range was in fair condition with a declining trend. Bluegrass (Poa sp.), cheatgrass (Bromus tectorum) and needle and thread grass (Stipa comata) were reported to be the principal species present at this time. They also reported that the area had been severely overgrazed.

Data collected in 1984 (see Appendix 2.a)indicates that while bluegrass, cheatgrass and needle and thread grass are still common members of the grassland community, western wheatgrass (Agropyron smithii), bluegrama (Bouteloua gracilis), side-oats gramma (Bouteloua curtipendula), as well as several other species that are indicators of good range condition, have increased in abundance.

Prescription

Range improvement, in ponderosa pine-bunch grass ecosystems has most often been accomplished by seeding one or more forage species, such as crested wheatgrass (Agropyron smithii), yellow sweetclover (Melilotus officinale), smooth brome (Bromus inermis) and intermediate wheatgrass (Agropyron intermedium) (Paulsen, 1975). Since a management goal at Bald Mountain Scenic Area is to preserve or enhance the native ecosystems rather than increase forage yield, these standard practices are contradictory to the set objectives. All four species mentioned are introduced species that may readily outcompete native community components. Further, since grazing has been removed for eleven years, the range condition is improving without additional range improvements.

Revegetation

In areas that are disturbed, for instance along trails and parking lots, supplemental seeding may be necessary to reduce soil erosion and enhance the scenic quality of the area. The Plant Identification Network - an information system developed by the U.S. Fish and Wildlife Service - includes data on the vegetation potential and wildlife values of native and introduced plants. This information is presented in the floristic inventory (Appendix 1). In accordance with the management objectives, the following criteria were used to select species for revegetation: 1) all species should be native plants present at Bald Mountain Scenic Area, 2) all species should have at least one "good" rating for wildlife values, 3) no revegetation species should have a "weedy" character or necessarily favor disturbance, 4) all species should have

a low or medium establishment requirement rating, 5) all species should have a "medium or high" revegetation potential in either the short- or long-term category.

The following is a list of acceptable revegetation species for Bald Mountain Scenic Area. In all cases, an attempt should be made to plant species that are similar to those found in the surrounding environment.

Trees
Pinus ponderosa
Pseudotsuga menziesii
Juniperus scopulorum

Shrubs
Rhus trilobata
Ribes cereum
Rosa woodsii
Ceonathus fendleri
Prunus virginiana
Cercocarpus montanus

Vine
Clematis columbiana

Grasses
Muhlenbergia montana
Stipa virdiflora
Sitanion hystrix
Sporobolus cryptandrus
Schizarychium scoparius
Stipa comata
Agropyron smithii

Forbes
Helianthus pumilus
Potentilla fissa
Penstemon virens
Phlox multiflora

4.A3 Wildlife Management

The wildlife management section is based on information from incidental observations made from 1973-1984. Thus, the recommendations made are of a general nature to be applied to forest, range and recreation management at Bald Mountain Scenic Area.

Goals

Wildlife management recommendations are based on the following goals and objectives: (1) To enhance available wildlife cover and food. (2) To increase the wildlife data base for Bald Mountain Scenic Area.

Resource Evaluation

As discussed in the faunal description section Bald Mountain Scenic Area does not have a well documented animal inventory. It is recommended that efforts be made to increase the information base. In several other County parks, permanent wildlife surveys are being conducted by parks personnel to gather information on the density and diversity of animals present. Because of time constraints, Bald Mountain Scenic Area cannot be included in this system in the near future. These procedures may be followed to provide some of the base data:

Mammals Live trapping should be completed approximately every three years to determine diversity and density of small mammals at Bald Mountain Scenic Area. Twenty to twenty-five traps positioned along a mapped belt transect should provide the needed information. This study should be accomplished in July or August.

Winter track information would enhance the data base, as would any population estimates of larger mammals such as mule deer.

Birds Breeding birds and wintering birds can be easily surveyed by walking a belt transect 50 meters wide across several vegetation types (Figure 4). Spring birds would be surveyed April 15 to June 1 and winter birds from December 15 to March 1.

Special inventory consideration should be given to birds listed on the Boulder County Comprehensive Plan (see Appendix 3.b). All nests of these species should be carefully mapped and attempts should be made to estimate populations utilizing Bald Mountain Scenic Area.

Prescription-Forest Management

Since timber production is not a management goal for Bald Mountain Scenic Area, no forest management procedures should be administered without fully regarding the wildlife implications. The following are considerations which should be included in the forest management decision process (Wight, 1974):

1. Shortened rotation intervals - eliminating decadent stands of timber can adversely affect species of wildlife that are cavity nesters.
2. Use of herbicides - Use of herbicides to control shrubs and herbs reduces the structural diversity of the habitat.
3. Precommercial thinning - this eliminates trees that later will become snag trees.
4. Commercial thinning and Overstory Removal - removal of substandard trees further reduces the potential for snags for cavity nesters.
5. Clear cutting - completely eliminates forest habitat from the site.

Although, in recent years, forest managers have begun to recognize the value of snags, the long-term practice of intensive forest management with shortened rotation eliminates the potential for sufficient snag preservation. In a recent study of birds of a ponderosa pine community in Oregon, forested stands 61-199 years of age supported the greatest diversity of avifauna (89%) and the greatest diversity of nesting species (62). In this same study, 27% of all species were cavity nesters (Wight, 1974).

Recent studies conducted by the U.S. Forest Service recommended the following guidelines to maintain snags of sufficient quantity and quality to ensure adequate wildlife habitat in ponderosa pine forest (Cunningham, Balda, Bauda, 1980):

1) Diameter of snags should be greater than 33 cm.
2) Total height of snags should be greater than 6 m.
3) Percent bark cover should be greater than 40%.
4) Snags which have broken tops should be saved if they also fit the above criteria.
5) In areas where the available snags are below the size range stated above, the largest snags should be saved.
6) Snags with existing cavities should be given preference.
7) Secondary cavity nesters utilize the dead strips from lightening strikes. Since such trees are usually poor quality timber trees, they should be saved for immediate use by the birds and as a means of producing future snags.

8) Hard snags could be removed in preference to soft snags, if necessary, but if possible hard snags should be saved as territory and perching posts.

9) Those live ponderosa pines with dead tops should be left for nest and roost sites and for future snag replacement.

10) 12.8 snags per hectare should be left to maintain secondary cavity nesters at natural levels. (Staff recommends preservation of up to 13 of the best available snags per acre if this criteria cannot be met.)

The use of species with good wildlife value should be preferred in revegetation, as described in the range management section of this management plan. Also, the use of herbicides should be avoided, even in the control of weedy species.

4.B Visitor Protection/Recreation

4.B1 Recreational Facilities

At present, Bald Mountain Scenic Area provides the visitor limited hiking and limited picnic opportunities. The summit trail loop (1.2 miles) could be extended to the north to provide nearly 2 miles of trails at the park (see Figure 6). Since this park is close to high population areas, affords scenic views and is relatively level, this trail addition would provide a higher quality experience for special populations than is provided elsewhere in the vicinity.

It is also recommended that a restroom be provided near the trailhead-parking lot along with several picnic tables and grills.

These facility improvements are not intended to drastically increase the number of users of the park, but rather provide the current level of users with facilities to encourage longer duration visits to Bald Mountain Scenic Area.

4.B2 Patrol

Bald Mountain Scenic Area is visited up to three times per weekend during the summer (from Memorial Day to Labor Day) and twice per weekend from March to Memorial Day and Labor Day to November. The common violations include dogs off leash, illegal campfires and after dark park use. The current level of patrol is perceived as adequate.

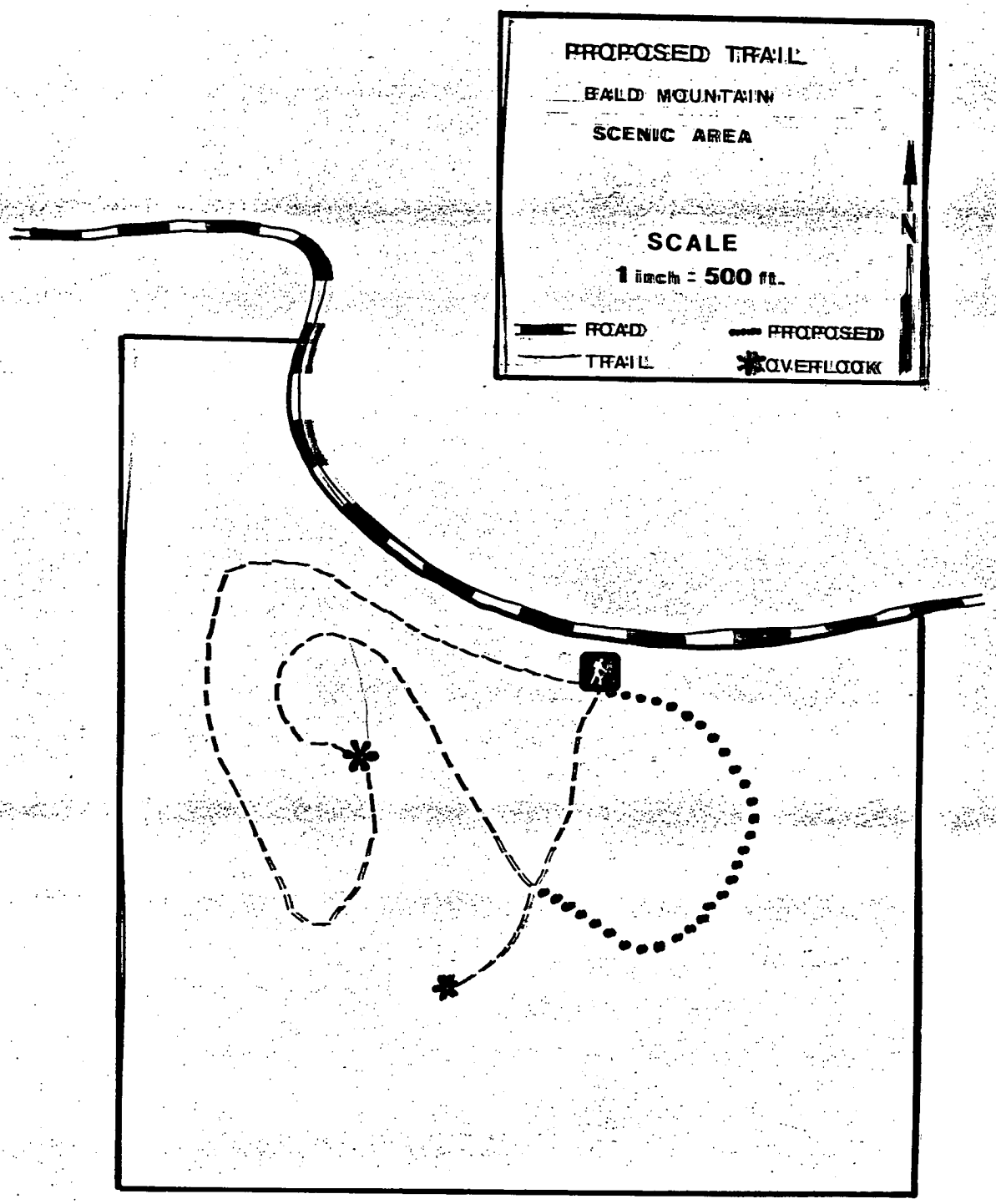
4.C Environmental Education

The use of Bald Mountain Scenic Area for environmental education should be promoted. The existing trail and proposed trail pass through natural and scenic areas that facilitate the interpretation of the lower montane ecosystem, as well as Boulder County natural history in general.

It is recommended that the self guided nature trail be reestablished at Bald Mountain Scenic Area, using metal-photo plate stations instead of brochures. Brochures are often discarded after one use or end up as litter along the trail. Metal photo plates with a UV-resistant clear polymer cover are relatively permanent and resistant to vandalism.

Volunteer Naturalists and staff should be encouraged to use Bald Mountain Scenic Area for Discover Nature Programs. It is also recommended that upcoming Discover Nature Programs be posted on the bulletin board at the park, as well as any other items of interest about the park. This area is particu-

Figure 6


PROPOSED TRAIL
BALD MOUNTAIN
SCENIC AREA
N
SCALE
1 inch = 500 ft.
ROAD
PROPOSED
TRAIL
OVERLOOK

larly well suited for special populations such as children and the elderly. The existing trail, however, is not handicap accessible. The proposed trail may be able to be engineered to be accessible.

The following table summarizes the interpretive potential for Bald Mountain Scenic Area.

	Naturalist Led Programs	Exhibits	Self-Guided Trails	Publications
Cultural History				
General				P
Natural History				
General Overview			P	S
Flora	P		S	
Fauna	P		S	
Ecology (winter, forest, grassland)	P		S	
Geology			P	S
Services and Facilities				
Bald Mountain Scenic Area		P		S
Boulder County Parks and Open Space		S		P

Order of Desirability
P = Primary
S = Secondary

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Appendix 1. The floristic list of Bald Mountain Scenic Area is accompanied by data retrived from the Plant Identification Network (U.S.F.W.S., 1983). An explanation for each item on the list is provided at the end of the appendix.

Species	Origin	Economic Status	Flowering Phenology	Land Use Indicator	Establishment Requirement	Short Term Revegetation Potential	Long Term Revegetation Potential	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Alliaceae															
Allium cernuum - nodding onion	N	E	MY/SP	No	L	L	L	P	P	P	P	G	F	F	G
Allium textile - textile onion	N	E	MY/AG	No	L	L	L	P	P	P	P	F	F	P	G
Anacardiaceae															
Rhus trilobata - skunkbrush	N	N	AP/JN	No	M	L	M	G	G	G	G	P	G	G	G
Apiaceae															
Harbouria trachypleura - whiskbroom parsley	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Pseudocymopterus montanus - mountain parsley	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Asteraceae															
Achillea lanulosa - yarrow	N	E	JN/SP	No	L	M	M	P	P	G	G	F	F	P	F
Ambrosia psilostachya - western ragweed	N	E	JL/OC	No	L	L	L	P	P	P	P	P	F	F	F
Antennaria parviflora - littleleaf pussytoes	N	N	MY/AG	No	O	O	O	-	-	-	-	-	F	-	-

Species	Origin	Economic Significance	Flowering Phenology	Land Use Indicator	Establishment Require.	Short Term Reveg. Poten.	Long Term Reveg. Poten.	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Asteraceae (continued)															
Antennaria rosea - rosy pussytoes	N	N	MY/SP	Me	O	O	O	-	-	-	-	F	F	F	F
Artemisia canadensis - canada sagebrush	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Artemisia caudata - fringed sage	N	N	JL/OC	-	-	-	-	-	-	-	-	-	-	-	-
Artemisia frigida - pasture sage	N	E	JN/OC	Gr	L	L	M	P	P	P	F	G	F	F	F
Artemisia ludoviciana -Lousiana sagebrush	N	N	JL/OC	No	L	L	M	P	F	F	F	F	F	F	F
Cirsium undulatum - wavyleaf thistle	N	E	MY/SP	No	L	L	L	P	P	F	G	F	F	F	G
Cirsium vulgare - bull thistle	I	E	JL/SP	No	L	L	L	P	F	F	G	F	F	G	G
Erigeron compositus - fernleaf fleabane	N	N	MY/AG	-	-	-	-	-	-	-	-	-	-	-	-
Erigeron flagellaris - trailing fleabane	N	N	MY/SP	-	-	-	-	P	P	F	F	P	-	-	F
Gaillardia aristata - blanket flower	N	N	MY/SP	No	M	L	L	P	P	P	F	P	P	F	F
Grindelia squarrosa - gumweed	N	E	JN/SP	No (Me)	L	L	L	P	F	F	F	P	G	F	F
Helianthus pumilus - low sunflower	N	N	JL/SP	-	-	-	-	P	F	F	F	G	G	G	G
Heterotheca villosa - hairy goldaster	N	N	MY/OC	No	M	M	M	P	F	F	F	F	F	F	G
Liatris punctata - blazing star	N	N	AG/SP	No	M	L	M	P	P	P	P	F	P	P	F
Senecio integerrimus - lambstongue groundsel	N	N	MY/MY	No	M	L	L	P	P	F	F	F	P	P	P
Solidago canadensis - Canada goldenrod	N	N	My/Oc	No	L	L	M	P	P	F	F	F	F	F	F
Solidago missouriensis - Missouri goldenrod	N	N	JN/SP	No	M	L	M	P	F	F	F	F	F	F	F
Townsendia c.f. escapa (c.f. hookerii)- easter aster	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Townsendia grandiflora - easter aster	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Aster porteri - Porter's aster	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Tragopogon dubius - salsify	I	E	MY/JL	-	L	L	L	P	P	F	F	G	G	G	G
Boraginaceae															
Cryptantha virgata - miners candle	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Lappula redowski - blue burr stickseed	N	C	AP/AG	No	L	L	L	P	P	P	F	P	F	F	F
Lithospermum incisum - narrowleaf puccoon	N	N	AP/JL	No	-	-	-	-	P	-	-	-	F	-	-
Cynoglossum officinale - common houndstongue	I	E	MY/JL	Me	L	L	L	P	P	P	F	P	P	P	P

Species	Origin	Economic Significance	Flowering Phenology	Land Use Indicator	Establishment Require.	Short Term Reveg. Poten.	Long Term Reveg. Poten.	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Campanulaceae															
Campanula rotundifolia - harebell	N	N	JN/SP	No	M	L	L	P	P	P	P	P	P	P	F
Caryophyllaceae															
Cerastium arvense - starry chickweed	N	E	-	-	L	M	L	P	P	P	P	P	P	P	-
Paronychia jamesii - James nailwort	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Silene c.f. *antirrhinum* c.f. *scouleri* - sleepy catchfly	N	C	-	-	-	-	-	-	-	-	-	-	-	-	-
Chenopodiaceae															
Chenopodium album - lambsquarters goosefoot	I	E	JN/SP	Me	L	M	L	P	F	F	F	F	F	F	G
Crassulaceae															
Sedum lanceolatum - stonecrop	N	N	MY/SP	No	M	L	L	P	P	P	P	P	P	F	F
Brassicaceae															
Camelina microcarpa - littlepod falseflax	I	E	MY/AG	-	-	-	-	F	F	-	-	G	G	-	-
Descurainea sp. - tansy mustard	N	E?	MY/JN	No	L	M	L	-	-	-	-	-	-	-	-
Erysimum asperum - western wallflower	N	N	AP/SP	No	L	M	M	P	P	F	F	F	F	F	F
Lesquerella montata - mountain bladderpod	N	N	-	No	-	-	-	-	-	-	-	-	-	-	-
Thlaspi montanum - mountain pennycress	N	N	MY/AG	Me	-	-	-	-	-	-	-	-	-	-	-
Cupressaceae															
Juniperus scopulorum - Rocky Mountain juniper	N	N	AP/JN	No	M	L	M	G	G	G	G	F	F	G	G
Fabaceae															
Astragalus c.f. *parryi* c.f. *shortianus* - milkvetch	N	N	MY/JN	No	L	L	L	-	-	-	-	-	-	-	-

Species	Origin	Economic Significance	Flowering Phenology	Land Use Indicator	Establishment Require.	Short Term Reveg. Poten.	Long Term Reveg. Poten.	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Fabaceae (continued)															
Oxytropis lambertii - Lambert's locoweed	N	N	MY/SP	No	L	L	L	P	P	F	G	F	P	F	F
Melilotus alba - white sweet clover	I	C	JN/SP	Me	L	H	M	F	G	G	G	G	G	G	G
Melilotus officinale - yellow sweet clover	I	C	JN/SP	Me	L	H	L	F	G	G	G	G	G	G	G
Geraniaceae															
Geranium caespitosum - common geranium	N	N	JN/AG	No	M	L	M	P	F	F	G	G	F	F	F
Grossulariaceae															
Ribes cereum - wax current	N	N	AP/AG	No	M	L	M	F	F	G	G	F	G	G	F
Hydrophyllaceae															
Phacelia heterophylla - varileaf phacelia	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Lamiaceae															
Scutellaria brittonii - brittons skullcap	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Liliaceae															
Calochortus nuttalli - segolily mariposa lily	N	N	MY/JL	No	M	L	L	P	P	P	P	P	P	P	P
Leucocrinum montanum - sandlily	N	N	AP/JN	No	-	-	-	-	-	-	-	-	-	-	-
Zigadenus c.f. anticlea c.f. toxicoscordion - death camas	N	C?	MY/JL	No	L	L	L	P	P	P	P	P	P	P	P
Yucca glauca - soapweed	N	E	MY/JL	No	M	L	L	P	P	P	P	P	P	P	P
Linaceae															
Linum lewisii - Lewis flax	N	N	MY/AG	No	M	L	M	P	P	F	P	P	P	F	F

Species	Origin	Economic Significance	Flowering Phenology	Land Use Indicator	Establishment Require.	Short Term Reveg. Poten.	Long Term Reveg. Poten.	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Loasaceae															
Mentzelia dispersa - small flowered evening-star	N	N	MY/JL	No	-	-	-	-	-	-	-	-	-	-	-
Mentzelia speciosa - yellow evening star	N	N	MY/JL	No	-	-	-	-	-	-	-	-	-	-	-
Nyctaginaceae															
Oxybaphus hirsutus - hairy umbrellawort	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Pinaceae															
Pinus ponderosa - ponderosa pine	N	N	MY/MY	No	M	M	H	G	F	G	G	F	F	G	F
Pseudotsuga menziesii - Douglas fir	N	N	AP/MY	No	M	L	H	G	F	G	G	P	G	G	F
Polemoniaceae															
Ipomopsis aggregata ssp. candida - sky rocket gilia	N	N	MY/SP	No	M	L	M	P	P	P	P	F	F	F	F
Phlox hoodii - flowery phlox	N	N	AP/SP	No	M	L	L	P	P	P	P	G	F	F	P
Polygonaceae															
Eriogonum alatum - tall sulfur flower	N	N	JN/AG	No	L	L	M	P	P	P	F	P	P	P	F
Eriogonum jamesii - James eriogonum	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Eriogonum umbellatum - sulfur flower	N	N	MY/AG	No	M	M	M	P	P	F	F	P	P	F	F
Primulaceae															
Androsace septentrionalis - pygme rockjasmine	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-

Species	Origin	Economic Significance	Flowering Phenology	Land Use Indicator	Establishment Require.	Short Term Reveg. Poten.	Long Term Reveg. Poten.	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Ranunculaceae															
Pulsatilla patens - pasque flower	N	N	AP/JL	No	M	L	L	P	F	P	P	F	F	F	F
Delphinum nelsonii - Nelsons larkspur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clematis columbiana - Columbian clematis	N	N	MY/JL	No	M	L	L	F	G	G	G	P	-	-	-
Rhamnaceae															
Ceanothus fendleri - buck brush	N	N	JN/AG	No	M	M	M	P	P	F	F	F	F	F	F
Rosaceae															
Geum macrophyllum - largeleaf avens	N	N	-	No	-	-	-	-	-	-	-	-	-	-	-
Potentilla fissa - big-flower cinquefoil	N	N	-	-	-	-	-	P	P	F	F	G	F	F	G
Potentilla hippiana - horse cinquefoil	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Rosa woodsii - woodsrose	N	N	MY/SP	No	M	L	M	F	G	G	G	G	G	G	G
Rubus deliciosus - Boulder raspberry	N	N	MY/AG	No	M	L	M	F	G	F	F	F	G	G	G
Prunus virginiana - common chokecherry	N	C	AP/JL	No	M	L	M	F	F	G	G	G	G	G	G
Cercocarpus montanus - true mountain mahogany	N	N	MY/AG	No	M	L	M	G	F	G	G	G	F	G	G
Scrophulariaceae															
Collinsia parviflora - blue eyed Mary	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Penstemon secundiflorus - sidebells penstemon	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Penstemon virens - green penstemon	N	N	MY/AG	-	-	-	-	P	P	P	P	G	P	F	G
Verbascum thapsus - flannel mullein	I	E	JN/AG	Me	-	-	-	P	P	P	P	P	P	F	F
Cactaceae															
Opuntia compressa - big root prickly pear	N	E	-	-	L	L	L	P	P	P	P	F	P	F	F
Echinocereus viridiflorus - hen and chicks	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-

Species	Origin	Economic Significance	Flowering Phenology	Land Use Indicator	Establishment Require.	Short Term Reveg. Poten.	Long Term Reveg. Poten.	Mule Deer Cover	Upland Game Bird Cover	Small Non-game Bird Cover	Small Mammal Cover	Mule Deer Food	Upland Game Food	Small Non-game Bird Food	Small Mammal Food
Poaceae															
Bouteloua gracilis - blue grama	N	N	JL/SP	No	M	L	H	P	P	P	P	P	F	F	G
Bouteloua curtipendula - side oats grama	N	N	JL/SP	No	M	L	H	P	-	-	-	P	-	-	-
Bromus tectorum - cheat	I	E	MY/AG	Gr	L	L	L	P	P	P	P	P	G	F	G
Koeleria macrantha - june grass	N	N	JN/JN	No	M	L	M	P	F	F	F	F	F	F	F
Leucopoa kingii - spike fescue	N	N	JN/AG	No	M	M	H	P	F	F	G	F	F	F	F
Muhlenbergia montana - mountain muhly	N	N	JL/SP	No	M	M	M	P	F	F	G	F	-	F	F
Stipa viridiflora- green needlegrass	N	N	JN/JL	No	M	L	H	P	F	G	F	F	F	F	F
Sitanion hystrix - bottlebrush squirreltail	N	N	MY/AG	No	L	L	L	P	F	F	G	F	F	F	F
Sporobolus cryptandrus - sand dropseed	N	N	JN/AG	No	M	M	M	P	F	F	F	F	F	G	G
Andropogon gerardi - big blue stem	N	N	JL/SP	No	M	L	H	F	F	F	F	P	F	F	F
Schizarychium scoparium - little blue stem	N	N	JL/SP	No	M	L	H	P	F	F	G	P	P	P	F
Bromopsis inermis - smooth brome	I	N	JN/SP	Me	L	M	H	F	G	F	F	F	F	F	G
Stipa comata - needle and thread	N	N	MY/JL	No	M	M	H	P	F	G	G	F	F	G	G
Agropyron cristatum - crested wheatgrass	I	N	JN/AG	Me	M	M	H	P	G	F	F	P	F	F	F
Phleum pratense - timothy	I	C	JN/SP	Me	M	H	M	P	G	F	G	F	F	G	F
Dactylis glomerata - orchard grass	I	C	AG/SP	-	L	M	H	P	F	F	F	F	F	F	G
Agropyron smithii - western wheatgrass	N	N	JN/AG	No	M	M	H	P	F	G	G	F	F	F	F
Cyperaceae															
Carex heliophila - sunsedge	N	N	MY/JL	No	L	L	M	P	-	-	-	F	-	-	-
Hydrangeaceae															
Jamesia americana - cliff Jamesia	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-
Polypodiaceae															
Woodsia scopulina - Rocky Mountain woodsia	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-

106 Species

Origin
  N = Native, I = Introduced
Economic Significance
  E = Economic, C = Colonizer, N= Non-weedy
Flowering Phenology
  AP = April, MY = May, JN = June, JL = July, AG = August, SP = September, OC = October
Land Use Indicator
  Me = Mechanical, Gr = Overgrazing, Fi = Fire, No = not an indicator
Establishment Requirement
  Low, Medium, High
Short Term Revegetation Potential
  Low, Medium, High
Long Term Revegetation Potential
  Low, Medium, High
Mule Deer Cover
  Good, Fair, Poor
Upland Game Bird Cover
  Good, Fair, Poor
Small Non-game Bird Cover
  Good, Fair, Poor
Small Mammal Cover
  Good, Fair, Poor
Mule Deer Food
  Good, Fair, Poor
Upland Game Food
  Good, Fair, Poor
Small Non-game Bird Food
  Good, Fair, Poor
Small Mammal Food
  Good, Fair, Poor

Appendix 2.a. This appendix lists all plant species that were found in the meadow ecosystem in 1984.

Overstory
- Pinus ponderosa
- less than 5%

Understory
- Pinus ponderosa
- Less than 5%

Shrubs 5-20%
Common to Occasional
- Rosa woodsii
- Rhus trilobata
- Ribes cereum

Herbaceous 75-100%
Common to Occasional
- Cryptantha virgata
- Opuntia compressa
- Echinocereus viridiflorus
- Achillea lanulosa
- Ambrosia psilostachya
- Artemisia frigida
- Artemisia campestris
- Grindelia squarrosa
- Helianthus pumilus
- Heterotheca villosa
- Geranuim caespitosum
- Astragalus cf.
- Eriogonum umbellatum
- Geum macrophyllum
- Phlox multiflora
- Verbascum thapsus
- Agropyron smithii
- Bouteloua gracilias
- Bromus tectorum
- Brompsis inermus
- Koeleria macrantha
- Muhlenbergia montana
- Panicum virgatum
- Poa pratensis
- Poa compressa
- Stipa comata
- Yucca glauca
- Liatris punctata
- Sitanion hystrix
- Bouteloua curtipendula

Uncommon
- Cynoglossun officinale
- Companula rotundifolia
- Cirsium vulgare
- Eriogonum flavum
- Linum lewisii
- Alluim cernuum
- Solanum sp.
- Andropogon geradi
- Leucopoa kingii
- Stipa viridiflora
- Harbouria trachypleura

Appendix 2.b. This appendix lists all plant species that were found in the ponderosa parkland ecosystem in 1984.

Overstory
- Pinus ponderosa
- 5-25% cover

Understory
- Pinus ponderosa
- 5-25% cover
- occasional Pseudotsuga menziesii and Juniperus scopuloum

Shrub 5-25%

Common to Occasional
- Ribes cereum
- Cercocarpus montanus

Uncommon
- Juniperus scopulorum
- Ceanothus fendleri
- Rosa woodsii
- Symphcocarpus occidentale
- Prunus virginiana
- Jamesia americana

Herbaceous layer 50-75%

Common to Occasional
- Opuntia compressa
- Ambrosia psilostachya
- Artemisia frigida
- Artemesia campestris
- Aster porteri
- Helianthus pumilus
- Heterotheca villosa
- Geranium caespitosum
- Eriogonum unibellatum
- Carex heliophila
- Agropyron cristatum
- Agropyron smithii
- Bromopsis inermis
- Bromus techtorum
- Koeleria macrantha
- Leucopoa kingii
- Muhlenbergia montana
- Poa pratensis
- Stipa comata
- Sitanion hystrix
- Sporobolus cryptandrus

Uncommon
- Campanula rotundifolia
- Achillea lanulosa
- Cirsium vulgare
- Grindelia squarrosa
- Rhus trilobata
- Tragopogon dubius
- Sedum lanceolatun
- Phacelia hastata
- Monarda fistulosa
- Melilotus officinale
- Pulsatilla patens
- Rosa woodsii
- Allium cernuum
- Penstemon virens
- Verbascum thapsus
- Harbouria trachypleura
- Elymus canadensis
- Poa compressa
- Yucca glauca

Appendix 2.c. This appendix lists all plant species that were found in the ponderosa pine forest ecosystem in 1984.

Overstory

Pinus ponderosa, few Douglas fir forest
25-50% cover

Understory

Pinus ponderosa
50-75%

Shrub less than 5%

Juniperus scopulorum
Ribes cereum
Rubus deliciosus
Physocarpa monogyna
Cercocarpus montanus
Jamesia americana

Herbaceous 10-25%

Common to Occasional

Artemisia frigida
Artemisia campestris
Heterotheca villosa
Eriogonum umbellatum
Carex heliophila
Bromus tectorum
Koeleria macrantha
Leucopoa kingii
Muhlenbergia montana

Uncommon

Echinocereus viridiflorus
Geranium caespitosun
Agropyron smithii
Harbouria trachypleura
Agropyron cristatum
Bouteloua gracilis
Stipa virrdiflora
Yucca glauca
Dactylis glomertata
Sitanion hystrix
Astragalus sp.
Allium cernuum

Appendix 3.a. The following is a listing of the potential and documented mammals of Bald Mountain Scenic Area. Status refers to the classification given to species in the Boulder County Comprehensive Plan. The Roman numerals are explained at the end of the table.

Species	Potential Grassland	Potential Pine Forest	Documented	Status
Insectivora				
Sorex cinereus - masked shrew	x	x		
Sorex monticolus - montane shrew	x	x		
Sorex nanus - dwarf shrew	x	x		V
Sorex merriami - Merriams shrew	x	x		IV,V
Chiroptera				
Myotis lucifugus - little brown bat	x	x	x	
Myotis evotis - long eared myotis	x	x		
Myotis thysanodes - fringed myotis	x	x		V
Myotis volans - long-legged myotis	x	x		
Lasionycteris noctivagans - silver haried bat	x	x		
Eptesicus fuscus - big brown bat	x	x	x	
Lasiurus cinereus - hoary bat	x	x	x	
Plecotus townsendii - Townsend's big-eared bat	x	x		
Lagomorpha				
Sylvilagus nuttallii - Nuttall's cottontail	x	x	x	
Lepus townsendii - white-tailed jackrabbit	x	x	x	III,V
Rodentia				
Eutamias minimus - least chipmunk	x	x	x	
Eutanias quadrivattatus - Colorado chipmunk	x	x	x	
Marmota flaviventris - yellow bellied marmot	x	x		
Spermophilus elegans - Wyoming ground squirrel	x	x		
Spermophilus variegatus - rock squirrel				
Spermophilus lateralis - golden manteled ground squirrel	x	x		
Sciurus aberti - Abert's squirrel	x	x	x	IV
Tamiasciurus hudsonicus - pine squirrel	x	x		
Thomomys talpoides - northern pocket gopher	x	x	x	
Peromyscus maniculatus - deer mouse	x	x	x	

Species	Potential Grassland	Potential Pine Forest	Documented	Status
Rodentia (continued)				
Peromyscus difficitis - rock mouse	x	x		IV
Neotoma mexicana - Mexican woodrat	x	x		
Neotoma cinerea - bushy tailed woodrat	x	x	x	
Microtus montanus - montane vole		x	x	
Microtus longicaudos - long-tailed vole		x		
Erethizon dorsatum - porcupine	x	x	x	
Carnivora				
Canis latrans - coyote	x	x	x	
Canis lupus - gray wolf (Ext)	x	x		I
Vulpes vulpes - red fox	x	x	x	
Urocyon cinereoargenteus - gray fox	x	x		IV
Ursus americanus - black bear	x	x		
Ursus arctos - grizzly bear (Ext)	x	x		I,II,A,B
Procyon lotor - raccoon	x	x		
Mustela erminea - short-tailed weasel	x	x	x	
Mustela frenata - long-tailed weasel	x	x	x	
Taxidea taxus - badger	x	x		
Spilogale gracilis - western spotten skunk	x	x		
Mephitis mephitis - striped skunk	x	x		
Felis concolor - mountain lion	x	x		
Felis rufus - bobcat	x	x	x	III
Artiodactyla				
Cervus elaphus - elk		x		
Odocoileus hemionus - mule deer	x	x	x	
Ovis canadensis - bighorn sheep	x	x	—	
	44	47	20	

47 total
- 2 extipated
45

44% documented

Appendix 3.b. The following is a listing of the potential and documented birds of Bald Mountain Scenic Area. Status refers to the classification assigned in the Boulder County Comprehensive Plan. Frequency refers to the abundance of the bird species in Boulder County. Trend refers to population trean. All information of status, frequency and abundance is taken from the Boulder County Comprehensive Plan, Environmental Resources element.

Species	Time of Year Present	Habitat	Abundance	Documented	Status	Trend
Falconiiformes						
Cathartes aura - turkey vulture	Summer	Mountain Valleys	FC			S
Accipiter striatus - sharp-skinned hawk	Resident	Timber	U			S
Accipiter cooperii - Cooper's hawk	Resident	Forests	U			S
Accipiter gentilis - northern goshawk	Resident	Forests	U	X	IV D	S
Buteo swainsoni - Swainson's hawk	Summer	Open Country	R			D
Buteo jamaicensis - red tailed hawk	Resident	Open Country	U	X	IV D	D
Buteo regalis - Ferruginous hawk	Resident	Open Country	U	X	IV CD	Hy
Aquila chrysaetos - golden eagle	Resident	Mountains	U			S
Falco sparverius - American kestrel	Summer	Open Country	C	X	III B	S
Galliformes						
Dendragapus obscurus - blue grouse	Resident	Open Timber	U	X		S
Meleagris gallopavo - wild turkey	Resident	Open Timber	U			N
Columbiformes						
Columba fasciata - band tailed pigeon	Summer	Forests	R			S
Zenaida macroura - mourning dove	Summer	Open Country	C	X		S
Columba livia - rock dove	Resident	Agricultural	A	X		N
Strigiformes						
Bubo virginianus - great horned owl	Resident	Forests	FC			S
Glaucidium gnoma - northern pygmy owl	Resident	Conifer Forests	R			X
Caprimulgiformes						
Chordeiles minor - common nighthawk	Summer	Dry Forests	FC	X	III AB	D
Phalaenoptilus nuttallii - common poorwill	Summer	Junipers	FC	X		S

Species	Time of Year Present	Habitat	Abundance	Documented	Status	Trend
Apodiformes						
Aeronautes saxatalis - white throated swift	Summer	Rock Outcrops	C			S
Selasphorus platycercus - broad-tailed hummingbird	Summer	Around Flowers	A	X		S
Selasphorus rufus - rufous hummingbird	Migrant	Around Flowers	FC			--
Piciformes						
Asyndesmus lewis - Lewis' woodpecker	Resident	Open Forests	U			D
Melanerpes erythrocephalus - red-headed woodpecker	Summer	Conifer Forests	U			D
Sphyrapicus thyroideus - Williamson's sapsucker	Summer	Conifer Forests	U			D
Picoides pubescens - downy woodpecker	Resident	Forests	FC	X		S
Picoides villosus - hairy woodpecker	Resident	Forests	FC	X	IV D	S
Picoides tridactylus - three-toed woodpecker	Resident	Conifer Forests	U			S
Colaptes auratus - common flicker	Resident	Open Forests	A	X		S
Passeriformes						
Contopus borealis - olive side flycatcher	Summer	Open Forests	U	X		S
Contopus sordidulus - western wood-peewee	Summer	Open Forests	FC	X		S
Empidonax hammondii - Hammond's flycatcher	Summer	Conifer Forests	U			S
Empidonax oberholseri - dusky flycatcher	Summer	Junipers	U			D
Sayornis saya - Say's phoebe	Summer	Open Country	U			D
Tachycineta thalassina - violet-green swallow	Summer	Open Woods	C	X		S
Hirundo pyrrhonota - cliff swallow	Summer	Open Country	A			S
Perisoreus canadensis - gray jay	Resident	Mountain Forests	C			S
Cyanocitta stelleri - Stellar's jay	Resident	Mountain Forests	A	X		S
Aphelocoma coerulescens - scrub jay	Resident	Junipers	R			I
Gymnorhinus cyanocephalus - pinyon jay	Summer	Junipers	I			Hy
Nucifraga columbiana - Clark's nutcracker	Resident	Conifer Forests	C	X		S
Pica pica - black-billed magpie	Resident	Open Forests	A	X		S
Corvus brachyrhynchos - American crow	Resident	Valleys	C	X		I
Corvus corax - common raven	Resident	Ubiquitous	C	X		I
Parus gambeli - mountain chickadee	Resident	Conifer Forests	A	X		S

Species	Time of Year Present	Habitat	Abundance	Documented	Status	Trend
Passeriformes (continued)						
Sitta carolinensis - white-breasted nuthatch	Resident	Forests	C	X		S
Sitta canadensis - red-breasted nuthatch	Resident	Forests	U			--
Sitta pygmaea - pygmy nuthatch	Resident	Ponderosa Pine	A	X	IV CD	S
Certhia americana - brown creeper	Resident	Conifer Forests	FC	X		S
Salpinctes obsoletus - rock wren	Summer	Rocky Cliffs	FC			S
Catherpes mexicanus - canyon wren	Resident	Cliffs	FC			S
Troglodytes aedon - house wren	Summer	Forests	C	X		--
Regulus satrapa - golden-crowned kinglet	Summer	Conifer Forests	R			S
Regulus calendula - ruby-crowned kinglet	Summer	Mountain Forests	C			S
Sialia mexicana - western bluebird	Winter	Conifer Forests	C			D
Sialia currucoides - mountain bluebird	Summer	Open Country	C	X	III AB	S
Myadestes townsendi - Townsend's solitaire	Resident	Mountain Forests	C	X		S
Pipilo chlorurus - green-tailed towhee	Summer	Shrub-Forest Ecotone	FC	X		S
Hylocichla guttata - hermit thrush	Summer	Mountain Forests	C			S
Turdus migratorius - American robin	Resident	Ubiquitous	A	X		S
Mimus polyglottos - northern mockingbird	Winter	Open Country	R			D
Bombycilla cedrorum - cedar waxwing	Summer	Open Forests	R			N
Lanius excubitor - northern shrike	Winter	Open Country	FC			--
Vireo solitarius - solitary vireo	Summer	Ponderosa Pine	FC	X		S
Vermivora celata - orange-crowned warbler	Migrant	Forests				Hy
Vermivora virginiae - Virginia's warbler	Summer	Open Country	FC			S
Dendroica coronata - yellow-rumped warbler	Summer	Forests	C			S
Dendroica townsendi - Townsend's warbler	Migrant	Conifers	FC			--
Oporornis tolmiei - Macgillivray's warbler	Summer	Forest Underbrush	FC			S
Dolichonyx oryzivorus - bobolink	Summer	Meadows, Forests	U			S
Euphagus cyanocephalus - Brewer's blackbird	Summer	Agricultural	C	X		S
Sturnella neglecta - western meadowlark	Resident	Open Country	A	X		S
Piranga ludoviciana - western tanager	Summer	Open Conifers	C	X		S
Spizella passerina - chipping sparrow	Summer	Open Wood	C	X		S

Species	Time of Year Present	Habitat	Abundance	Documented	Status	Trend
Passeriformes (continued)						
Chondestes grammacus - lark sparrow	Summer	Meadows	C	X		S
Zonotrichia albicollis - white-throated sparrow	Winter	Cliffs	U			S
Junco hyemalis - gray headed junco	Resident	Forest-Meadow Ecotone	C	X	IV D	S
Leucosticte arctoa - rosy finch	Resident	Open Country	FC			S
Pinicola enucleator - pine grosbeak	Resident	Conifer Forests	U			S
Carpodacus cassinii - Cassin's finch	Resident	Open Forests	I			S
Loxia curvirostra - red crossbill	Irregular	Conifer Forests	I			S
Carduelis pinus - pine siskin	Resident	Conifer Forests	C	X		S
			82	38		

22 of 38 are residents of Boulder County

46.34% documented

Frequency
- A = abundant
- C = common
- FC = fairly common
- I = infrequent
- U = uncommon
- R = rare

Status
- I = increasing
- S = status
- D = decreasing
- N = new species
- Hy = hypothetical
- X = status undetermined

Habitat Restrictions
- IV C = Stenotopic Birds of Colorado
- IV D = U.S.D.A. Forest Service Management Indicator Species
- III A = Boulder County long-term, non-cyclic population decline
- III B = American Birds Blue List
- V A = hypothetical breeding bird

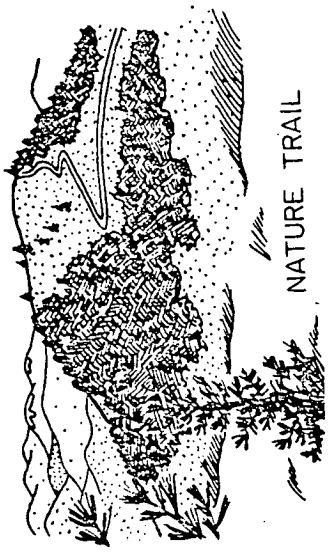
Appendix 3.c. The following is a list of potential and documented amphibians and reptiles of Boulder County.

Species	Grassland	Ponderosa	Documented
Sceloporus undulatus erythrocheidus eastern fence lizard		x	x
Lampropeltis triangulum gentilis western milksnake	x	x	
Pituophis melanoleucus sayi bullsnake	x	x	
Tantilla nigriceps nigriceps plains blackhead snake	x	x	
Thamnophis elegans vagrans western terrestial garter snake	x	x	
Thamnophis radix haydenii plains garter snake	x	x	
Crotalus viridis viridis prairie rattlesnake	x	x	x
		7	2

28.6% documented

Appendix 4. Bald Mountain Scenic Area Brochures

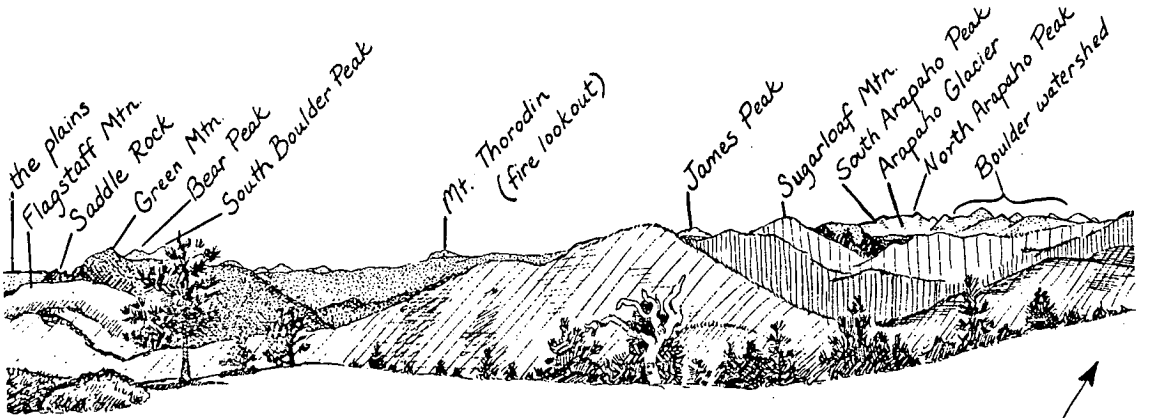
BALD MOUNTAIN SCENIC AREA



NATURE TRAIL

Welcome to Winter on Bald Mountain Scenic Area. Soak in the serenity of this natural setting as you stroll along the Nature Trail to the summit. The trail has purpose in protecting the fragile east slope from excessive wear. Please use your land with respect. Numbered posts along the way correspond to paragraphs in this brochure. This guide is prepared to enhance your visit, bringing to light some shadowed secrets cast by Nature.

1 As you cross the bridge, reflect a moment on this winter season. During the summer much energy traveled through Bald Mountain producing countless flowering plants and trees, which in turn provided seeds and nourishment for other life. Now the land rests covered with dried fruits of that labor. Animals that remain active throughout the cold live off the fruits, seeds, and dried vegetation. Other animals are better adapted to remain dormant or hibernate through the winter, having stored necessary nutrients in body fats.



If you stand on the summit, this is what you see.

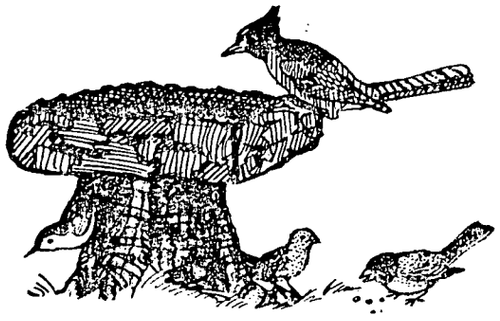
6 Elevation 7,160 feet. Congratulations --- you've made it to the top! Looking to the west you view the reward of your efforts. The high snow-covered peaks due west are the eastern-most extent of the backbone of our country, the Continental Divide. Boulder receives much of its water supply from snow accumulation in these high alpine valleys.

Why is Bald Mountain bald? There are many factors contributing. The soil composition is granite, a slowly weathered rock. Few plants of considerable size can obtain sufficient nutrients from this thin layer of coarse soil. Wind also is a major factor. Strong winds sometimes exceeding 100 mph provide an unstable environment for young tree seedlings. Moisture is limiting at this elevation. We are too high for heavy rainfall and too low for snow accumulation. These are just a few of the many unique peculiarities of this area, the Transition Zone between mountains and plains.

From this point you may return to the parking lot by the nature trail or make a circle around the side of the mountain. Again, we ask that you avoid a direct run down the hillside, which would quickly cut a path for others to follow and soon lead to the erosion of the hill. We would appreciate your comments on this trail guide, either directly to one of the Ranger/Naturalists on duty or to the Boulder County Parks Dept., 441-3959.
(DPOS 2/76)

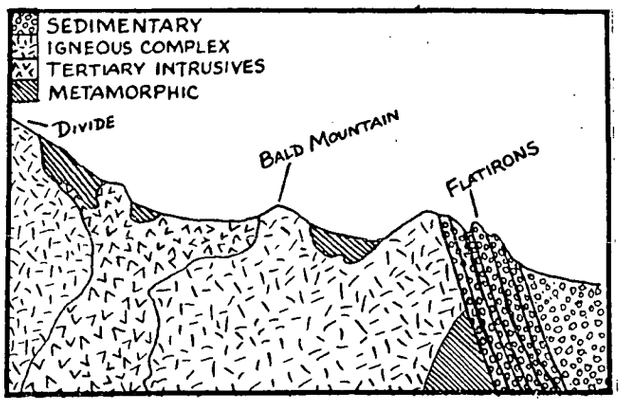
2 Notice the rocks to your right. What are they made of? Bald Mountain has many outcrops of a crystalline rock combination called granite. Feldspar (pink), Biotite (black), and Quartz (white) are the basic components. Granite is the underlying rock of all the Rocky Mountains having surged from the depths of the earth as a molten (igneous) mass.

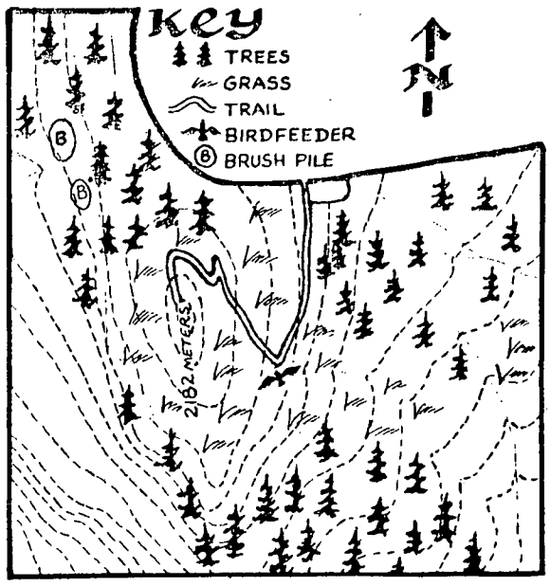
Boulder County was once part of an inland sea that laid down sediments which are represented by the Flatiron slabs. The Bald Mountain area has long since been uplifted and all sedimentary rock washed from its surface exposing this underlying granite rock.



3

Are you getting a bit tired? If so, here's a good place to rest, with a good view of Boulder and the plains stretching to Denver. An added interest is the simple bird feeder about fifteen yards down slope. Please view from the rest benches to protect the slope and prevent disturbing any feeding birds. Do you see the blackhooded Stellars Jay or the small grey Juncos with short stout bills for cracking open seeds?





4

Look into the stand of trees below you. Notice the relatively crowded growth these Ponderosa Pines have aquired over the years. Now scan the hillside for singular, open growing pines. By comparing the closed (dog-hair) stand with the open (Park-like) stand you can observe the results of competition among trees. The closed stand trees are competing directly for the essential elements of life: food, water and sunlight. Wildfire, a natural thinning agent, has been prevented on the eastern slope of the Rockies since the early 1900's, thus encouraging this poor growth throughout the Front Range.

5

Slow Down .....Look .....Listen ..... Pause here a few minutes to tune your senses. Begin with your own body. Eyes closed, listen to the heart pulse, your lungs breathe. Feel the steady functioning movement .....Now sense your external environment. Touch the snow, observe the movement of the trees, wind in your face. Tune into the high pitched chitter of the Mountain Chickadee or the lower chortled peeping of the Pigmy Nuthatch. Regardless for your position in life you are an integral part of all this.

Summit nature trail

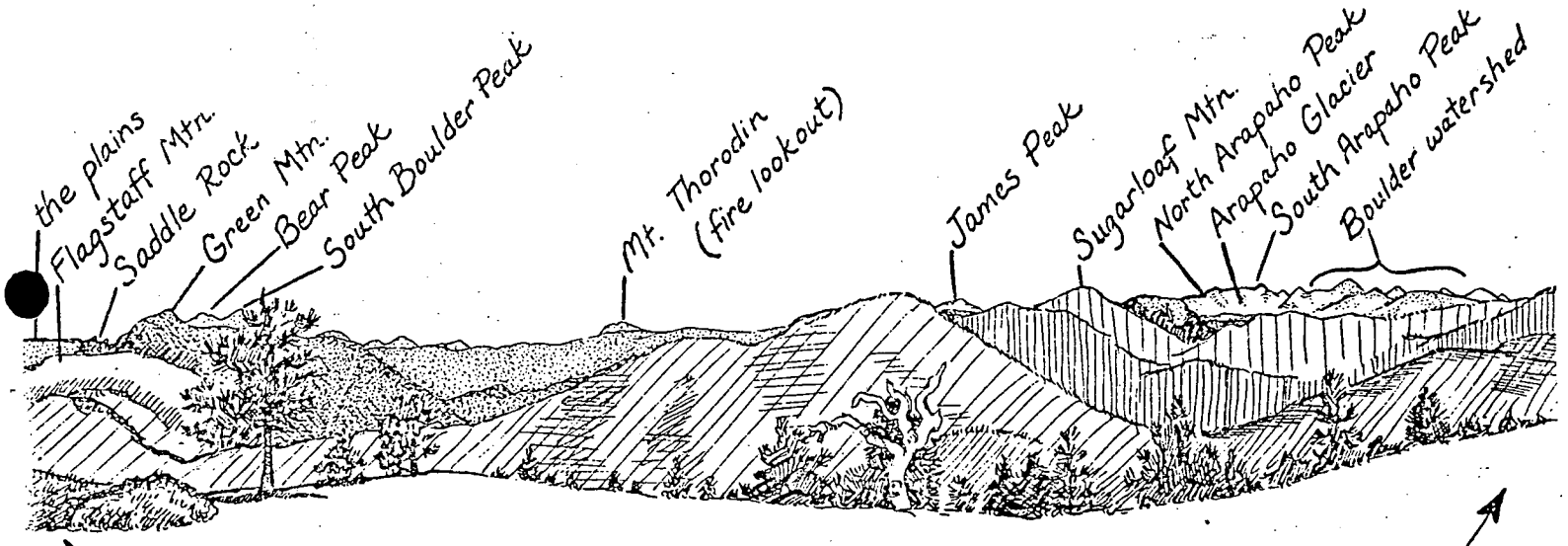
Abert's Squirrel

Welcome to Bald Mountain Scenic Area, 107 acres of foothills land leased from the State of Colorado by Boulder County.

Bald Mountain has extremely fragile soil on its slopes, so the Summit Nature Trail was designed to serve 2 purposes: it permits you to walk easily to the summit, while also protecting the hillside. Enjoy the natural beauty and protect it by staying on the trail.

The Summit Nature Trail is marked with numbered posts that correspond to the numbered paragraphs in the guide. Nature has provided abundantly for the area in the form of wildlife, trees, and wild flowers. Stop --- look --- and listen for nature's signs. If you take a leisurely pace, much more of nature will reveal itself to you.

Naturalists Doug McQueen and Lyle Jones will be happy to join you on the trail. Give them your questions and you may all learn something together.



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Boulder County 7/74)

1 This gully, on a small scale, is typical of water erosion wearing away the earth's surface. Although it only runs during hard rain or snow melt, water has cleared much of the vegetation from the banks. Revegetation starts with clumps of small flowers or grasses and takes advantage of the shadier, water-holding north slope.

The bridge was constructed of beetle-damaged trees cut from the northwest side of Bald Mountain.

2 Large boulders near the trail are encrusted with a colorful patchwork of green, orange, yellow, and brown. This growth, called lichen, is actually two distinct plants, algae and fungus, growing in close association with one another. The fungus provides moisture-gathering roots and the nitrogen essential for plant growth. The algae, a green one-celled plant, provides the food for itself and the fungus through the process of "photosynthesis", by use of sunlight. An important function of lichen is its ability to break down rock by releasing acid, thus forming crude soil.

3 From this point, below the steeper part of the trail, much of Boulder and the plains is visible. Clear days and night lights show Denver in the distance, with the Boulder-Denver Turnpike showing clearly on the left of the scene. The many large trees (in the V) separate the old Boulder from the new.

NARCA DeWOSKIN

Can you find

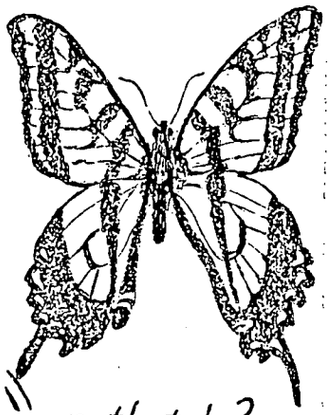
a mule deer's track?

the remains of a squirrel's pine cone lunch?

a hen-and-chickens cactus?

Did you see

a western tiger swallowtail?



a pygmy nuthatch?

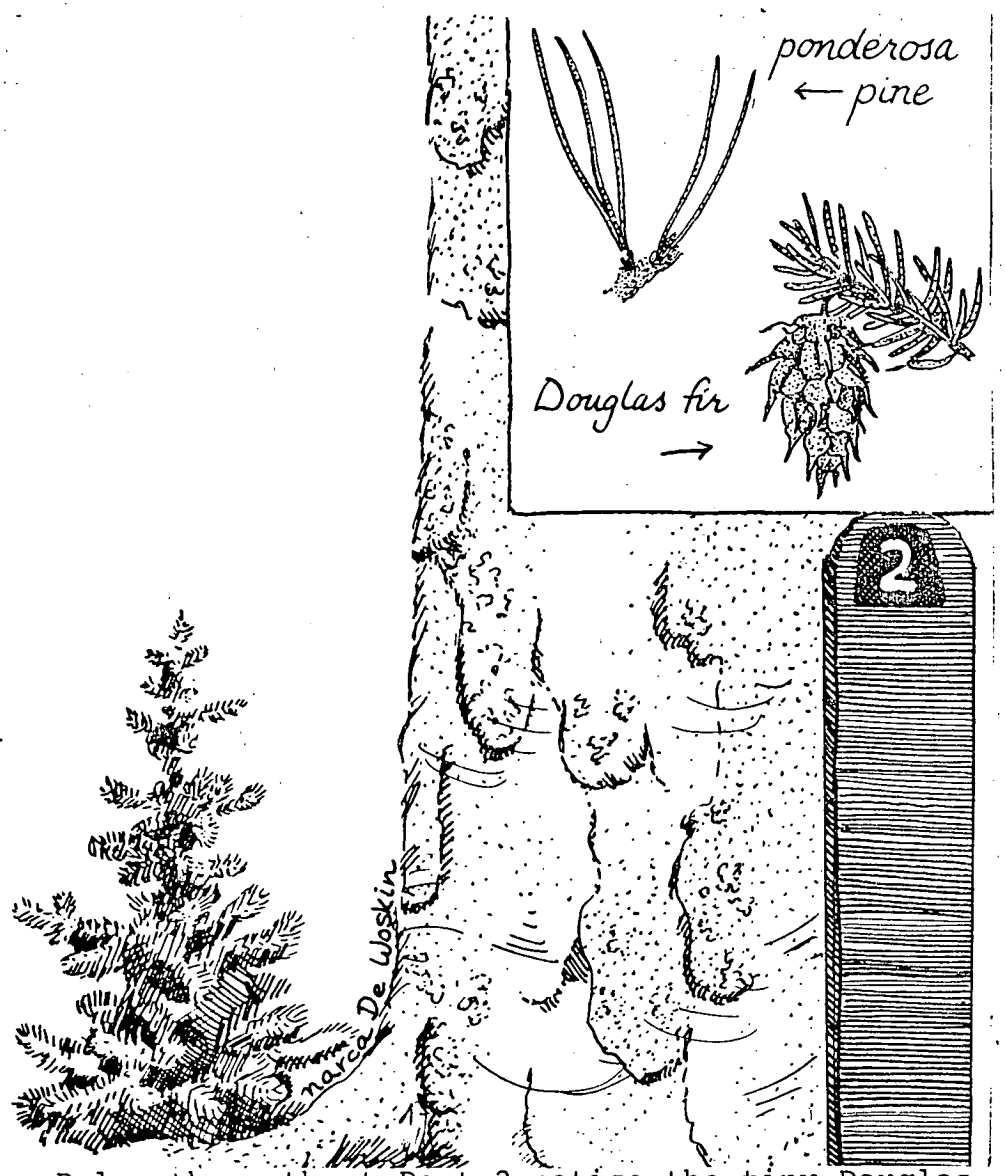
The three peaks to your right are Green Mountain, Bear Peak, and South Boulder Peak. Saddle Rock mounts the left side of Green Mountain. Out of sight below it is the Amphitheatre, a favorite rock climbing area.

4 Scan the upper limbs of the Ponderosa Pines below the path. Do you notice sign of porcupine (Erethizon Dorsatum)? The bright yellow scars are where "porky" has dined on the inner cambium layer (the living layer) of bark. Like all rodents, this old man of the forest must constantly gnaw to wear down and sharpen his continuously growing incisor teeth. Listen for gnawing sounds, also a low UNH! grunt.

5 A short walk (100 feet) to your right will expose a "cut" area. Many trees have been cut and removed to prevent the spread of mistletoe and beetles. The area is being re-planted with Blue Spruce. Watch your step --- they're only a few inches tall!!

The Mountain Pine Beetle lays its eggs in the growing layers beneath the bark of the Ponderosa Pine. The adults and larvae feed on the living tissue, but the real killer is a Blue Stain fungus, whose spore is carried on the beetles' bodies.

Mistletoe is a parasitic plant that lives from the nutrients in the branches. Stunted growth and heavily needled dying areas on branches (witch's broom) are evidence of mistletoe damage.



Below the path at Post 2 notice the tiny Douglas Fir tree in the shade of a towering Ponderosa Pine. Douglas Fir is a shade-loving tree, preferring to grow on cool, north-facing slopes. This sapling has found a suitable niche on the north side of the pine. Short flat needles and cones with 3-pronged bracts ("Neptune's trident") are useful characteristics to identify Doug Fir.

Summit nature trail

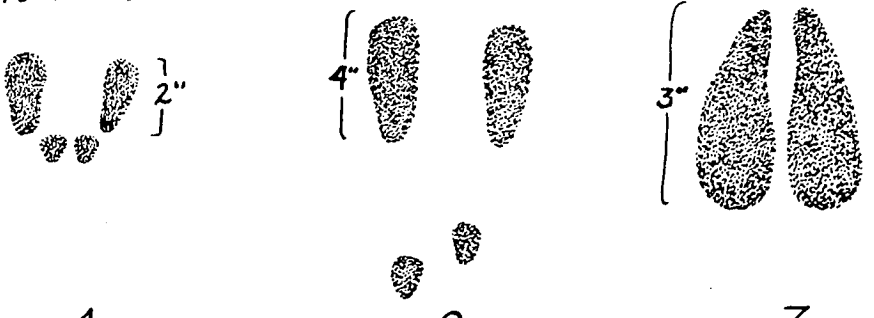
Welcome to the winter world of Bald Mountain Scenic Area --- 107 acres of open meadow, dense Ponderosa Pine and Douglas Fir forest, and rocky ledges.

Please use the trail to hike to the summit, to protect the fragile slope from excess wear. Posts 1 through 6 mark spots in our summer brochure. Posts 2 and 3 indicate some winter investigation spots.

Boulder County Ranger/Naturalists are available to lead special winter hikes. Please call the Parks and Open Space Department, 442-1100, for further information.

Winter is an excellent time for nature study through "signs" --- evidence left by animals such as their tracks, nests, droppings, and food caches. Look at the tracks below --- can you find them on Bald Mountain?

What animal leaves this track in the snow?



1 2 3

answers on next page

Down from Post 3 you will see a trio of Yucca plants and further down a bushy evergreen called Rocky Mountain Juniper. Both plants have useful edible parts. Juniper berries are hard bluish-gray fruits which birds love and people have used in making gin or tea. Yucca has fleshy petals on its late spring bloom which can be fried like potato cakes.

As many as 14 Mule Deer have been seen here, usually on the west side of the mountain. The deer's winter droppings are hard and bean shaped unlike the smaller, rounder rabbit droppings.

In the winter on Bald Mountain you may see a Cottontail, which remains brown, or a Jack-rabbit or a Snowshoe Hare, which turn white for better camouflage in the snow.

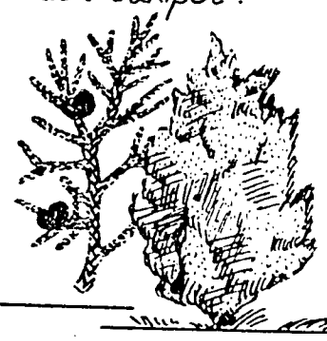
Abert's Squirrels, unlike the noisy Fox Squirrel in town, are usually quiet and shy. They are either black or gray and can be recognized by their very long, tasseled ears. They do not hibernate and may still be seen gathering cones. The track is similar to a rabbit's, but smaller, and the marks of the toes and claws can be seen.

The Mountain Chickadee is one of few year-round residents on Bald Mountain. His high-pitched call, sounding like his name, can be heard breaking the silence of a snowy day.

The Mountain Chickadee's white eye stripe differentiates it from the Black-capped Chickadee. Male, female, and young are all similar. The male Red-breasted Nuthatch is most easily confused with the Mountain Chickadee, but Nuthatches usually can be seen clinging, head down, on trunks and branches of conifers.

Do you see a Rocky Mountain Juniper?

a yucca?



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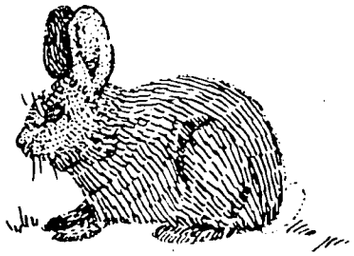
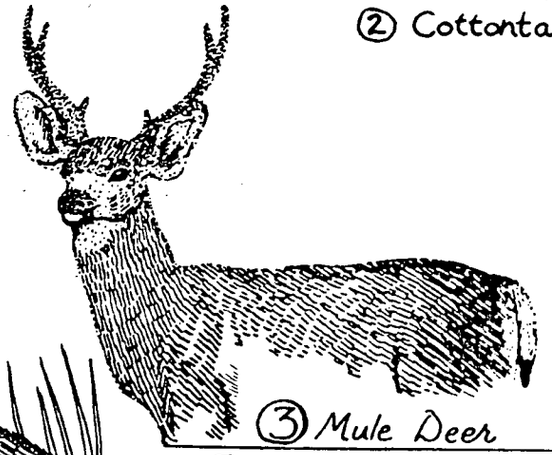
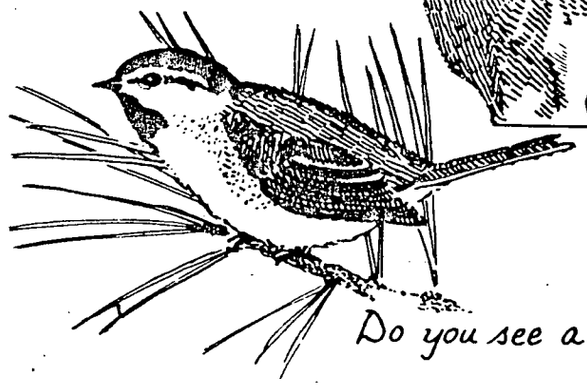
① Abert's Squirrel



② Cottontail



③ Mule Deer



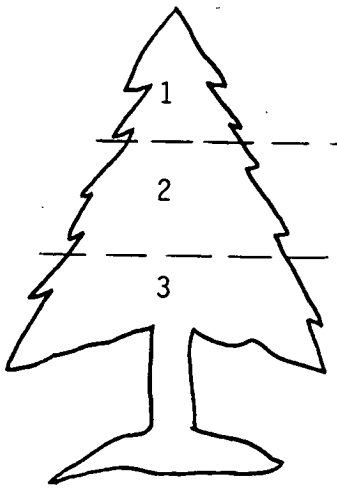
Do you see a Mountain Chickadee?

Appendix 5 Dwarf Mistletoe Rating System

STEP 1. Divide live crown into thirds.

STEP 2. Rate each third separately. Each third should be given a rating of 0, 1 or 2 as described below.

STEP 3. Finally, add ratings of thirds to obtain rating for total tree.



If this third has no visible infections, its rating is 0.

If this third is lightly infected, its rating is 1.

If this third is heavily infected, its rating is 2.

Ratings

0 - No visible infections
1 - Light infection (½ or less of total number of branches in the third infected)
2 - Heavy infection (more than ½ of total number of branches in the third infected)

Rating Classes

0	
1	No action needed.
2	Selective thinning and
3	pruning adequate
4	Trees must be cut
5	or isolated from
6	healthy stand