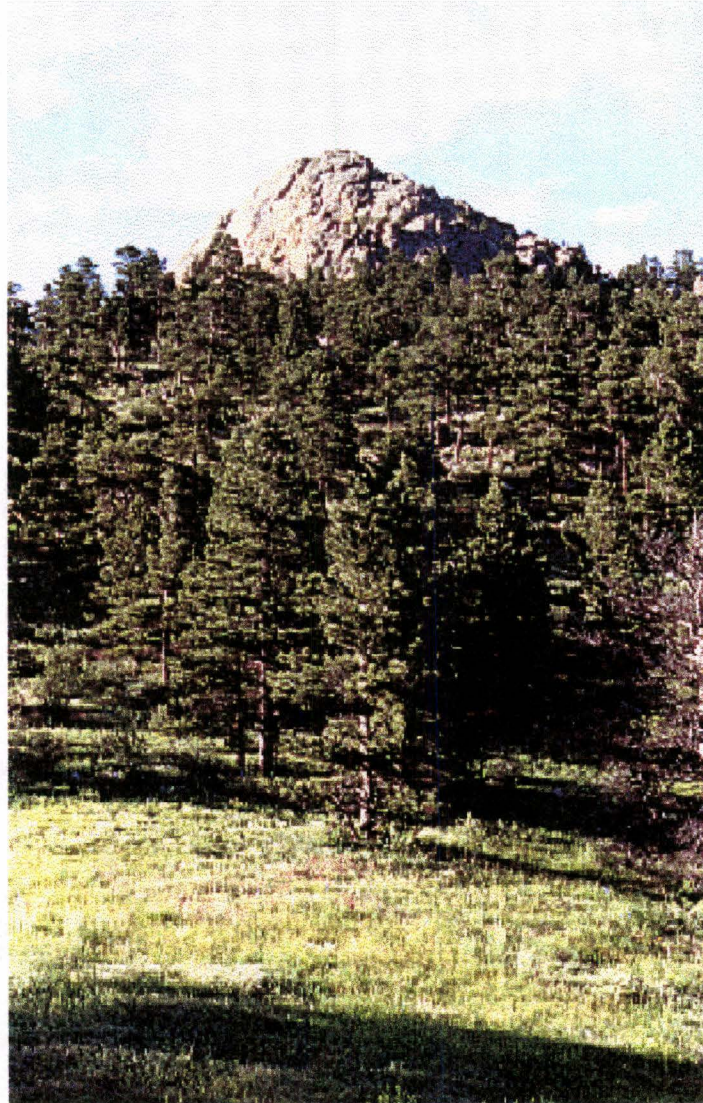


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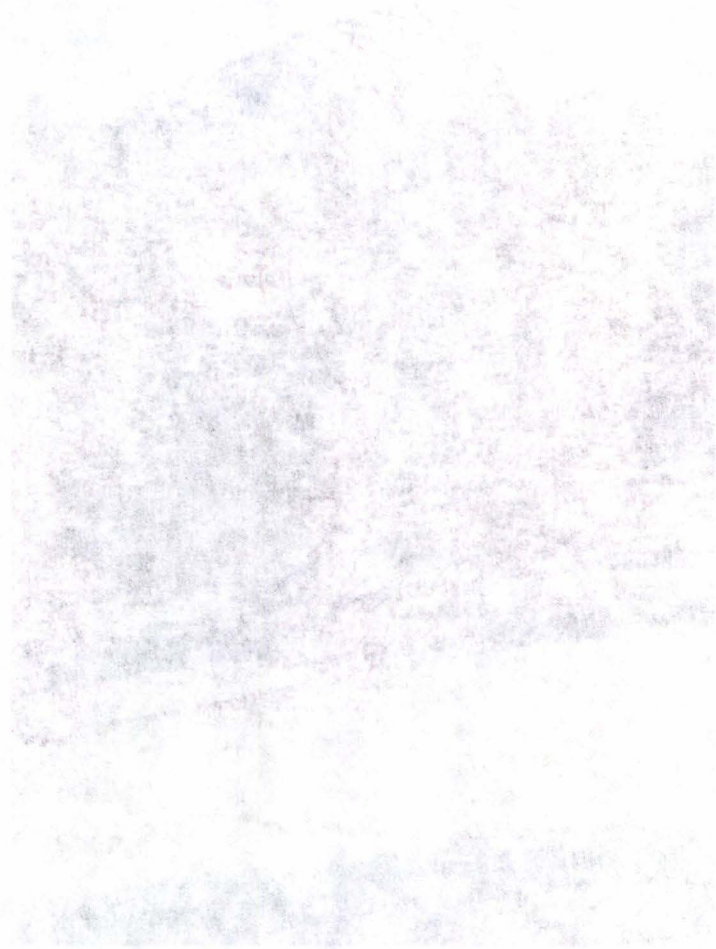
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**RESOURCE MANAGEMENT PLAN FOR THE  
HUGHEY PROPERTY**



September 1999  
Larimer County Parks and Open Lands

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# TABLE OF CONTENTS

## Resource Management Plan for the Hughes Property

<b>1. INTRODUCTION.....</b>	<b>1-1</b>
1.1 Purpose and Objectives of the Plan .....	1-1
1.2 History .....	1-1
1.3 Scope and Organization of the Plan .....	1-2
1.4 Public and Agency Involvement.....	1-2
<b>2. EXISTING CONDITIONS.....</b>	<b>2-1</b>
2.1 Overview .....	2-1
2.2 Natural Resources.....	2-1
2.3 Visual and Scenic Resources.....	2-5
2.4 Cultural Resources.....	2-5
2.5 Socioeconomic Resources .....	2-5
<b>3. OPPORTUNITIES, CONSTRAINTS AND PLANNING ISSUES.....</b>	<b>3-1</b>
3.1 Overview .....	3-1
3.2 Natural Resource Opportunities, Constraints and Planning Issues .....	3-1
3.3 Outdoor Recreation Opportunities, Constraints and Planning Issues.....	3-2
<b>4. MANAGEMENT PLAN .....</b>	<b>4-1</b>
4.1 Overview .....	4-1
4.2 Natural Resource Management.....	4-1
4.3 Outdoor Recreation Management.....	4-3
4.4 Summary of Implementation Steps and Phasing.....	4-4
<b>5 LITERATURE CITED. ....</b>	<b>5-1</b>
<b>6. APPENDICES.....</b>	<b>5-1</b>

## 1. INTRODUCTION

### 1.1 Purpose and Objectives of the Plan

The 282-acre Hughey property was purchased in 1998, with the intent to provide a buffer to Horsetooth Mountain Park Preserve, protect wildlife habitat and viewsheds and allow for expanded outdoor recreational opportunities.

The purpose of this document and accompanying maps, photographs and other materials is to: 1) provide an accurate and complete description of the property and existing conditions; 2) examine the management objectives for the Hughey property; and 3) outline the specific formal program and policy guidelines that will direct the management and use of the Hughey Property.

The overall objectives of the plan include to:

- Protect, manage and enhance the natural, geologic, cultural and visual resources including maintaining and promoting healthy systems and their processes;
- Provide and promote safe and enjoyable outdoor recreation opportunities while minimizing detrimental impacts upon natural, geologic, cultural and visual resources;
- Develop implementation policies, programs and responsibilities for the above goals that tie into the *Resource Management Plan for Horsetooth Mountain Park (1998)* when appropriate.

It should be noted that as a component of the Horsetooth Mountain Park Preserve the general management program and policies for the Park Preserve established in 1998, will apply to the Hughey Property. This management plan is designed to address issues specific to the Hughey Property and to incorporate additional information into the general *Resource Management Plan for Horsetooth Mountain Park*.

### 1.2 History

The human history of the Hughey property began as early as 10,000 B.C. when American Indians used the area surrounding Horsetooth Rock for hunting and gathering. In the timbered reaches of the lower southwest section of the property, there are short rock walls built post-European settlement, but the purpose of which is unknown. In the early part of the 19<sup>th</sup> century, trappers, traders and other frontier settlers moved into the area. There is evidence of what might have been the original road to Estes Park that bisects the southern part of the Hughey Property along the north-facing ridge. This old road is shored up with lichen covered rocks, and leaves a marked reminder of early travelers (Culver 1999).

Timber harvesting from the nearby slopes of Horsetooth Mountain in the 1880's provided lumber for sandstone quarry operations in Spring Canyon. Logging of the ponderosa pine stands along the top of the Hughey property in the past 50 years, can be evidenced by the piles of weathered timber still present today. In the 1940's, a portable sawmill was used to cut slabs from timber for constructing houses on some of the adjacent properties.

A large area of land near Horsetooth Reservoir and Milner Mountain that included the Hughey Property was purchased by Roland and Trean Culver over a period of years from 1919 to the 1930's. The property was used by the Culvers for livestock grazing operations supporting approximately 20 cow/calf pairs per year. The cattle watered at the two springs on the property. One of the springs, "Mine Spring", is so named because at its head there is an old entrance that has fallen in and is now boarded up. Roland would camp out for days at a time with his cattle, although he was never too far from his house. There was a one room shanty on Table Mountain, with a stove and bed, where Roland would stay overnight to fix fence and work to maintain the property (Hughey 1999).

Trean Culver, raised several thousand turkeys for 20-30 years on the property (Hughey 1999). Additionally, over the years, moss rock was removed from the property by the family and others for landscaping decoration.

In 1984, Trean turned the property over to their children (Don, Jack and Audra), who divided the large parcel into three smaller parcels among themselves. In 1998, Audra Hughey, sold her 282-acre parcel to the Larimer County Parks and Open Lands Department. The Hughey Property was in the Culver family for 47 years.

### **1.3 Scope and Organization of the Plan**

The *Resource Management Plan for the Hughey Property* contains three major sections: 1) a review of existing conditions, including natural, visual, cultural and socioeconomic resources; 2) a discussion of opportunities, constraints and planning issues related to the management of the property; and 3) a management plan addressing existing conditions, opportunities, constraints and planning issues.

### **1.4 Public and Agency Involvement**

Public and agency involvement is being utilized to ensure full representation of those parties interested in the management of the Hughey Property.

Adjacent landowners and potential users were invited to a public workshop to hear visions and desires as well as issues and concerns for the Hughey Property as a component of the existing Horsetooth Mountain Park Preserve [**In Process**]. At the workshop the management plan process was described and a draft of the management

plan was discussed. Public comment was also heard at the Open Lands Advisory Board meeting November 1998, when the property was recommended for acquisition.

In addition to the above public comment, the draft management plan was reviewed by the Larimer County Parks and Open Lands Staff and a technical advisory group that included diverse user group input. Many of these individuals also participated on the Advisory Task Force for the *Resource Management Plan for Horsetooth Mountain Park*.

<b>Name</b>	<b>Affiliation</b>	<b>Expertise</b>
Tom Bender	Farm Bureau	Agricultural land management
Mike Babler	Colorado State Forest Service	Forest management/fire control
Jim Dunlap	Spring Creek Velo Club	Mountain biking representative
Andre Duvall	Colorado Division of Wildlife	Wildlife biology
Dick Fletcher	Lory State Park	Park management
Steve Kettler	Colorado Natural Heritage Program	Ecology/plant communities
Danny Merme	Northern Colorado Volunteer Mounted Patrol	Horseback riding representative
Paul Opler	N.B.S./C.S.U.	Entomology/ecology
Renee Rondeau	Colorado Natural Heritage Program	Ecology/plant and natural communities
Bobby Sturgeon	Larimer County Parks and Open Lands	Maintenance supervisor/trail planner
Clint Wasser	Retired Professor/CSU	Range management
Daryl Burkhard	Larimer County Parks and Open Lands	Open lands resource specialist/natural resources
K-Lynn Cameron	Larimer County Parks and Open Lands	Open lands manager/outdoor recreation and planning
Mike Fleming	Larimer County Parks and Open Lands	Public health and safety/forest management
Meegan Flenniken	Larimer County Parks and Open Lands	Open lands resource specialist/natural resources
John MacFarlane	Larimer County Parks and Open Lands	Park ranger manager
Ken Woods	Larimer County Parks and Open Lands	Facilities, properties and construction manager

## **2. EXISTING CONDITIONS**

### **2.1 Overview**

The 282-acre Hughey Property is currently undeveloped and vacant without any buildings or structures. The Hughey property comprises the southern slopes of Horsetooth Mountain. It is located in the Horsetooth Quadrangle, NE ¼ sec. 35 except for a small tract at the northeast corner, N ½ of the SE ¼ sec. 35, NE ¼ of the SW ¼ sec. 35, and a small triangle tract along the southeast border of sec. 26; All in Township 7 North, Range 70 West of the 6<sup>th</sup> Prime Meridian, Larimer County, Colorado.

Current access to the site is through Horsetooth Mountain Park Preserve via the Horsetooth Rock Service Road. Access to Horsetooth Mountain Park Preserve is from Larimer County Road 38E, approximately ½ mile southeast of the Hughey property.

### **2.2 Natural Resources**

#### **a. Climate**

The Hughey Property has a highly variable, semi-arid climate. The climate data used to characterize the Hughey Property has been recorded in Ft. Collins which is over 500 feet lower in elevation. However, the climate data is reflective of conditions at the Hughey Property (Colorado Climate Center 1999).

The average maximum daily temperature (F) is approximately 70 degrees or above from May through September, with the daily average maximum reaching approximately 85 degrees in July and August. High temperatures may exceed 100 degrees, but nights are cooler with an average low during the summer of approximately 54 degrees. Winters are generally cold but are characterized by temperature swings. January is the coldest month with an average daily maximum of 41.5 degrees and minimum of 13.6 degrees.

Average annual precipitation is 14.4 inches, with the highest amount of precipitation occurring in May. Average annual snowfall is approximately 50 inches.

#### **b. Topography/Geology/Soils**

The rugged mountainous terrain that characterizes the Hughey property varies from an elevation of approximately 5,600 to 7,000 ft. The site has steep slopes from north to south ranging from 25-40%. Along the open meadows, a 500 ft. wide and 100 ft. deep ravine runs southeast to the northwest and is fed by "mine spring" (Map 2.1). A second major drainage runs from the northeast to the southwest and is fed by "bathtub spring". Both the drainage and ravine eventually empty into Redstone Creek. A topographic

feature on the hillside above the south side of the main ravine are cow terraces, or “cow-tours”, from cattle grazing these steep slopes.

The major rock outcrops in the upper reaches of the property consist primarily of granite bedrock. Granite is composed of mica, pink feldspar and rose-white quartz, giving dramatic textures and rugged natural beauty to the rock.

Soil development is relatively thin on slopes and comparatively greater in the valley and near the southern boundary of the site. Based on the USDA-SCS soil survey (1980), the major soil associations include:

Haploborolls-Boyle-Ratake: Shallow to deep, nearly level to very steep, well drained to excessively drained mainly loams, sandy loams, gravelly sandy loams, or channery loams formed in materials weathered from granite and schist; on mountainsides.

Kirtley-Purner-Haplustolls association: Shallow to deep, nearly level to steep, well drained mainly loams, fine sandy loams, and clay loams that formed in materials weathered from sandstone; on uplands and fans.

All soils on the property can be characterized as having medium to rapid runoff and moderate to severe erosion potential. The steep topography, shallow surface soils, rock outcrops and high erosion hazard greatly reduce the possibility for intensive development.

#### **c. Hydrology**

The property has steep terrain and deep ravines which greatly influence the hydrology of the site. Runoff is rapid from these steep slopes and rock outcrops, greatly increasing the potential for erosion. There are three known unadjudicated springs on the property (Map 2.1). “Bathtub Spring” and “Mine Spring” are two of the springs, though only “Mine Spring” has continuous surface flows. The intermittent flows from these springs and water from major drainages that carry rainfall and snowmelt, drain into Redstone Creek. There may be additional springs on the property based on information received from the public, and during site visits, small water seeps have been noted along the south facing hillslope. No standing surface waters or wetlands appear to be present on the property.

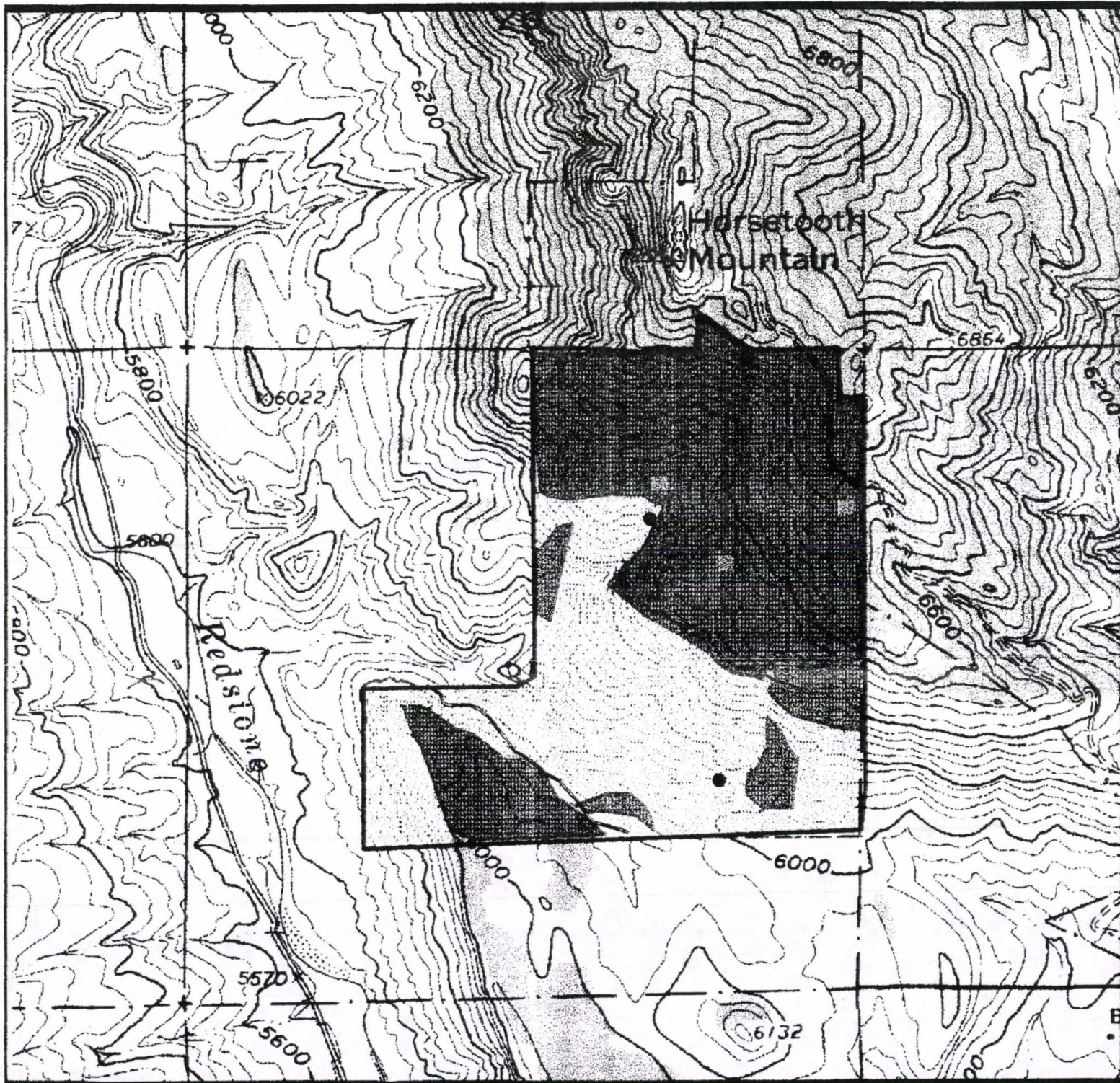
Groundwater is likely restricted to faults and fractures within impermeable rocks underground. Perched aquifers may exist as well as discontinuous sedimentary lenses, and are likely responsible for the existence of intermittent springs observed on the site (Mitchell et al. 1997).







#### **d. Vegetation**

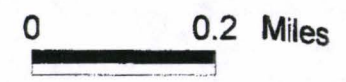
The property is characterized by ponderosa pine (*Pinus ponderosa*) forest, mountain mahogany (*Cercocarpus montanus*) shrubland and native mixed grassland. Major vegetation types are depicted in Map 2.1.

# Natural Resources

Map 2.1



-  Hughey Property
-  Old Estes Park Road
-  Access Road
-  Springs
-  Sawmill Piles
-  Pine Beetle Infestation
-  Mountain Mahogany Shrubland
-  Native Grassland
-  Ponderosa Pine Forest



### Ponderosa Pine Forest

The forested regions within the Hughey property are largely comprised of 40-50 year old ponderosa pine. However, there are several pockets of small Douglas fir (*Pseudotsuga menziesii*) on the higher elevation north and west facing slopes. On south facing slopes and on the north face of the mesa, Rocky Mountain junipers (*Juniperus scopulorum*) are present as well.

Understory vegetation in the ponderosa pine forest includes mountain mahogany (*Cercocarpus montanus*), Penstemon (*Penstemon virens*), Baltic rush (*Juncus balticus*), bitterbrush (*Purshia tridentata*), kinnikinnik (*Arctostaphylos uva-ursi*) and yucca (*Yucca glauca*), among others.

### Mountain Mahogany Shrubland

These shrublands are present in small pockets between the forested regions of the Hughey property and along the steep, northern faces of drainages. Mountain mahogany is the dominant shrub species, but less common shrub species include rubber rabbitbrush (*Crysothamnus nauseosus*), currant (*Ribes cereum*) and skunkbush (*Rhus trilobata*). Herbaceous species that comprise the shrub understory are side-oats grama (*Bouteloua curtipendula*), fringed sage (*Artemisia frigida*), red threeawn (*Aristida purpurea*), mountain muhley (*Muhlenbergia montanus*), needle-and-thread grass (*Stipa comata*), blue grama (*Bouteloua gracilis*) and other various grass and forb species.

### Native grassland

The native grassland comprises small pockets between the forest and shrubland, as well as lower elevation portions along the main ravine. Species that comprise this native grassland community include fringed sage, blue grama, yucca, prickly-pear cactus (*Opuntia polyacantha*), needle-and-thread grass, green needle grass (*Stipa viridula*), little bluestem (*Schizachyrium scoparium*) and side-oats grama.

### Threatened and Endangered Plant Species

The Colorado Natural Heritage Program, has conducted a site evaluation and at this time no threatened or endangered plant species are known to occur on the Hughey Property.

### Exotic Species

A number of exotic species are present on the property, and the impact has potential to spread, especially up drainages. Several exotic species present include mule-ear mullein (*Verbascum thapsus*), cheatgrass (*Bromus tectorum*) and redtop (*Agrostis gigantea*). Both Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*) are also present and are listed as Larimer County noxious weeds.

### Forest Health

The stand classifications used in the *Horsetooth Mountain Park Forest Management Plan (1998)* can be applied to the Hughey Property as well. Stand 5 extends into the Hughey

Property and is described as follows in the *Horsetooth Mountain Park Forest Management Plan (1998)*:

Ponderosa pine and Douglas fir are the dominant species in this stand. Minor clones of Aspen (*Populus tremuloides*) were identified in this stand. Soil type is Wetmore-Boyle-Rock outcrop complex and Rock outcrop. This stand is on top of the ridge and aspects vary greatly, most are east, but vary north to east to south. Dwarf mistletoe is infecting areas of this stand with ratings as high as 6. Mountain pine beetle are active in pockets. The Colorado State Forest Service gave this stand a Wildfire Hazard rating B, with medium hazard trees.

There is a considerable level of Dwarf Mistletoe (*Arcethobium spp.*) infestation (5 out of 6 rating) in the ponderosa pine stands at the top portion of the Hughey property. Infected trees are often deformed, stunted and broom-shaped. The ponderosa stands along portions of the mesa (south border of the property) appear to be in fairly good condition with little to no infestations. Several trees have been identified as having mountain pine beetle (*Dendroctonus ponderosa*) infestations. Mistletoe and pine beetle infestation sites are indicated in Map 2.1. See Appendix A and/or the *Horsetooth Mountain Park Forest Management Plan (1998)* for additional maps and information regarding Forest Health for the Hughey Property.

According to Dale Culver (1999), the trees in the Bathtub Spring ravine are old growth trees that were never harvested because the steep canyon walls were inaccessible. The exact age of these trees is unknown.

#### **e. Wildlife**

As a buffer to Horsetooth Mountain Park Preserve, the Hughey property provides additional habitat and range for wildlife species in the Park. Deer, mountain lion, black bear, Abert's squirrels and other mammals, as well as numerous bird and butterfly species are present at times on the Hughey property. Golden eagles have been spotted around the rocks below Horsetooth Rock on what is locally called "The Thumb". The site also provides habitat and a buffer for colonies of the imperiled butterfly, the mottled dusky winged butterfly (*Erynnis martialis*), which is globally common but rare to uncommon in Colorado. The larval host plants and nectar sources for the mottled dusky winged butterfly are buckbrush and red root. A portion of the Hughey Property is contained within the B2 (high significance) Conservation Site designated by the Colorado Natural Heritage Program to protect these and other imperiled butterfly species. For additional wildlife information, refer to wildlife species lists in the *Resource Management Plan for Horsetooth Mountain Park (1998)*.

### **2.3 Visual and Scenic Resources**

The Hughey property comprises the southern flanks of Horsetooth Rock and is highly visible from both the south and west. The property is also highly visible from the trail system at Horsetooth Mountain Park Preserve, an area which receives high annual visitation. Horsetooth Rock is an important regional landmark element, comprising the scenic backdrop for many Larimer County residents. Ansel Watrous wrote in *History of Larimer County, CO Volume II (1998)*:

“Horsetooth mountain, seen so plainly from the Plains, shows off to much greater advantage when seen from its western base, which rests in the Redstone Valley.”

Protecting the 282 acres that embody the southwest portions of Horsetooth Rock, will protect the visual integrity of this important viewshed resource for the region.

Scenic views from the property include Milner Mountain and the hogbacks extending south to Carter Lake and beyond. Long’s Peak is visible to the southwest as well as several other smaller peaks. Redstone Canyon can be easily viewed from the Hughey Property as it extends northwest, flanked by the striking red sandstone cliffs for which the Canyon is named.

### **2.4 Cultural Resources**

The Hughey property provides some intriguing cultural values to add to the history of the rest of Horsetooth Mountain Park Preserve. Crossing the property is an old road bed that may have been part of the early stage road to Estes Park. Parallel to the road and in other locations are remains of short rock walls. Lichen patterns on the rocks indicate the walls have been there for a considerable time. It is suspected that the walls are a relict of post-European settlement of the area although their exact purpose is unknown. Similar to the rest of Horsetooth Mountain Park Preserve, the Hughey Property was heavily used for timber harvesting in the past. The sawmill lumber piles that are still present on the site remind the visitor of the more recent history of the site and the once heavy logging that occurred here. The springs where cattle watered still flow through the property as well.

### **2.5 Socioeconomic Resources**

#### **a. Hughey Property Land Status**

The Hughey property was purchased by Larimer County in 1998, from Audra Hughey, to buffer Horsetooth Mountain Park Preserve and expand recreational opportunities. Audra Hughey donated a portion of the total cost of the property and Great Outdoors Colorado

(GOCO) contributed a portion of the cost through the Horsetooth Mountain Park Preserve Expansion Project Grant Award. The Hughey Property is primarily natural, undeveloped forest land that has been used for cattle grazing and timber harvesting in the past.

#### Trails

Currently there are no established or designated trails on the property

#### Roadways

There are two roads that enter the Hughey Property: 1) An access road through private property that is not open to Larimer County or the public and 2) a road spur that has been used in the past for emergency vehicle access to Horsetooth Rock from the Horsetooth Rock Service Road. The service road is closed to motorized vehicles except for park personnel and designated uses.

#### Water and Mineral Rights

There are no water rights associated with the property. The existing springs are unadjudicated. Mineral rights associated with the property are owned by Larimer County.

#### Agriculture

Cattle were grazed on the property until 1995, and timber was harvested in the 1940's. No agricultural or grazing leases currently exist on the site.

### **b. Adjacent Land Use**





The neighborhood surrounding the Hughey property is predominately a mixture of three distinct land uses: Small lot development near Horsetooth Reservoir, 35-acre tracts and public open lands. Private properties surrounding the Hughey property are either in residential use or managed for cattle ranching. A large number of 35-acre lots are located in Redstone Canyon, just west of the Hughey property. The northern border and portions of the eastern border of the Hughey property are contiguous with Horsetooth Mountain Park Preserve. This 2100 acre property is owned and managed by Larimer County Parks and Open Lands Department as a regional park preserve. See Map 2.2 for adjacent property ownership.

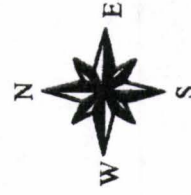
### **c. Access, Circulation and Traffic**

The Hughey Property is located west of Ft. Collins in the foothills and is a part of Horsetooth Mountain Park Preserve. Horsetooth Mountain Park Preserve has a parking lot off of County Road 38E, containing 59 parking spaces, including one handicapped parking space, 8 spaces to accommodate horse trailers and an authorized ranger parking space. There is a fee station available at the parking lot for purchase of a daily park pass.

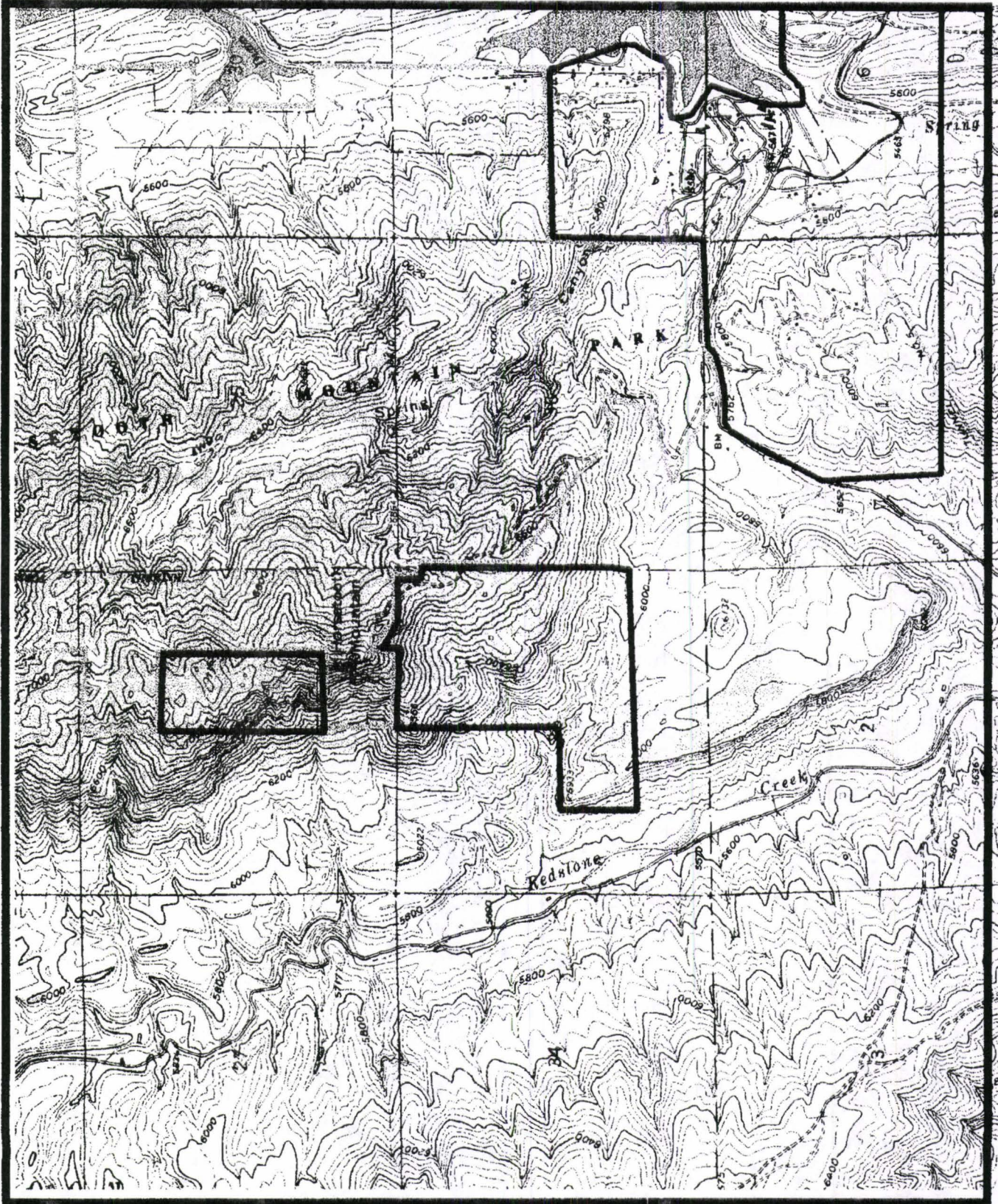
# Adjacent Land Use

Map 2.2

-  Hughey Property
-  Residential Development
-  Horsetooth Mountain Park Preserve
-  CSU Property Under Recreation Lease



0 0.10.2 Miles



**d. Public Facilities, Utilities and Services**

The Larimer County Sheriff's Department is responsible for law enforcement at Horsetooth Mountain Park Preserve. However, Larimer County Park Rangers and Volunteer Program staff are responsible for the education and enforcement of park regulations and assist the Sheriff's Department and other law enforcement agencies in responding to emergencies and preventing criminal activity. The Park Ranger and Volunteer Program staff also provide visitor assistance and emergency and medical needs. The Poudre Valley Hospital ambulance service responds to more serious medical emergencies while rescues and searches are conducted by the Larimer County Search and Rescue team of the Sheriff's Department.

The Hughey property also allows for a helicopter landing site in close proximity to Horsetooth Rock for facilitating quicker and more efficient emergency response.

**e. Recreational Use and Demand**

As a result of the close proximity of the Hughey Property to Ft. Collins, and the increased recreation use at the adjacent Horsetooth Mountain Park Preserve, demand for additional recreational opportunities is high. In a 1991 survey, Horsetooth Mountain Park Preserve was the second most frequently used park for hiking and mountain biking in Larimer County. In the *Resource Management Plan for Horsetooth Mountain Park*, it was recognized that heavy use of the park necessitated additional buffers to the park and expanded recreational opportunities. The Hughey property was one of the areas identified for acquisition to meet the ongoing recreation and wildlife needs of the park preserve.

**f. Operations Budget and Funding**

The Hughey Property operations and capital improvements are funded through Help Preserve Open Space sales tax dollars. As part of Horsetooth Mountain Park Preserve, operations and improvements of the property will also be funded through a user fee for Horsetooth Mountain Park Preserve.

### 3. OPPORTUNITIES, CONSTRAINTS AND PLANNING ISSUES

#### 3.1 Overview

During the management plan development process, input was received from Parks and Open Lands staff, a voluntary and informal Advisory Task Group and the general public on opportunities, constraints and planning issues in regards to the current existing conditions and management of the Hughey Property. **[In Process]** The two main issues were natural resources and outdoor recreation.

#### 3.2 Natural Resource Opportunities, Constraints and Planning Issues

- *Protect, manage and enhance natural, cultural and visual resources including maintaining and promoting healthy ecosystems and their processes.*

*Natural resource opportunities* include:

- Maintaining and improving the natural resources of the property to help preserve the ecosystems and species present, enhance visitor enjoyment of a natural setting and buffer Horsetooth Mountain Park Preserve.
- Protecting rare butterfly habitat and habitat buffers.
- Protecting the viewsheds from surrounding areas of the south and southwest sections of Horsetooth Mountain.

*Constraints and Planning Issues* associated with the natural resources of the Hughey Property include:

- Protection of the historic stone walls on the property is a concern.
- Preservation of any wildlife travel routes or nesting sites will be important to avoid disturbing species on the property.
- The sensitive butterfly populations may be disturbed or habitat fragmented with additional use in this area.
- Populations of Larimer County listed noxious weed species, musk thistle and Canada thistle, should be controlled.
- A dense forest cover poses a large fuel build-up and a potential fire hazard.
- Cattle from adjacent properties may be intermittently grazing on the property as a result of down fence lines.
- The sawmill piles of slab wood on the Property may pose a fire hazard or other safety concern.

### 3.3 Outdoor Recreation Opportunities, Constraints and Planning Issues

- *Provide, promote and enhance safe, enjoyable outdoor recreational opportunities while minimizing detrimental natural, cultural and visual resource impacts.*

***Outdoor recreation opportunities*** include:

- Expanding recreational opportunities to Horsetooth Mountain Park Preserve by developing an additional trail to Horsetooth Rock for horses and mountain bikes and closing an inappropriate trail that exists for horses only.
- Providing visitors with views not seen from the rest of Horsetooth Mountain Park.
- Reducing recreation pressure on the existing Horsetooth Mountain Park Preserve.
- Offering volunteer-led hikes that focus on the natural and cultural history of the property.

***Constraints and planning issues*** regarding outdoor recreation include:

- The Hughey Property has very steep terrain, and the appropriate placement of the trail is critical so as not to increase erosion.
- As a result of the close proximity of the site to Redstone Canyon, there is the potential for trespassing across private property to access the Hughey Property from the Redstone Canyon Road.
- A new trail, if not located properly, may create a scar on the hillslope that would affect the view of the property from the south and southwest.
- If not managed correctly, there may be potential multiple use conflicts associated with the future trail.
- A trail design that addresses user needs and interests must also account for protection of sensitive wildlife habitat.
- Rock climbing and bouldering safety may be an issue.

## 4. MANAGEMENT PLAN

### 4.1 Overview

To meet the purpose and objectives of the *Resource Management Plan for the Hughey Property* and to address the opportunities, constraints and planning issues brought forth by the public, staff and advisory team, the plan is divided into two main components: 1) natural resource management and 2) outdoor recreation management. As a component of Horsetooth Mountain Park Preserve, the management of the Hughey Property will follow principles delineated in the *Resource Management Plan for Horsetooth Mountain Park Preserve (1998)*. Site specific management steps, however, are addressed below.

**Overall Vision.** The Larimer County Parks and Open Lands vision for the Hughey Property will emphasize outdoor recreation while protecting natural resource values such as native vegetation communities and sensitive wildlife habitat, including rare and imperiled butterfly habitat. An approximately 1-mile long trail connection from the Horsetooth Service Road to Horsetooth Rock will be designed to protect sensitive wildlife while enabling visitors to enjoy views of Horsetooth Rock to the north and Long's Peak and the hogbacks to the south and west. Recreation opportunities will include hiking, running, wildlife viewing, mountain biking, horseback riding, as well as enjoying long vistas of the area.

Visitors and the local community near to Horsetooth Mountain Park Preserve will benefit from expanded recreational opportunities at the Park with safe, easy access. Horseback riders and mountain bikers will have an alternate access to Horsetooth Rock via the new trail connection. Residents and people passing by can enjoy the beauty of the rock formation and its natural surroundings. Users can enjoy the natural beauty of the area in a quiet, serene setting.

### 4.2 Natural Resource Management

Natural resource management addresses the health and dynamics of plant and animal communities and the protection of water resources and viewsheds. In this management plan, natural resource management is divided into four categories including: a) forest health and management; b) grassland and shrubland health and management; c) noxious weed species management; d) wildlife management and e) hydrology management.

#### a. Forest Health and Fire Management

Forest management for the Hughey Property will be included in the *Horsetooth Mountain Park Forest Management Plan (1998)*. The Hughey Property contains a forest stand

equivalent to Stand 5 of the Horsetooth Mountain Park Forest Management Plan (Appendix A). Stand 5 is characterized by Ponderosa pine and Douglas fir as the dominant species, with minor clones of Aspen. Soil types are Wetmore-Boyle-Rock outcrop complex and Rock outcrop. This stand is on top of the ridge and aspects vary greatly, most are east, but vary north to east to south. Dwarf mistletoe is infecting areas of this stand with ratings as high as 6. Mountain pine beetles are active in pockets.

*Implementation steps:*

- Expand the *Horsetooth Mountain Park Forest Management Plan* to ensure the inclusion of the Hughey Property in stand 5.
- Implement the *Horsetooth Mountain Park Forest Management Plan* with inclusion of the Hughey Property.

**b. Grassland and Shrubland Health Management**

The management of grassland and shrubland health is important for ensuring long-term sustainability of these communities. The Colorado Natural Heritage program has developed a management plan, *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)* for Horsetooth Mountain Park Preserve that includes the Hughey Property. The goal of the Plan is to reduce the impacts of noxious weed species and the fuel load that exists in the grassland and shrubland communities while protecting rare butterfly habitat. Potential management tools may include the use of grazing or controlled burns, among others, to maintain community health.

*Implementation steps:*

- Implement the *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)* as described by the Colorado Natural Heritage Program.

**c. Noxious Weed Species Management**

Noxious weed species identified at the Hughey Property include Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*). The management of these species will be done in accordance with an Integrated Pest Management (IPM) Plan, currently under development, to control noxious weed species with minimal impact to surrounding native vegetation and water sources.

*Implementation steps:*

- Coordinate the inclusion of the Hughey Property in the development of an Integrated Pest Management Plan (IPM) and monitoring strategy for noxious weed control and restoration.
- Implement the IPM utilizing staff and volunteer groups.

#### **d. Wildlife Management**

A host of wildlife species including deer, mountain lion, black bear, Abert's squirrel and other mammals, as well as numerous bird and butterfly species, are present on the Hughey property. While currently there is no active wildlife management practiced at Horsetooth Mountain Park Preserve, wildlife is protected from harassment or injury by park regulations. In the event of future needs for wildlife management, the Hughey Property will fall under any wildlife management plan developed for Horsetooth Mountain Park Preserve.

Of special concern, the Hughey Property supports habitat for several imperiled butterflies, including the state rare mottled dusky wing butterfly (*Erynnis martialis*). The management of these butterfly species falls under the *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)* developed by the Colorado Natural Heritage Program.

##### *Implementation steps:*

- Implementation management steps are identified in the *Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park (1999)*.

#### **e. Hydrology Management**

There are three known unadjudicated springs on the Hughey Property historically used for cattle watering areas. The possibility exists that there are additional springs based on public input received. While cattle grazing does not currently take place at the Hughey Property, there is the potential for future grazing practices to occur. Therefore, the health of the springs should be maintained not only for this potential future use but also to support wildlife and vegetation that rely on these water sources.

##### *Implementation steps:*

- Utilize volunteers to develop a full inventory of all springs on the property.
- Inspect and monitor all springs regularly to insure that they are still in good condition.

### **4.3 Outdoor Recreation Management**

The Hughey Property provides an opportunity to expand the non-motorized recreation trail system at Horsetooth Mountain Park Preserve by developing a 1-mile mountain bike and equestrian accessible trail to Horsetooth Rock (Map 4.1). The trail alignment will follow principles to minimize the impact on butterfly habitat and erosion potential, as well as visual impact from the west. Additionally, the trail will be built on the upper



portion of the property to discourage park visitors from accessing the lower portions of the property where trespassing onto adjacent private properties may be tempting. Designing the trail on the upper portions of the property will also serve to maintain the habitat in the lower portion of the property as a buffer for wildlife.

The Hughey Property also provides a close-in southern access helicopter landing point. This landing site will potentially help facilitate quicker and easier evacuation of emergencies that may occur in the park.

*Implementation steps:*

- Construct the new 1-mile trail to Horsetooth Rock.
- Remove internal fences between the Hughey Property and Horsetooth Mountain Park.
- Repair boundary fences to discourage trespassing onto private property and prevent livestock movement into the park.
- Post signs on boundary fences to prevent trespassing onto private property.
- Work with local emergency responders to include the helicopter landing site for rescue and evacuation use.
- Research more information regarding the origin and use of the historic stone walls.

#### **4.4 Summary of Implementation Steps and Phasing**

A tabular summary of important steps and proposed timelines are provided below. These steps will be prioritized and implemented as budget and time allows.

Hughey Property Management Implementation Steps	Cost Estimate	1999	2000	2001 and beyond	Responsible program
<b>Forest Health and Fire Management</b>					
Include the Hughey Property in the <i>Horsetooth Mountain Park Forest Management Plan</i>	-	Summer			Open Lands Program
Implement the Forest Management Plan	Unknown			Continual	Facilities and Parks Maintenance
<b>Grassland and shrubland health</b>					
Implement the Management Alternatives for Natural Communities and Imperiled Invertebrates at Horsetooth Mountain Park.	Unknown		Summer	Continual	Facilities and Parks Maintenance
<b>Noxious Weed Species Management</b>					
Include the Hughey Property in the IPM plan for the larger HTMP area.	-		Summer		Facilities and Park Maintenance
Implement the IPM plan	Unknown		Summer	Continual	Facilities and Park Maintenance
<b>Hydrology and erosion management</b>					
Inspect and monitor the condition of springs	-			Continual	Facilities and Park Maintenance
Develop a full inventory of all springs on the property.					
<b>Outdoor Recreation Management</b>					
Construct the new trail to Horsetooth Rock	\$5.00/ft.	Fall/Winter			Facilities and Park Maintenance
Repair existing boundary fences	-		Winter		Facilities and Park Maintenance
Remove internal fences to Horsetooth Mtn. Park	-		Winter		Facilities and Park Maintenance
Sign property boundaries	\$40.00 ea.		Winter		Facilities and Park Maintenance
Work with local emergency responders to include the Helicopter landing site	-		Winter		Park Ranger and Volunteer Services
Research more information regarding the origin and use of the historic stone walls.	-		Winter		Park Ranger and Volunteer Services
Trail maintenance	\$400.00/yr.			Biannual	Facilities and Park Maintenance

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## 6. APPENDICES

### APPENDIX A: Forest Stand Classification

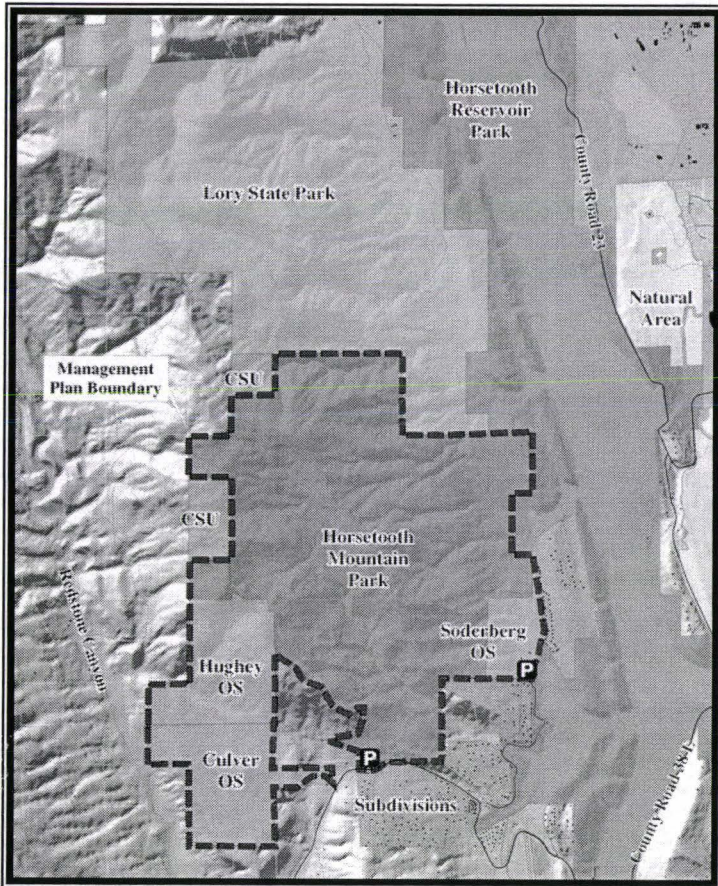
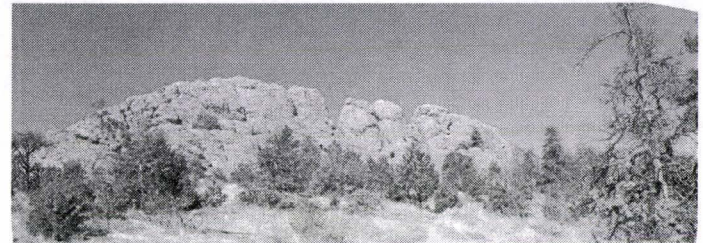
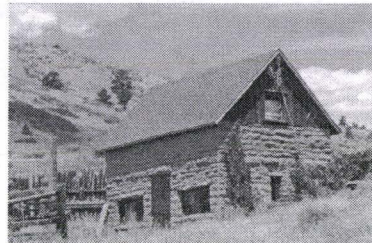
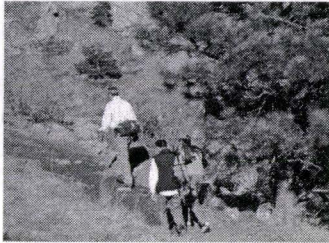
Excerpted from the *Horsetooth Mountain Park Forest Management Plan (1998)*

#### Stand 5

Ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*) are the dominant species in this stand. Minor clones of aspen (*Populus tremuloides*) were identified in this stand. This stand is on top of the ridge and aspects vary greatly, most are east, but vary north to east to south. Dwarf mistletoe (DMT) is infecting areas of this stand with ratings as high as 5. See appendix 2 of the *Horsetooth Mountain Park Forest Management Plan (1998)* for an explanation of the DMT rating system. Mountain pine beetle are active in pockets. Colorado State Forest Service Wildfire Hazard rating B, medium hazard trees.

# HORSETOOTH MOUNTAIN PARK

## Management Plan Update



### Project Newsletter

Larimer County Parks and Open Lands Department is currently updating the management plan for the Horsetooth Mountain Park. The Park is located in Larimer County just west of the City of Fort Collins, Colorado. It is important to update the management plan to address new issues, evaluate conditions, and seek public opinion. Public participation is essential to the success of the planning process. We would like to invite you to contribute to the process by participating in the public meetings, or sending us your comments.

### Process

1. Inventory and analysis: June - August
2. Technical committee meetings: July & October
3. Public outreach: August & November
4. Prepare draft alternatives: September
5. Public meeting to identify opportunities and constraints:  
August 22, 2005 at the Fort Collins Senior Center from 7-9 PM
6. Public meeting to review the draft alternatives:  
November 14, 2005 at the Fort Collins Senior Center from 7-9 PM
7. Plan Adoption: December
8. Implementation: 2006

**For more information** about the Park and this project, please visit: [www.larimer.org/parks/htmp\\_plan](http://www.larimer.org/parks/htmp_plan) To speak with the Horsetooth District Manager call: Mark Caughlan at Tel: 970-498-5600 or write to: HTMP, 1800 S. County Road 31, Loveland, CO 80537

8/22/05



**EDAW**

## Management Zones

The **Sensitive Resource Protection** zone contains important sensitive resources that could easily be disturbed. With only a few exceptions, the public is not allowed in this zone.

The **Primitive** zone offers experiences of an “untrammelled”, “pristine” environment, devoid of the works of people. No facilities are present in this zone. With only a few exceptions, the public is not allowed in this zone.

The **Backcountry** zone provides a sense of being immersed in a natural landscape, but feels further away from comforts and conveniences. Visitors must commit a relatively high level of time and energy within this zone. Only trails and primitive campsites are present.

The **Backcountry Road** zone provides access for management and antenna maintenances. The roads are only used when necessary for maintenance purposes. Visitors may use these roads as trails, but it is not the purpose of the roads.

The **Backcountry Trail** zone provides a sense of being immersed in a natural landscape and feels somewhat distant from most comforts and conveniences. Visitors must commit some time and physical exertion in this zone. The only facilities present are unpaved trails, signs, benches, picnic areas, and observation platforms. *scenic overlooks*

The **Frontcountry** zone is in an area that is predominantly natural, but with much evidence of the sights and sounds of people. Most Park visitation occurs in this zone. The only facilities are trails and service roads.

The **Frontcountry Trail** zone is a corridor that is predominantly natural, but with much evidence of the sights and sounds of people. In this zone people can see, smell, and touch park resources as they walk along a well-defined wider trail, but not feel like they are too far from their cars or park facilities. *interpretive signs, benches, scenic overlooks?*

The **Developed** zone is an area with major visitor facilities, where experiences are facility dependent (parking, trailhead, restroom, etc.). The sights and sounds of people and vehicles may be prominent.

The **Historic Preservation** zone is an area where the preservation of historic structures and landscape supersedes other management actions. The sights and sounds of people may be prominent.

1800 S. County Road 31  
Loveland, Colorado 80537  
(970) 679-4570 - Main Office - South Region (Carter Lake)  
(970) 679-4574 - FAX  
(970) 226-4517 - North Region (Horsetooth Reservoir)  
(970) 498-7985 - FAX

# Larimer County Parks

MIKE  
Notes  
to Daryl  
013098

TO: Horsetooth Mountain Park Management Plan Advisory Task Force  
FROM: Daryl R. Burkhard *DRB*  
DATE: January 16, 1998

RE: **A Draft Of The HTMP Management Plan!!!**

I hope that you all had a wonderful holiday season and are finding the new year to be going well so far. To start the new year off I bring you tidings of great joy! *The initial draft of the Management Plan for Horsetooth Mountain Park has been completed and is ready for your review!*

The draft copy that I am sending to you is the text only. There will be six maps: 1) slope, 2) soils, 3) vegetation, 4) fire hazard, 5) wildlife, and 6) landuse. In addition, there will be several appendices providing a list of birds, butterflies, and plants for the park area.

*Please review the draft and provide your comments to me by February 1, 1998.* I realize that this is a short timetable. However, we would like to present a draft of the plan to the public on March 6, 1998. I will need to incorporate your comments and run the draft by our management staff one more time before presenting the plan to the public. Your comments are very important to us. Your input and advice was extremely valuable in developing the initial draft.

Thank you for all of your help on this plan.

# TABLE OF CONTENTS

## Resource Management Plan for Horsetooth Mountain Park

<b>1. INTRODUCTION.....</b>	<b>1-1</b>
1.1 Purpose And Objectives Of The Plan.....	1-1
1.2 History .....	1-1
1.3 Scope And Organization Of The Plan .....	1-2
1.4 Public And Agency Involvement .....	1-2
<b>2. EXISTING CONDITIONS .....</b>	<b>2-1</b>
2.1 Overview .....	2-1
2.1.1 Natural Resources .....	2-1
2.1.2 Visual Resources .....	2-6
2.1.3 Cultural Resources .....	2-7
2.1.4 Socioeconomic Resources.....	2-7
<b>3. ISSUES AND CONCERNS.....</b>	<b>3-1</b>
3.1 Overview .....	3-1
3.2 Natural resource issues and concerns .....	3-1
3.3 Recreation issues and concerns .....	3-2
3.4 Environmental education issues and concerns .....	3-3
<b>4. MANAGEMENT PLAN .....</b>	<b>4-1</b>
4.1 General Management Plan.....	4-1
4.1.1 Natural resources management .....	4-1
4.1.2 Recreation management .....	4-6
4.1.3 Education/recreation opportunities .....	4-9
4.2 Land Acquisitions.....	4-11
4.3 Summary of Implementation Steps and Phasing.....	4-12

**DRAFT**

# 1. INTRODUCTION

## 1.1 Purpose And Objectives Of The Plan

Horsetooth Mountain Park was established in 1982 as a regional park preserve. The original intent behind the establishment of the Park was to protect the mountain from residential development and to provide recreational opportunities. An original management plan was drafted in 1982 to serve as a tool for management and development of the area with the assumption that the area would provide public use while maintaining aesthetics, wildlife considerations, and passive outdoor recreation opportunities.

The purpose of this document is to: 1) reexamine the management objectives for the park given the current ecological, social, economic, and political environment; 2) provide the formal program and policy guidelines that will direct the management and use of Horsetooth Mountain Park well into the future; and 3) develop specific implementation strategies for carrying out various components of the management effort. The overall objectives of the plan area to:

Protect, manage, and enhance natural, cultural, and visual resources including maintaining and promoting healthy ecosystems and their processes;

Provide and promote safe, enjoyable outdoor recreation opportunities while minimizing detrimental impacts upon natural, cultural, and visual resources;

Provide educational opportunities regarding the values of the surrounding natural, cultural, and visual resources and the importance of responsible use and stewardship of the land;

Define implementation policies, programs, and responsibilities for the above goals as well as provide specific implementation steps where appropriate.

## 1.2 History

The history of Horsetooth Mountain dates back as far as 10,000 B.C. when Indians used the area as a hunting and gathering ground. According to Indian legend, Horsetooth Mountain is the body of a giant that was slain by an Indian warrior who slashed the giant's heart - Horsetooth Rock. The death of the giant brought peace and tranquillity to the Valley of Contentment (Spring Canyon).

Fur trappers and traders began to move into the area as early as 1825. Settlers soon followed with the discovery of nearby gold in 1858. By the 1870's Horsetooth Mountain became a popular place to recreate. In the 1880's, the quarrying of sandstone in Spring Canyon created a demand for lumber which was harvested from the mountain slopes. Over time regular land use

practices on the mountain and surrounding land included cattle grazing, lumber harvesting, quarrying, and farming. Some early landowners were the Herringtons, Culvers, and Soderbergs. By 1952, the Soderbergs owned the majority of the park land.

In the early 1980's Horsetooth Mountain came under the threat of impending residential development. In response, several Colorado State University students began a petition to purchase the Soderberg Ranch for a county park. Funding would be provided by extending an existing one cent sales tax for six months. The issue, placed on the April 28, 1981 ballot, passed and by 1982, Larimer County became the owners of Horsetooth Mountain Park. Since that time a trailhead with parking, picnic, restroom, and drinking water facilities has been established. The trailhead provides access to approximately 27 miles of trail that have been developed for the enjoyment of visitors.

### 1.3 Scope And Organization Of The Plan

The resource management plan for Horsetooth Mountain Park contains three major sections: 1) a review of existing conditions, including natural, cultural and socioeconomic resources, 2) a discussion of issues and concerns related to management of the park, and 3) a management plan addressing both existing conditions and subsequent issues and concerns.

### 1.4 Public And Agency Involvement

Extensive public and agency involvement was utilized to ensure full representation of those interested in the park. An advisory task force was established to provide resource expertise and diverse user input into the preparation of the resource management plan. The following is a list of the task force members and their representative interest:

<i>Name</i>	<i>Affiliation</i>	<i>Expertise</i>
Tom Bender	Farm Bureau	Agricultural land management
Mike Babler	Colorado State Forest Service	Forest management/fire control
Daryl Burkhard	Larimer County Parks and Open Lands	Project coordinator
K-Lynn Cameron	Larimer County Parks and Open Lands	Outdoor recreation and planning
Jim Dunlap	Spring Creek Velo Club	Mountain biking user representative
Andre Duvall	Colorado Division of Wildlife	Wildlife biology
Mike Fleming	Larimer County Parks and Open Lands	Public health and safety/ outdoor recreation/forest management
Dick Fletcher	Lory State Park	Park management
Mike Foley	U.S. Forest Service	Fire ecology and forest management
Don Griffith	Larimer County Sheriff's Dept.	Public health and safety

Steve Kettler	Colorado Natural Heritage Program	Ecology/plant and natural communities
Sue Kenney	City of Fort Collins	Environmental education
Karen Mancini	City of Fort Collins	Natural resources
John MacFarlane	Larimer County Parks and Open Lands	Director of Parks and Open Lands/ water resources and outdoor recreation
Paul Opler	N.B.S./CSU	Entomology/ecology
Diana Pernicka	Volunteer Mounted Patrol	Horseback riding user representative
Renee Rondeau	Colorado Natural Heritage Program	Ecology/plant and natural communities
Clint Wasser	Retired Professor/CSU	Range management
Ken Woods	Larimer County Parks and Open Lands	Facilities/outdoor recreation

The task force met four times during the planning process and participated in individual interviews with County staff to establish critical information regarding the park's condition and to assist with issues identification for the management plan.

Two public workshops were conducted to provide for public input. The first workshop introduced the management plan process, reviewed existing conditions of the park, and identified public concerns regarding the park. The second workshop [**to be held**] presented the proposed management plan for public review.

A visitor survey was conducted in the summer of 1997. The survey was designed to provide user profile information and identify user perceptions regarding facility and trail conditions, fee and management practices, and user conflict or crowding. A discussion of pertinent survey results is provided under *Existing Conditions: Recreational Use and Demand*. A summary of survey results is found in Appendix A.

## 2. EXISTING CONDITIONS

### 2.1 Overview

Horsetooth Mountain Park is located west of Fort Collins in the foothills along the eastern edge of the Colorado Rocky Mountains. The approximately 2027 acre park is home to prominent geologic features, diverse wildlife habitat, and popular outdoor recreational opportunities. The park was purchased by Larimer County for its recreational use opportunities, and for protection of the Horsetooth Mountain area. The park is bounded by Lory State Park on its north edge and Horsetooth Reservoir to the east creating a popular foothills recreation destination for users throughout the Northern Front Range.

#### 2.1.1 Natural Resources

##### a. Climate

Horsetooth Mountain Park is located along the eastern slope of the Rocky Mountains and has a highly variable climate that is prone to sudden change. In general, the climate can be characterized as semiarid with a strong seasonal variation in temperatures, abundant sunshine and relatively low precipitation. Unless stated otherwise, the data presented below were recorded at Fort Collins which is over 500 feet lower in elevation. The data, however, are generally reflective of conditions at Horsetooth Mountain Park.

The average maximum daily temperature (F) is approximately 70 degrees or above during five months of the year (May through September), with the daily average maximum reaching approximately 85 degrees in July and August. High temperatures occasionally exceed 100 degrees, but nights are generally cool, with an average low during the summer months of approximately 54 degrees. The average frost-free period at the park is 118 days, extending from May 22 to September 16. Winters are generally cold but are characterized by substantial swings in temperature. January is the coldest month with an average daily maximum of 41.5 degrees and an average daily minimum of 13.6 degrees. The lowest temperature during the period of record is minus 41 degrees. However, high temperatures in the 50's are not uncommon even in the winter months, which encourages trail use, picnicking and other outdoor activities on a year-round basis.

Average annual precipitation is 14.4 inches, with the highest amount occurring in May. Average annual snowfall is approximately 50 inches. Much of the park, especially south-facing slopes, has snow on the ground for only several days at a time.

Prevailing winds are from the north-northwest during the winter months and from the south-southeast in the summer. Late winter and early spring are usually the period of strongest winds

and velocities in excess of 100 miles per hour have been recorded. Strong winds resulting from thunderstorms are also fairly common in summer and wind direction associated with these storms is often from the north-northwest. Wind direction, however, can be highly variable. (EDAW 1993).

#### b. Topography

The primary topographic features of the park include Horsetooth Mountain (which contains the Horsetooth Rock formation), a series of intermittent drainage ways and valleys, and moderate hogbacks near Horsetooth Reservoir. The maximum elevation change in the Park is 1815 feet with the lowest point at 5440 feet near Dixon Cove and the highest point on Horsetooth Rock at 7255 feet.

*Note 5430 - is the high water elevation of Horsetooth Reservoir -*

The majority of the park contains steep slopes (over 15%). A few areas of gentler slopes occur near the entrance at the south end of the park and along the tops of ridgelines. Most areas contain slopes of 30% or greater with some localized areas exceeding 50%. (See Map 2.1).

#### c. Geology/Soils

Horsetooth Mountain Park and surrounding lands lie in a complex geologic setting that forms the transition zone between the Great Plains to the east and the Rocky Mountains to the west. The park is a geologic showcase including the three major rock classes: igneous, metamorphic, and sedimentary. Horsetooth Mountain, containing the Horsetooth Rock formation, is described as:

“an anticlinal structure strongly elevated above sedimentary rocks on the south and west and grading into sedimentary rocks on the east. Hogbacks of resistant sandstone flank the east side of the mountain while a syncline borders the southwest side. Horsetooth Mountain is a rugged mountain due to its history of metamorphism, igneous intrusions, folding, faulting and erosion. Milner Mountain to the south of this area would be a continuation of Horsetooth Mountain, but was separated by the Buckhorn Creek Fault, Horsetooth Fault, and erosion.” (Hendon 1984, pp.17-19)

Soil associations have been developed and mapped in Larimer County by the U.S.D.A. Natural Resource Conservation Service (formerly the Soil Conservation Service). These soils associations are illustrated on Map 2.2. According to the survey, there are two main soil associations within the park: the Wetmore-Boyle-Rock outcrop complex and the Ratake-Rock outcrop complex.

Wetmore-Boyle-Rock outcrop soils complex. The Wetmore-Boyle-Rock outcrop soils complex occurs throughout the entire west and central portions of the park. The U.S.D.A. Natural Resource Conservation Service (NRCS) describes the complex as follows:

“These soils are shallow, strongly sloping to very steep, well-drained soils that formed in material weathered from granite. They are found on mountainsides and ridges and are underlain by granite bedrock at a depth of less than 20 inches. Wetmore gravelly sandy

loam is in the forested areas, Boyle gravelly sandy loam is in the open grassy areas, and Rock outcrop occurs throughout, but is most common near ridgetops. These soils have rapid runoff and hazard for erosion is severe.”

These soils are rated as having severe limitation in all categories of recreational development indicating that costly soil reclamation, special design, or intensive maintenance, or a combination of these is required.

Ratake - Rock outcrop complex. The Ratake - Rock outcrop complex is the most prominent soil association on the eastern portion of the park. The NRCS describes the complex as follows:

“The series consists of shallow, well drained to excessively drained soils that formed in material weathered from granite, schist, or phyllite. They are found on upland ridges and mountainsides and are underlain by weathered phyllite, schist, or weathered granite at a depth of 10 to 20 inches. The soils have rapid runoff and hazard for erosion is severe.”

The Ratake-Rock outcrop complex is also rated as having severe limitation in all categories of recreational development.

Nearly all of the remaining soils in the park are also characterized as having moderate to severe erosion potential, and severe limitations for recreational development. In most cases, these sensitive soils reflect some combination of steep slopes and shallow depth to bedrock/rock outcrops. The Satanta, and Harlan fine sandy loam are the most suitable for recreational development with moderate to good ratings. These occur in limited areas on the eastern edge of the park.

#### d. Hydrology

The steep slopes and folding land forms within Horsetooth Mountain Park act to quickly drain surface runoff to the east toward Horsetooth Reservoir. Given the semi-arid climate, these drainage ways generally carry intermittent flows most common during the spring snowmelt period and after heavy rain events. Wetland areas are limited to areas along Spring Canyon.

#### e. Vegetation

Vegetation types present within Horsetooth Mountain Park include open ponderosa pine (*Pinus ponderosa*) woodland, mixed ponderosa pine/Douglas-fir (*Pseudotsuga menziesii*) areas, mountain mahogany (*Cercocarpus montanus*) shrubland, meadow grassland, riparian areas, and rock outcrop areas. Major vegetation types are shown in Map 2.3.

Open Ponderosa Pine Woodland. The forest communities within Horsetooth Mountain Park are dominated by ponderosa pine woodlands. This community occurs throughout the park along ridgetops characterized by steep slopes and rocky, shallow soils. Some understory shrub species occur within this vegetation type, although the majority of the forested community remains as an open woodland. Understory species common to these areas include mountain mahogany

(*Cercocarpus montanus*), common juniper (*Juniperus scopulorum*), chokecherry (*Prunus virginiana*), bitterbrush (*Purshia tridentata*), and kinnikinnik (*Arctostaphylos uva-ursi*), among others.

Ponderosa Pine/Douglas-fir Woodland. The ponderosa pine/Douglas-fir woodland occurs in abundance within the park along north-facing slopes and along sheltered drainages. The areas are characterized by moderate to steep slopes and rocky, shallow soils. Understory shrub and forb species are common within the community including common juniper and scattered grasses.

Mountain Mahogany Shrubland. The mountain mahogany shrubland occurs in openings within forested communities and extends along drainages into the meadow grassland community. This community occurs in the south and eastern portions of the park in areas of moderately steep slopes and shallow soils. This vegetation type is dominated by the mountain mahogany shrub species but also includes other shrubs such as currant (*Ribes sp.*) and skunkbush (*Rhus trilobata*). A herbaceous understory to the shrubs consists of various grass and forb species including fringed sage (*Artemisia frigida*), needle-and-thread grass (*Stipa comata*), and blue grama (*Bouteloua gracilis*).

Meadow Grassland. The meadow grasslands occur along the eastern edge of the park. They are predominant in valley bottoms and gentle side slopes with relatively deeper soils. This vegetation type is dominated by an herbaceous layer and infrequently includes shrub species which are a minor vegetative component. Dominant grass species include big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), needle-and-thread grass (*Stipa comata*), New Mexico feathergrass (*Stipa neomexicana*), Indian rice grass (*Stipa hymenoides*), threeawn (*Aristida sp.*), and blue grama (*Bouteloua gracile*). Common forb species include sand lilies (*Leucocrinum montanum*), three fingered milk vetch (*Astragalus tridactylieus*), prickly-pear cactus (*Opuntia polyacantha*), milkweed (*Asclepias sp.*), sunflowers (*Helianthus sp.*), and goldenrod (*Solidago sp.*).

Riparian Areas. The dominant riparian area within Horsetooth Mountain Park is limited to the primary drainage channel created by Spring Canyon. The Spring Canyon wetland area is fed by seasonal runoff increased by the shallow soils within the park. It is dominated by woody and herbaceous species such as chokecherry, currant, cottonwoods (*Populus sp.*), willows (*Salix sp.*), sedges (*Carex sp.*), rushes (*Juncus sp.*), grasses, and various forbes. *QD pen*

Rare, Threatened or Imperiled Species. A portion of the park has been designated as a significant Colorado Natural Heritage Site, primarily because it is known to support a colony of rare or imperiled butterfly species. But other rare species documented from the area include: prairie goldenrod (*Solidago ptarmicoides* = *Unamia alba*), and the forktip three-awn grass (*Aristida basiramea*). In addition, a watchlisted<sup>1</sup> disjunct relic species, the grassfern (*Asplenium septentrionale*) is located on Horsetooth Rock.

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<sup>1</sup> Watchlisted species include those species that are not classified as rare but are infrequent enough to merit ongoing occurrence data collection and analysis to determine if more active tracking is warranted.

Additional uncommon or protected species found within the park include Blue toadflax (*Linaria canadensis*) (Hendon 1984) identified as infrequent by Weber (1996), and Colorado Blue Columbine (*Aquilegia coerulea*), a state protected flower.

Exotic Plants and Noxious Weeds. Some exotic plants and noxious weeds have become established as a result of historic land use, including grazing, and current recreation use of the park as well as natural introductions from surrounding areas. The species that is of greatest concern and exists in large populations in Horsetooth Mountain Park is Canada thistle (*Cirsium arvense*). In addition, musk thistle (*Carduus nutans*) and the dalmatian toadflax (*Linaria dalmatica*) have been identified in the park and have the capability of becoming a serious problem. While leaf spurge (*Euphorbia esula*) has not been identified in the park, the recent scouring of Spring Creek by the flood of July 28 leaves the riparian area particularly vulnerable to the invasion by noxious weeds such as leafy spurge. Other known exotics in the park include the ubiquitous cheatgrass (*Bromus tectorum*) and several other bromes (*B. japonicus*, *B. inermis*).

Other plants are known as poisonous to grazing livestock or humans. Such plants which can be found in Horsetooth Mountain Park include poison ivy (*Toxicodendron radicans*), geyer larkspur (*Delphinium geyeri*), nelson larkspur (*Delphinium nelsonii*), silver lupine (*Lupinus argenteus*), spotted hemlock, and foothills deathcamus (*Zigadenus paniculatus*). None of these plants pose a significant threat to park users. In the event of livestock grazing, significant impacts to livestock can be controlled through appropriate grazing schedules. A list of known plant species located in the Horsetooth Mountain Park area is found in Table 1 (Appendix B).

Fire hazard. Horsetooth Mountain Park is located in a fire prone and fire driven ecosystem. With the advent of fire suppression and the lack of grazing in the park, a significant fire load has accumulated in the park. In addition, in the absence of fire, understory growth and forest tree density are at a level in many locations as to pose a serious fire hazard. Based upon fire hazard mapping provided by the Colorado State Forest Service, approximately 1/3-1/2 of the park is rated as a severe fire hazard with the bulk of the remaining park rated as a medium fire hazard.

#### **f. Fish and Wildlife**

Horsetooth Mountain Park is located within an ecotone, or ecological transition area, containing characteristics of the Montane Zone to the west and the Prairie Grasslands to the east. The blending of these two ecological zones in this transition area provides a variety of habitat types for both resident and migratory wildlife species. The mosaic of habitat types within the area is able to support a greater abundance and diversity of wildlife species than either of the contributing zones alone (EDAW 1993).

A diverse mammal population can be observed within the parks boundaries. Large vertebrate species which inhabit the park include mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), coyote (*Canis latrans*), and black bear (*Ursus americanus*). Elk (*Cervus canadensis*) and white-tailed deer (*Odocoileus virginianus*) have occasionally been observed within the park. Mule deer provide the primary prey base for the occasional mountain lion recorded in this area. Black bears are commonly observed at the park. Other mammals reported in the park area

include the least chipmunk (*Eutamias minimus*), uinta chipmunk (*Eutamias umbrinus*), rock squirrel (*Citellus variegatus*), golden-mantled squirrel (*Citellus lateralis*), Abert's squirrel (*Sciurus aberti*), hispid pocket mouse (*Perognathus hispidus*), deer mouse (*Peromyscus maniculatus*), rock mouse (*Peromyscus difficilis*), mexican woodrat (*Neotoma mexicana*), prairie vole (*Microtus ochrogaster*), porcupine (*Erethizon dorsatum*), red fox (*Vulpes fulva*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), mountain cottontail rabbit (*Sylvilagus nuttalli*), and bobcat (*Lynx rufus*) (Hendon 1984). See Table 2, Appendix B for a list of common mammal species located in the park.

At least ten species of reptiles and amphibians are represented are found in the park including the prairie rattlesnake (*Crotalus viridis viridis*). Other reptiles and amphibians documented within the park include the bullsnake (*Pituophis melanoleucus*), milk snake (*Lampropeltis triangulum*), garter snake (*Thamnopsis sp.*), plains hognose snake (*Heterodon nasicus nasicus*), eastern yellowbelly racer (*Coluber constrictor flaviventris*), prairie-lined racerunner (*Cnemidophorus sexlineatus viridis*), red-lipped plateau lizard (*Sceloporus undulatus erythrocheilus*), Woodhouse's toad (*Bufo woodhousei*), and the boreal chorus frog (*Pseudacris triseriata maculata*). (Hendon 1984)

Birds are especially abundant within the park with 126 bird species identified within Horsetooth Mountain Park and neighboring Lory State Park. These birds include a pair of nesting golden eagles (*Aquila chrysaetos*) and wintering bald eagles (*Haliaeetus leucocephalus*). Table 3 (Appendix B) lists observed bird species and their frequency within the parks. A list of butterfly species found within the Horsetooth Mountain Park area is documented in Table 4 (Appendix B).

Rare, Threatened or Imperiled Species. There are several rare and imperiled butterfly populations in the park including the butterfly hop-feeding azure (*Celastrina sp.1*) and the mottled dusky wing butterfly (*Erynnis martialis*). Consequently, the Colorado Natural Heritage Program has designated much of the southern portion of the park as a conservation site of very high significance (B2). The butterfly hop-feeding azure (*Celastrina sp.1*) is a globally imperiled species known to occur only on the Colorado Front Range from Douglas County north to Larimer County. The mottled dusky wing butterfly (*Erynnis martialis*) is globally common but rare to uncommon in Colorado. An additional rare butterfly documented in the area is the Schryver's elfin butterfly (*Callophrys mossii schryveri*) (Colorado Natural Heritage Program 1996).

In addition to rare butterfly populations, the park has provided important habitat to wintering bald eagles, a federally listed threatened species. A communal winter night roost has been identified in the park.

### 2.1.2 Visual Resources

The prominent land form and visual landmark of Horsetooth Mountain Park is the rock outcrop from which the park is named, Horsetooth Rock. It is a familiar landmark in the Fort Collins

area, and those who hike to its peak are rewarded with impressive views across the eastern plains and over much of the Northern Front Range. From Horsetooth Rock, one can see southern landmarks such as Round Mountain, Indian Peaks, Mount Meeker and Longs Peak, among others. A northern view reveals the rolling and unique landscape of the Larimie Foothills. Other less elevated viewpoints exist within the park offering exceptional views over the surrounding foothills. These dramatic views dominate the overall setting of the park.

In contrast, many areas within the steep and rocky land forms offer more enclosed, quiet settings such as those areas near Horsetooth Falls and Culver Falls. Many unique rock outcroppings are scattered throughout the park providing additional visual interest for park visitors. The diverse natural surroundings of woodlands, shrublands and meadows provide a mosaic of settings from the dramatic to the intimate.

### 2.1.3 Cultural Resources

While Horsetooth Mountain has seen considerable human activity through time including native Indian hunting and camping, farming, ranching, mining, and timber harvesting, there are only a few remnants of these activities in the park. The most lasting impact of past activity seen in the park today is the effect of timber harvesting. Many of the trails used for recreational activity were originally established as logging roads. The remnants of old sawmill slash piles may be seen along the Wathan trail, Spring Creek trail, and adjacent to an old loggers cabin that still stands near the juncture of Loggers trail and Saw Mill trail.

In addition to the timber harvesting activity, there is evidence of prospecting efforts made in the park. An old mine is located near the Soderberg trail. The appearance of the mine would suggest that the prospector was unsuccessful in locating any valuable ore.

While past historical activity tickles the imagination, it is important to consider and honor current human activity as well. At the junction of the Soderberg and Horsetooth Rock trails one may observe the John Blake memorial. This plaque was placed here in loving memory of John Blakeman by his brother. In 1987, John Blakeman, a Colorado State University doctoral student, was visiting Horsetooth Mountain Park when he fell to his death off Horsetooth Rock. The plaque serves to not only memorialize John Blakeman but to remind visitors to the park that care should be taken when climbing the Rock.

### 2.1.4 Socioeconomic Resources

#### a. Horsetooth Mountain Park Land Status

Horsetooth Mountain Park consists of approximately 2040<sup>7</sup> acres that were purchased by Larimer County for the purposes of protecting the Mountain and for recreational use. Larimer County Parks and Open Lands Department manages the park for both outdoor recreational and natural

resource protection purposes. The entire park is open to the public but only for non-motorized, passive recreational use. Basic facilities such as parking, trails, restrooms, and picnic facilities are provided. Currently there are 27 miles of trails including two service roads.

The service roads are closed to motorized vehicles except for park personnel and designated uses. The service road that provides access to Horsetooth Rock from the public parking lot off County Road 38E crosses private property belonging to the Audra and Don Hughey. Larimer County Parks and Open Lands Department has the right to access the service road on the Hughey property to carryout park business. The service road is gated at the two entrances to the Hughey property.

*Radio towers.* Contained within the Park is a five acre inholding owned by George Kinnison. This property, located at the top of the mountain on the north side of the Park is restricted in its use to the operation of communications towers and related structures and equipment. Currently the property is leased by George Kinnison to nine radio tower operators. In addition, the Colorado State Board of Agriculture owns property on the crest of the mountain to the south of the Kinnison property and next to Horsetooth Mountain Park on the west side of the Park. Radio tower operators also lease this property. Both the Colorado State Board of Agriculture and George Kinnison have the right to use the access road off Minuteman Drive to reach their property. In addition, all of the radio tower operators also have access right of way but strictly for bona fide business purposes. The access road is maintained by the county to a level considered passable by 4-wheel drive vehicles. Any further maintenance is performed by George Kinnison.

*Fuelwood agreement.* In 1983, Larimer County acquired property from the Culver family through a land exchange that realigned the western boundary of the Park and provided better access to Horsetooth Rock. As a part of that transaction, the Culver family retained the right to cut and remove dead timber from the transferred property. This right will continue with the Culver family as long as they own the property adjacent to the transferred property<sup>2</sup>. For the purpose of collecting firewood, the Culver family has the right to use County roads for entering and exiting the Park. There are some timing restrictions for the firewood collecting. Firewood may not be collected on holidays and weekends during the summer season and may not be collected during times of "very high" or "extreme" fire hazard conditions.

*Easements:* There are several power line easements owned by the Poudre Valley Rural Electric Association that occur on the park. These easements provide power to the parking lot on the south side of the park and to the radio towers located on the five acre private inholding. In addition an easement connects the towers area with property to the north of the park.

*Restrictive hunting covenant.* Under the terms of the Deed transferred from the Soderberg family to Larimer County, hunting is prohibited on the property as long as the property is owned by a public entity.

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<sup>2</sup> Audra Hughey is a member of the Culver family.

*Mineral rights.* The acquisition of the property from the Soderberg family included the transfer of all associated mineral rights with the exception of the mineral rights on Section 36-7-70 which are owned by the State of Colorado.

*Agriculture.* No agricultural or grazing leases currently exist on the site although four month grazing operations were allowed until 1994. The grazing lease was terminated in 1994 due to overgrazed range conditions, conflict between park visitors and cattle, problems associated with ineffective cattle movement, as well as a few other management concerns. These past grazing operations provided significant revenue for the Park and somewhat reduced the fire hazard associated with the build-up of fuels.

*Stock tanks  
in Mill Canyon*

As a result of historical grazing practices in the Park, there are five watering holes with the remnants of associated salt licks. The soil in these areas are eroded due to the placement of the salt directly on the soil and the subsequent consumption of the salty soil by wildlife.

**b. Adjacent Land Use**

*Colorado State Board of Agriculture property.* The Colorado State Board of Agriculture owns approximate 80 acres to the west of the Park and 40 acres to the Northwest of the Park. Since 1984, Larimer County had been granted a recreational easement allowing hiking and equestrian trails and such other facilities considered necessary to utilize fully these properties for recreational purposes. The easement will continue in effect until such time that the Board chooses to terminate the license. In 1996, Colorado State University expressed an interest in exploring possible land sale or trade with Larimer County regarding the acreage adjacent to Horsetooth Mountain Park.

*Lory State Park.* Lory State Park is situated to the north of Horsetooth Mountain Park and encompasses 2,492 acres. This park, owned and managed by the Colorado State Parks, provides passive recreational opportunities and natural resources management similar to Horsetooth Mountain Park. Together these two parks cover over 4,500 acres of contiguous natural landscape.

*Horsetooth Reservoir.* Horsetooth Reservoir and its surrounding land is owned by the Bureau of Reclamation and managed by Larimer County Parks and Open Lands. The reservoir area consists of approximately 2000 acres of water surface area and 2000 acres of adjoining land. The area abuts Horsetooth Mountain Park on portions of the Park's northeastern edge. Residential development and private grazing lands separate the Reservoir area from the Park along its southeastern borders.

*Private residential and grazing.* To the west of the park are significant areas of rural residential development and grazing lands. To the south and southeast of the park, residential development is significantly greater with urban densities. Due to the degree of residential development occurring around the park, the park may be considered by some to be, in practical terms, an urban park. See Map 2.6 for surrounding land uses.

**c. Access, Circulation and Traffic.** The road systems in the region provide good access to Horsetooth Mountain Park. Interstate 25, the primary north-south artery through eastern Colorado and Wyoming, is located approximately 10 miles east of the Park. Several major roads link Interstate 25 to the City of Fort Collins area. Horsetooth Mountain Park is located in the foothills just west of Fort Collins. County Road 38E provides access to the Park from Fort Collins to the west and also from Loveland and Estes Park to the south via Masonville.

Horsetooth Mountain Park is also readily accessible to bicyclists from Fort Collins (population 106,466). Mountain bikers frequently use the county roads to bike from Fort Collins to the Horsetooth Mountain Park and then continue up the Park trails. Consequently, Horsetooth Mountain Park is readily accessible by motorized vehicle and bicycle.

The Park contains one main public entrance off of County Road 38E on the south end of the park that provides for public parking. The paved parking lot contains XXX parking spaces, including XXX spaces to accommodate horse trailers, and is the trail head for the Park's trail system. This public entrance is manned most of the year for the purposes of fee collection and to provide public information. A self-service fee collection station is also available at the parking lot for after hours and off-season use.

Another entrance to the park that is closed to public vehicular traffic is on the east side of the park off of Minuteman Drive. This entrance provides private access to the radio towers at the top of the mountain and is used by parks department staff for maintenance and park patrol services. While this entrance is not an official public entrance to the park, the public frequently uses this entrance by parking along the roadside. This is particularly true for mountain bikers interested in directly accessing the northern sections of the park.

**d. Public Facilities, Utilities and Services**

*Potable water.* A drinking water fountain is located at the entrance on the south side of the Park. Water is provided by the Spring Canyon Water & Sanitation District. At this time, the County has the right to only one water tap as granted by the Spring Canyon Water & Sanitation District. In addition to providing drinking water, this tap also provides water for an irrigation system for the parking lot and watering facilities for horses at the parking lot.

*Sewage.* A vault toilet is located at the entrance to the park.

*Solid waste.* Trash is collected from dumpsters and trash receptacles by Larimer County Parks and Open Lands staff and hauled to the Larimer County Land Fill.

*Fire protection.* Fire protection is ultimately the responsibility of the Larimer County Sheriff's Department. The park, however, is also served by the Poudre Valley Fire Protection District.

*Public safety.* The Larimer County Sheriff's Department is responsible for law enforcement. The Park Rangers and Volunteer Program staff are responsible for the education and enforcement of park regulations and assist the Sheriff's Department and other law enforcement agencies in

responding to and preventing criminal activity in the park. The Park Rangers and Volunteer Program staff also provide visitor assistance and emergency and medical needs. The Poudre Valley ambulance service responds to more serious medical emergencies while rescue and searches are conducted by the Larimer County Search and Rescue team.

**e. Recreational Use and Demand**

Recreation at Horsetooth Mountain Park consists of passive land based activities such as hiking, mountain biking, picnicking, and horseback riding. The park is located just 4 miles east of the City of Fort Collins which contains a population of 106,466 (1997). Larimer County currently contains a population of 228,423 (1997).

In a 1991 survey, Larimer County residents named Horsetooth Mountain Park as their second favorite Larimer County Park, next to Horsetooth Reservoir. Horsetooth Mountain Park was the second most frequently used park for hiking and mountain biking in the county. Horsetooth Mountain Park was a favorite destination for survey respondents primarily because of the hiking opportunities and scenery/beauty. Close proximity to home also played an important role.

In July-August 1997, a contact survey was conducted representing 342 visitors. Of 96 surveys completed, 18 or 19% of the respondents came from outside of Larimer County including 9 or 9% from outside the state. With Larimer County projected to grow 26 % in population in the next 12 years, Horsetooth Mountain Park's importance to nearby urban areas will become greater, and the demand for outdoor recreational opportunities is expected to increase proportionally.

In the 1991 survey, 45% of the respondents rated the overall quality of the park as "good" while 39% of the respondents rated the overall quality of the park as "excellent". This favorable rating was reconfirmed in a 1997 contact survey in which 94% of the respondents rated their experience at the park as "good" as opposed to fair or poor.

These visitors rated hiking as the most important reason for their visit (68%) with exercising (39%), solitude (17%), being with others (19%), mountain biking (14%), and wildlife viewing (14%) also being strong reasons for the visit. When asked why they chose Horsetooth Mountain Park, 68% of the respondents indicated that it was because it was close to home.

The majority of the people visiting the park are in small groups with 1-2 people being the most common group size. However, 25% of the respondents came in groups of 8 or more. The groups contained individuals of all ages with the largest percentage in the 31-40 year old age group. While the majority of the users were repeat users visiting the park from 1-10 times a year, 24% were first time users and 21% visited the park more than once a month. Most individuals visit the park for a period of 2-4 hours (68%). 26% visited for less than 2 hours and 6% visited for more than 4 hours. This time period is consistent with the areas in the park experiencing the heaviest use. Over 83% of the trail use in the Park occurred in the southern part of the park going towards Horsetooth Rock or Horsetooth Falls.

In the 1997 survey, visitors were asked to rate the quality of several attributes of the park including: natural environment, trails, parking facilities, picnicking facilities, visitor information, and the brochure. In all cases a majority of the respondents rated the park attributes as excellent.

**f. Operations Budget and Funding**

Horsetooth Mountain Park operations are funded through several sources including lottery funds, user fees, and other miscellaneous sources with most of the operating fund deriving from user fees. Lottery funds (Conservation Trust Fund) are used exclusively for capital improvement projects. As property is purchased and added to the existing park system with Help Preserve Open Space sales tax dollars, funding will be available from this source as well for park maintenance and operations.

In 1996, the Horsetooth Mountain Park operations budget was \$65,468. Of this, \$44,702 supported regular and seasonal employees, \$11,264 was used for operation and maintenance costs, and \$9,500 was spent on other capital outlays. The Horsetooth Mountain Park budget for 1997 was \$55,961 with \$44,704 allocated to personnel and \$11,257 allocated to operations and maintenance. Horsetooth Mountain Park's direct operating budget consists predominantly of trail and staging area management and maintenance.

### **3. ISSUES AND CONCERNS**

#### **3.1 Overview**

During the management plan development process, input was received from management staff, the Advisory Task Force, and the general public regarding issues and concerns that individuals had with the current existing conditions and management of the park. These issues may be divided into three key components: 1) natural resources, 2) outdoor recreation, and 3) environmental education.

#### **3.2 Natural resource issues and concerns**

Issues identified regarding natural resources are as follows:

- There is a significant fire hazard in the park due to fuel build-up. Active fire mitigation management is needed.
- Overall forest health is impaired due to the presence of disease and insect infestations.
- Range health, grass- and shrublands, is impaired due to the extensive existence of undesirable weeds, non-native species, and fuel build-up. The reintroduction of grazing may be desirable.
- Rare butterfly habitat is currently threatened by non-native species and the spraying for noxious weeds (Canada thistle) where native species (thistles) are inadvertently sprayed as well.
- Nesting raptors and other sensitive species may be disturbed by recreation. Locations of these sensitive areas need to be inventoried and monitored to make sure that trails and recreational activity are not negatively impacting them.. Seasonal trail closures of trails should be considered.
- Some trails are close to riparian areas and falls. These are sensitive areas that are easily impacted by recreational use.
- Wildlife may be negatively impacted by recreational use. Efforts should be made to minimize impact.
- Wildlife is currently using old salt lick locations for the residual salt in the soil. This is causing soil depressions and puddles. These areas should be treated and restored.
- Excessive use of the park would eliminate the primitive feel of the park, particularly in the north. Over use of the park should be prevented.
- In order to prevent future adjacent residential development from infringing on the park, additional buffers to the park should be acquired.

### 3.3 Outdoor recreation issues and concerns

Issues identified regarding recreation are as follows:

- There is multi-user conflict and a lack of trail etiquette among some users of the park. User conflict concerns focus primarily on biker/hiker and biker/horseback rider interaction. Education and enforcement programs are needed. One idea that was stressed is the formation of a multi-use volunteer patrol to educate users on trail etiquette and encourage compliance
- Due to user conflict, there is a fear that separate use trails or specific use exclusion will occur in the park. While there is a recognized need for separate trails for various uses *in a few locations*, the users/task force/ and management prefer to keep multi-use trails and not separate users.
- Social trails have become a problem in the park, particularly those created by mountain bikers in flood damaged areas this summer. Social trails further fragment the wildlife habitat in the park increasing user impact on the natural system.
- There is considerable trail damage that occurs during wet seasons. Trail closures during wet times may be appropriate.
- Trail design should be more user friendly. In particular, designers should provide trails with lower grades and use erosion mitigation structures designed to be as horse and bike friendly as possible. Non-structural methods should be used whenever possible.
- Trail location should be coordination between Lory State Park and Horsetooth Mountain Park . In particular, Lory may be closing trails that connect with Horsetooth Mountain Park based on a trail study that is in process.
- Trail users have a strong sense of ownership in the park and want to participate maintaining and improving the park. Avenues should be explored that will allow for volunteer participation in trail and park maintenance.
- The park is heavily used and there is a need for more trails and recreational space. The expansion of the park expansion is very important to address increase in recreational use and need for more trails.
- The current trail brochure is outdated and unclear. A new map is recommended delineating trail use, mileage, difficulty.
- Trail signage is missing or inaccurate. *due*
- Trespassing is occurring on private land *cue* to a lack of adequate park boundary signage.
- There are not enough rangers in the park. Ranger accessibility is low.
- Dog and horse excrement on the trails pose a health problem as well as a safety issue for mountain bikers. A system should be put in place for excrement removal or control.

*Push?* }

- Dogs off leash are a threat to wildlife and a nuisance for other users. (Note this is in violation of current park regulations)

### **3.4 Environmental education issues and concerns**

Issues identified regarding environmental education are as follows:

- Wildlife education is needed to mitigate user impact as well as protect users (i.e. lion and bear/user interaction)
- There is a desire for interpretive programs.
- Users would like to see more ranger availability for education purposes. Examples include classes, nature hike/tours, seminars, etc.
- Additional brochures are needed that provide educational material such as a bird list, plant list, etc.

## 4. MANAGEMENT PLAN

### 4.1 General Management Plan

To meet the purpose and objectives of the Horsetooth Management Plan, the plan is divided into three main components: 1) natural resource management; 2) outdoor recreation management; and 3) education/recreation opportunities. These three components, while addressed separately are interrelated and will impact and influence the other components.

#### 4.1.1 Natural resources management

Natural resources management addresses the health and dynamics of the plant and animal communities found in Horsetooth Mountain Park, including external and internal influences, and the preservation of natural geologic features including natural springs and scenic vistas. For purposes of this plan, natural resources management is grouped into five categories: 1) forest health and fire control, 2) grassland and shrubland health and management, 3) noxious weed management, 4) wildlife management, 5) management of rare threatened and endangered species, and 6) water management and historic salt licks.

*ok*  
**Forest health and fire management.** Nearly half of Horsetooth Mountain Park contains forest-, shrub-, and grasslands that are classified as a severe fire hazard. The bulk of the remaining park is classified as a moderate fire risk. This fire risk is due to a gradual fuel buildup in the park in the absence of a natural fire regime and, for the grasslands, the absence of grazing since 1994. In addition to significant fuel buildup, the forest lands in the park are also showing signs of disease such as mistletoe, western gall rust, and blister rust. The forest also contains several insect pests that weaken and kill trees including mountain pine beetle, Douglas fir beetle, and western spruce budworm. *ok*

*ok*  
In light of these existing conditions, the two most critical aspects of forest health that need immediate attention are: 1) insect/disease control, and 2) fire hazard mitigation. Addressing these needs may include various techniques such as forest thinning and prescribed burning, among others. A specific forest health and fire mitigation management plan is proposed to identify strategies and implementation steps for addressing the forest health needs. Prior to the development of a forest health and fire mitigation management plan, however, it is necessary to obtain forest baseline inventory.

*Est Completion Feb 27, 1998*

#### *Implementation steps:*

- Develop a forest baseline inventory plan in conjunction with the Colorado State Forest Service.
- Obtain inventory data through the use of park staff, volunteers, students, etc.

- Contract with the Colorado State Forest Service to develop a forest health and fire mitigation plan that coordinates with a similar plan that is currently being developed for Lory State Park.
- Work in conjunction with Lory State Park in the implementation of the forest health and fire mitigation plan in order to achieve economies of scale with contractors.
- Work with various contractors, volunteer groups and staff in implementing the management steps outlined in the forest health and fire mitigation plan.
- Develop appropriate fire breaks in 1998 as allowed by budget and recommended by the forest health and fire mitigation management plan.
- Monitor forest health and fire risk on an ongoing basis as outlined in the forest health and fire mitigation plan.

While the forest health and fire mitigation management plan will focus on insect/disease control and fire hazard mitigation as its primary objective, other forest management objectives may be explored in the future as overall forest health improves and fire risk is lowered. Additional objectives may include specific wildlife habitat enhancement.

**Grassland and shrubland health and management.** Equally important to maintaining forest health is the management of grassland and shrubland health. The natural processes that have established these communities, whether it is fire, grazing, or general soil and moisture conditions, are not clearly known. Over time the grasslands and shrublands have been heavily invaded by non-native grass species such as cheatgrass and other bromes that are extremely difficult to manage and control. More critical are noxious weed infestations of Canadian thistle and reported occurrences of leafy spurge.

In addition to the presence of non-native species in the grass- and shrublands, a significant fuel build-up has occurred due to the absence of grazing and fire. The majority of Horsetooth Mountain Park's grass- and shrublands are classified as a severe fire hazard.

To address these issues, a clearer understanding of grass- and shrubland natural community management needs is necessary. A grass- and shrubland management plan is proposed that will identify practical management tools for reducing the impact of invasive exotics and reducing the fuel load in the grass- and shrublands.. Management tools that this plan will explore include the potential use of grazing or controlled burns to reduce the fire hazard in this communities as well as maintain natural community health. This management plan will coordinate with the forest health and fire mitigation management plan as well as address issues related to rare species dependent upon the grass- and shrubland communities. (See **Rare, threatened and endangered species** section.)

*Implementation steps:*

- Contract with the Colorado Natural Heritage Program to develop a general grass- and shrubland community health management plan that coordinates with the forest health and fire mitigation management plan that will be developed by the Colorado State Forest Service.
- In conjunction with the management plan, examine the pros and cons of utilizing limited grazing in the park.
- Engage park staff and various volunteer groups such as Colorado State University classes and entomological organizations in implementing the management steps outlined in the grass- and shrubland management plan.
- Engage park staff and various volunteer groups to monitor grass- and shrubland health on an ongoing basis as outlined in the grass- and shrubland management plan.

**Noxious weed management.** There are several noxious weeds as defined by the Colorado Department of Agriculture present in the park. These include the Canada thistle (*Cirsium arvense*), the musk thistle (*Carduus nutans*), and leafy spurge (*Euphorbia esula*). These weeds may occur in forested lands as well as grass- and shrublands. A incomplete inventory of Canada thistle was conducted in late 1996. However, a comprehensive inventory for all of the noxious weeds should be conducted in order to develop a strategy for control, which will include reclamation. Special care should be taken to control only the noxious weeds with minimal impact surrounding native vegetation. For example, control efforts should recognize the existence of native species of thistles in the park which from a distance might appear to be Canada or Musk thistle. These native species are important for the rare butterfly species located in the park and should be protected.

*Implementation steps:*

- Finalize mapping of Canada thistle.
- Identify and map other noxious weed infestations as defined by the Colorado Department of Agriculture.
- Develop an Integrated Pest Management Plan for noxious weed control and restoration. This plan should coordinate with the grass- and shrubland management plan in order to insure no impact to rare species populations.
- Implement the Integrated Management Plan utilizing staff. Explore restoration and proactive control measures that may include volunteer effort.
- Monitor the success of the Integrated Pest Management Plan including an annual weed inventory.

**Wildlife management.** Wildlife in Horsetooth Mountain Park is protected from harassment or injury by park regulations that are enforced by park rangers. Active wildlife management, however, is not currently practiced. There may be a time in the future where active wildlife management may be desirable in order to meet the needs of a specific wildlife species. For example, if it is determined that a particular area of the park is an important deer fawning area,

trails may be seasonally closed. Another possibility would be to modify the forest management plan to enhance specific wildlife habitats as the need arises.

Due to the potential future need to actively manage the wildlife in Horsetooth Mountain Park, it is important to preserve as many management tool options as possible. Currently, hunting is prohibited in Horsetooth Mountain Park by covenant. In the event that it is necessary to cull a wildlife population in the park due to overpopulation, disease, or public safety, controlled hunting could be a critical tool in carrying out the management needs. It is recommended that avenues are explored that will enable controlled hunting with the recommendation of the Colorado Division of Wildlife for those instances where wildlife removal is important for the welfare of the wildlife population as a whole and for public safety.

There are several wildlife species that currently exist in the park that additional information would be useful to assist in future wildlife management decisions. Efforts to study and monitor these species should be encouraged to begin to build a scientific baseline of information. In addition, a mechanism for facilitating the reporting of sightings by the public should be fostered.

*Implementation steps:*

- Explore options for modifying the no hunting covenant to a covenant allowing hunting only as a tool for addressing specific wildlife management needs.
- Engage park rangers or volunteer groups such as wildlife students, Audubon Society, etc. to identify and monitor the locations of sensitive species (nesting raptors, etc.) and determine steps to be taken, if necessary, to prevent human disturbance.
- Engage park rangers and volunteer groups such as Colorado State University students, Audubon Society, Sierra Club, etc. to inventory and monitor existing wildlife populations.
- Establish system for park visitors to report wildlife sightings.
- Encourage research of existing wildlife populations including academic studies by Colorado State University.

**Rare, threatened and endangered species.** There are several rare and globally imperiled butterfly and plant species located in Horsetooth Mountain Park. The rare grassfern, (*Asplenium septentrionale*), is generally found on rock outcroppings in difficult to reach and generally undisturbed locations. Management of the grassfern populations found in Horsetooth Mountain Park predominantly would consist of tracking locations of the fern and periodically monitoring the populations to assure that the locations continue to be undisturbed.

Two significant butterfly populations are located in Horsetooth Mountain Park, the globally imperiled hop-feeding azure butterfly (*Celastrina* sp.1) and the state rare mottled duskywing butterfly (*Erynnis martialis*). The hop-feeding azure butterfly is only known to occur on the Colorado Front Range from Douglas County north to Larimer County. The population found in Horsetooth Mountain Park has been persistent since at least the 1980's and is deemed to be a

strong population. The Colorado Natural Heritage Program (CNHP) has delineated a conservation site (Horsetooth Park Conservation Site) within the Park that contains known populations of these butterflies, their habitat, and a buffer for the habitat. CNHP has recommended that the site be managed for the reduction of non-native or weedy native species such as bromes (*Bromus tectorum*, *B. japonicus*, *B. inermis*) and toadflax (*Linaria dalmatica*) since these species compete with the native host plants of the butterflies.

In addition to known populations of the grassfern, the hop-feeding azure butterfly, and the state rare mottled duskywing butterfly, several other rare plants and butterflies have been documented in the area but precise locations are not known. These include Schryver's elfin butterfly (*Callophrys mossii schryveri*), prairie goldenrod (*Solidago ptarmicoides* = *Unamia alba*), and the forktip three-awn grass (*Aristida basiramea*). Horsetooth Mountain Park contains habitat typical for these species and may contain some populations. Management, monitoring, and additional inventorying for rare or imperiled species is necessary to ensure the continued existence of these special natural resources.

*Implementation steps:*

- With assistance from the Colorado Natural Heritage program, work with butterfly experts in identifying the precise location of all known populations of rare and imperiled butterfly populations in the park.
- Contract with the Colorado Natural Heritage program to draft a detailed management plan for the Horsetooth Park Conservation Site that focuses on the preservation of the rare and imperiled butterflies while also considering the impact of habitat management on other species. This plan will also address the management of grass- and shrublands. (See grassland and shrubland management section).
- Engage park rangers and volunteers such as members of the rare plant society to monitor the known locations of rare plant populations to insure the continued health and viability of the populations.
- Engage park rangers or volunteers such as entomologists from (Colorado State University) to monitor populations of rare and imperiled butterflies to determine the effectiveness of habitat management efforts and to ensure the continued health and viability of the existing populations.
- Engage park rangers and volunteers such as members of the rare plant society, and/or entomologists to periodically inventory Horsetooth Mountain Park for additional populations of rare and imperiled plant and animal species.

**Water management and historic salt licks.** There are 5 springs in Horsetooth Mountain Park that have historically been used for watering cattle. While cattle grazing currently does not occur in Horsetooth Mountain Park, the springs should be maintained in top operable condition in the event that grazing is used in the future for fire fuel load management purposes or for general shrubland/grassland health. In addition, the springs provide watering opportunities for wildlife and equestrian users in the park.

In addition to the establishment of springs for past livestock grazing, several salt licks were used for moving livestock throughout the park. While no longer in use, the salt licks left a residual of salt in the soil. Wildlife has become attracted to these residual salt concentrations, creating puddles and indentations as they lick the soil for its salt content. These historic salt licks should be properly treated to minimize the lasting effect of the licks.

*Implementation steps:*

- Inspect all spring structures and conditions to insure that they are still in good operating condition.
- Monitor all spring structures once a year to insure continued good conditions.
- Properly treat historic salt lick areas by removing contaminated soil and replacing with new soil. Areas should then be revegetated with native, salt tolerant grasses.
- Work with the Colorado Division of Wildlife to determine if properly designed new salt licks are appropriate or desirable for wildlife in the park.

#### **4.1.2 Outdoor recreation management**

Recreation management generally refers to people management and the management of recreational facilities. For purposes of this plan, recreation management is grouped into four categories: 1) zones of recreation experience, 2) multiple use and user interaction, 3) trail maintenance and construction, and 4) parking and picnic facilities maintenance.

**Zones of recreation experience.** Currently the bulk of the recreational use of the Park is on the southern half of the park, particularly along the trails leading to Horsetooth Rock and Horsetooth Falls. This southern section of the park resembles an urban park due to the intensity of the use and the surrounding residential developments. The northern half of the Park, however, receives substantially less use. It is not unusual to hike, bike, or ride this section of the Park and encounter few, if any, other users. This section of the Park provides a sensation of a backwoods experience.

Given the desire to expand the park through the acquisition of the Soderberg homestead located along the southeastern border of the park, it is possible that a second entrance area with a visitor center may be developed. This second access point to the park may alter the existing user density distribution in the park, slightly changing the current recreational experience gradients.

It is the desire of the Larimer County Parks and Open Lands Department to maintain the diversity of recreational experience for Park users and to preserve the backwoods feel of the north side of the park. This approach complements the recreational use of Lory State Park where the more remote areas of that park are in their southern section, bordering the remote areas of Horsetooth Mountain Park in its northern section. This not only provides a unique recreational

experience within minutes of a major urban area, but also provides some quiet, relatively undisturbed areas for wildlife refuge. Therefore, the development of a second entrance at the Soderberg homestead should carefully consider the impact of proposed trail access on the zones of recreational experience currently existing in the park.

*Implementation steps:*

This  
might  
require  
a sign  
at  
the  
Minuteman  
Drive  
access  
road

- Create a map showing zones of recreation experience that also shows wildlife and plant sensitive areas.
- Post a sign at the Minuteman Drive access road indicating that it is a utility access road only and that public entrance to the park is located on County Road 38E. Additional explanation of the restriction as it relates to preserving park health is desirable.
- Monitor the use of the trails in the northern section of the park to determine if some trails can be closed due to low use or excess fragmenting of the park.
- Monitor the use of the trails as more information is gained regarding sensitive wildlife habitat to identify areas where trails should be closed for habitat purposes.

**Multiple use and user interaction.** Horsetooth Mountain Park is used by a large variety of recreationists including hikers, joggers, mountain bikers, horseback riders, and picnickers. Based upon a survey conducted in July 1997, 93% of the park users have never had a conflict with another user. Of those who did have a conflict, the interactions usually involved conflict between hikers and mountain bikers or between hikers and other hikers with dogs on or off leash. During the public workshop designed to explore park issues, conflicts between mountain bikers and horseback riders were mentioned. Nevertheless, the general preference of the Advisory Task Force and the public was to continue to have multiple use trails and not segregate the various users. Emphasis should be on education and user courtesy. Consequently, trails in Horsetooth Mountain Park will be open to all users with the exception of those trails with steps or other steep impediments that make use by mountain bikers or horseback rider inappropriate. Alternative trails for these users will be provided where possible.

Dogs and other pets are allowed in the Park. They must be on a leash and under control, however, at all times. This is to prevent the harassment of wildlife and to insure a safe experience for all users. Public concern has been expressed with regard to excessive dog excrement along the trails, in particular the first 1/4 mile to 1/2 mile of the trails that lead from the parking lot. Horse manure on the trails also poses a health and safety issue particularly for mountain bikers who may lose control of their bike when encountering fresh manure.

*Implementation steps:*

- Develop a multi-user volunteer ranger program that emphasizes user education and outreach.
- Promote trail etiquette through clearly marked information signage and brochures. Trail etiquette may be modeled after system demonstrated in trail video obtained from the Estes Valley Recreation and Parks District.
- Provide trash cans and a dog refuse cleanup procedure to address dog refuse problems along the first quarter-to-half mile of the Soderberg Trail.

Horse  
Droppings

- Explore and analyze potential solutions to horse manure on the trails for their effectiveness and practicality. If an appropriate solution is identified, work with volunteers and staff in its implementation.

**Trail maintenance and construction.** In a 1997 survey, a majority of park users (59%) rated the quality of the trails as excellent with 29% rating the trail quality as adequate. The survey was conducted during July and early August. On July 28, 1997, the Horsetooth Mountain Park sustained considerable damage from 500+ year flood including significant damage to trails. As a result of the flood, several trails are in the process of relocation or permanent closure. Inventory of the trail system after the flood revealed that water bar and sound trail construction enabled the majority of the trails to endure the flood with little to no damage. However, trails constructed parallel to and near Spring Creek did sustain significant damage highlighting the need to keep trails away from the Creek. In addition, the flood revealed the wisdom of minimizing creek crossings. Continued sound trail location and construction practices are essential to maintain the excellent trail rating of Horsetooth Mountain Park.

*Implementation steps:*

- Reconstruct and relocate trails that require repair from the July 28, 1997 flood as outlined in the 1997 report submitted to FEMA. Repair costs and timeline prepared for FEMA reimbursements indicate \$200,000 of damage requiring 18 months to repair.
- Close Culver Falls trail to protect riparian habitat.
- Close the northern equestrian spur of Horsetooth Rock Trail due to severe erosion problems and restore the area with native vegetation. Note that this trail historically was an old logging road.
- As Horsetooth Mountain Park is expanded, (see land acquisition section), identify appropriate trail locations, if any, on new park additions. Utilize both the Colorado Division of Wildlife and the Colorado Natural Heritage Program for assessing wildlife and rare and sensitive species impact.
- Construct new trails on park expansion areas if appropriate. New trail construction assistance from the Larimer County Youth Conservation Corps, Volunteers for Outdoor Colorado, and various other volunteer groups may be explored.
- Examine desirability of a trail connection from the Spring Creek area over the east ridge and, if desirable, construct accordingly.

#### **4.1.3 Education/recreation opportunities**

Currently, environmental education is limited to the posting of information on the bulletin board at the park entrance area. However, numerous opportunities exist to expand environmental education at the park including: 1) an interpretive brochure for the park, 2) an interpretive trail along Horsetooth Falls trail, 3) informative kiosks at the park entrance, and 4) volunteer and park

ranger walks/talks, 5) publication of plant, bird, or wildlife lists, and 6) interactive school classroom exploration/research projects in the park.

*Implementation steps:*

- Revise and publish interpretive brochure developed by former intern for the park as a whole.
- Engage volunteer or consultant to develop an interpretive trail program for Horsetooth Falls trail.
- Design environmental education kiosk for placement in the vicinity of the park entrance area.
- Develop volunteer naturalist program.
- Develop a series of environmental education walk/talks suitable for both park rangers and volunteer to conduct.
- Condense plant, bird, and wildlife lists to a useable format and publish for public distribution.
- Identify opportunities for school and university classroom interactions in the park. Projects may be strictly educational or include management and research needs for the park.
- Educate the public on the effects of noxious weeds on the environment by public distribution of interpretive material.
- Develop an education program focusing on the importance of using existing trails and the negative impacts of social trails.

## **4.2 Land Acquisitions**

Throughout the management plan process, both the Advisory Task Force and the public have expressed concern regarding the need for additional buffers to the park and for park expansion to address recreational needs. Suggestions have been made to expand the park to the east though the inclusion of the remainder of the original Soderberg Ranch which contains the historic homestead ranch house and provides an important buffer to the park from residential development. To the west, the inclusion of the land owned by Colorado State University as well as other properties have been suggested to buffer the park and Horsetooth Rock.

*Implementation steps:*

- Acquire the Soderberg homestead.
- Explore land acquisition possibilities on the west side of the park with appropriate landowners to determine the capability and economic feasibility of expanding the park.

### **4.3 Summary of Implementation Steps and Phasing**

A tabular summary of implementation steps and proposed timelines is provided below. These steps will be prioritized and implemented as budget and time allows.

Table 1. Summary of Implementation steps for the Horsetooth Mountain Park Management Plan.

Park Management Implementation Steps	1998	1999	2000 and beyond	Responsible program*
<b>Forest health and fire mitigation</b>				
Develop a forest baseline inventory plan	Winter			
Obtain forest baseline inventory data	Winter			
Develop a forest health and fire mitigation plan	Spring			
Coordinate with Lory State Park in the scheduling and contracting forest health and fire mitigation plan implementation	Spring			
Implement forest health and fire mitigation plan	Fall	Year-round	Annual	
Develop appropriate fire breaks	Spring/Summer			
Monitor forest health and fire risk		Fall-Winter	Annual	
<b>Grassland and shrubland health</b>				
Develop a grass- and shrubland management plan	Winter			
Examine pros and cons of utilizing limited grazing	1998			
Implement management steps	Summer	Summer		
Monitor grass- and shrubland health		Summer	Biannual	
<b>Noxious weed management</b>				
Finalize mapping of Canada thistle				
Identify and map other noxious weed infestations				
Develop Integrated Pest Management Plan for noxious weeds				
Implement the Integrated Pest Management Plan				
Monitor the success of the Integrated Pest Management Plan including annual weed inventory				
<b>Wildlife management</b>				
Modify the no hunting covenant	1998			
Identify and monitor the locations of sensitive species		Summer	Annual	
Inventory and monitor non-sensitive wildlife species				
Establish reporting system for wildlife sightings				
Encourage research and inventory of existing wildlife populations	Annual	Annual	Annual	
<b>Rare, threatened, and endangered species</b>				

Park Management Implementation Steps	1998	1999	2000 and beyond	Responsible program*
Identify the locations of known populations of rare and imperiled butterfly species in the park	Winter			
Develop a conservation site management plan in conjunction with grass- and shrubland health to protect rare butterflies				
Monitor known rare plant populations	Summer	Summer	Annual	
Monitor populations of rare and imperiled butterflies		Summer	Biannual	
Inventory Park for rare and imperiled plant and animal species		Summer		
<b>Water management and historic salt licks</b>				
Inspect all spring structures and conditions to insure that they are still in good operating condition				
Monitor spring structures annually				
Treat historic salt lick areas to restore the ground				
Consult with the CDOW to determine if wildlife salt licks should be provided				
<b>Zones of recreation experience</b>				
Create a map showing zones of recreation experience that also shows wildlife and plant sensitive areas				
Post sign at Minuteman Drive access road	Summer			
Monitor use of northern trails for intensity of usage		Summer	Biannual	
Monitor northern trails for sensitive wildlife habitat		Summer	Biannual	
<b>Multiple use and user interaction</b>				
Develop a multi-user volunteer ranger program				
Promote trail etiquette through signage				
Provide trash cans and dog refuse cleanup system	Spring			
Explore and analyze potential solutions to horse manure on the trails				
<b>Trail maintenance and construction</b>				
Repair trail flood damage	Year-round	Year-round		
Close Culver Falls trail and restore habitat	Summer			
Close equestrian spur of Horsetooth Rock trail	Summer			

Park Management Implementation Steps	1998	1999	2000 and beyond	Responsible program*
Identify new trail locations on park expansion land	?	?		
Construct new trails on park expansion land			?	
Examine desirability of a trail connection from the Spring Creek area over the east ridge				
<b>Education/recreation opportunities</b>				
Revise and publish interpretive brochure				
Develop an interpretive trail program				
Design an environmental education kiosk				
Develop volunteer naturalist program				
Develop environmental education walk/talks				
Publish plant, bird, and wildlife lists				
Develop classroom projects in the park				
Develop interpretive material on noxious weeds				
Develop education program focusing on the importance of using designated trails				
<b>Land acquisitions</b>				
Acquire Soderberg homestead	Winter 1998			
Explore land acquisition possibilities on the west side of Horsetooth Mountain	1998	1999		
* Note that while various programs may be responsible for a particular task, the implementation of the task may involve cross-program cooperation and participation as well as the use of volunteers. All volunteer activity will be developed and organized by the Volunteer Coordinator located in the Park Rangers and Volunteer Services Program.				