
Resource Management and Implementation Plan for Eagle's Nest Open Space



Photograph: Charlie Johnson

November 2002
Larimer County Parks and Open Lands Department

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1. INTRODUCTION

1.1 Purpose and Objectives of the Plan

Eagle's Nest Open Space is part of a greater vision for the Laramie Foothills identified in the 2001 Open Lands Master Plan to protect natural, visual, open space and agricultural values. Eagle's Nest Open Space was acquired in January 2001 with the specific intent to protect the native vegetation, rock outcrops, and wildlife habitat, while providing outdoor recreational opportunities.

The purpose of this document is to: 1) examine the management objectives for Eagle's Nest Open Space given the current ecological, social, economic, and political environments; 2) provide the formal program and policy guidelines that will direct the management and use of Eagle's Nest Open Space well into the future; and 3) develop specific implementation strategies for carrying out various components of the management plan and subsequent management efforts. The overall objectives of the plan are to:

- Protect, manage, and enhance natural, geologic, 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, geologic, cultural, and visual resources;
- Provide educational opportunities regarding the values of the surrounding natural, geologic, 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 Eagle's Nest Open Space was compiled predominantly from the publication "Among These Hills – A History of Livermore, Colorado" (1996), published by the Livermore Women's Club in honor of their Centennial. Additional information was compiled through interviews with Murry McMurry and Gale Wares.

The first people in the Livermore area were Paleo-Indians and later Indian tribes moving through on hunting trips. Folsom Points indicate that early human presence in the Livermore Area began 11,000 years ago (9,000 B.C.). The Utes and Arapahoe tribes came through the area. The first white people to come to the area were most likely hunters and trappers and later traders. The explorer, John Fremont, on his second expedition in 1843 came to the Livermore Area by way of

Eagle's Nest. Thinking he was exploring the main canyon of the Poudre River, he unknowingly followed the N. Fork to Livermore.

Eleven years before Eagle Cliff Ranch was homesteaded by Catherine L. Chaffee (1887), Samuel Sloan and Sam Stewart, after moving 200 head of cattle across Kansas and eastern Colorado to Livermore, spent the winter camping along the N. Fork of the Poudre River. In 1896, Mrs. Lucinda Peters invited her Livermore neighbors to a party for her sister-in-law from Denver, and this meeting prompted the formation of the Livermore Women's Club. This first meeting of the Livermore Women's Club held at the "Eagle Cliff Cottage," had over 30 women in attendance. As described by Nellie Ramer, "Mr. and Mrs. Peters lived on this same road, their log house nestling under Eagle Cliff and the North Fork running by its door. It was a most inviting home and very dear to the members..." In 1998, the Livermore Women's Club, still active after 100 years, placed a commemorative plaque at the remains of the site of the Peters' House.

Among many future owners of the Eagle Cliff property were Frank K. Atkins, John and George Nightingale, James Rosebrock, Ruth Casey, Paul Nauta, Duane McMurry, Thomas and Betsy Grainger and Robert Avis.

William and Ellen Poland, along with seven of their eight children, homesteaded just south of Eagle's Nest Open Space up "Casey's Draw." As described by Nellie Ramer,

"The home of Mr. and Mrs. William Poland is a lovely, large log house on the North Fork of the Cache La Poudre, three miles from Livermore. The road winds through a pretty valley and crosses the river three times. High mountains almost surround the residence and they are dense with pine trees. Wild flowers are luxurious in this valley – the pasque flower or anemone is lovely."

Although the house no longer exists, part of one of the outbuildings with initials and dates (possibly corresponding to the dates that the logs were reinked) carved on the inside of the log structure, is still standing.

Ethel Poland, one of the Poland's eight children, married Gordon P. Johnson and they and their two children (Polly and Bud) lived with her family on the ranch. After William and Ellen passed away, the Johnsons continued to live at the homestead until selling it to C.J. Bollin (Livermore's first postmaster) in 1948.

The McMurry's holdings began with 40 acres and grew to thousands over about a half century. Burton Allen McMurry acquired seven farms including the River Place (now McMurry Park in Ft. Collins) and Bonner Peak (now a 35-acre residential development). Later Burton's sons Ralph and Duane added the Eagle Cliff Ranch and the Poland/Johnson Homestead as well as several other lands to the McMurry Ranch.

Tom Grainger bought the approximately 1300-acre Eagle's Nest Ranch from Duane McMurry and later sold the property in the early 1990's to Robert Avis. It was Tom Grainger who built the bridge across the North Fork of the Poudre River. In 2001, Larimer County Open Lands Program purchased the lower 755 acres of Eagle's Nest Ranch from Robert Avis to protect the

natural and cultural values of the property as well as to provide outdoor recreational opportunities to the citizens of Larimer County.

1.3 Scope and Organization of the Plan

The resource management plan for Eagle’s Nest Open Space contains three main 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 management of the open space; and 3) a management plan addressing the existing conditions, opportunities, constraints, and planning issues and outlining implementation steps and phasing.

1.4 Public and Agency Involvement

Extensive public and agency involvement has been utilized to ensure full representation of those parties interested in Eagle’s Nest Open Space.

Two public meetings were conducted to receive public input. At the first meeting, May 2002, the management plan process was introduced, existing conditions of the property were presented, and the public’s visions, issues and concerns regarding the Eagle’s Nest Open Space were identified. The second meeting, July 2002, was an open house where copies of the draft management plan were available for public review. In addition, the draft and final draft plans were both available on the Larimer County Parks and Open Lands Department website for month-long review periods.

In addition to public workshops, the draft management plan will be reviewed by the Open Lands Advisory Board, Parks and Open Lands Staff and a technical advisory group (listed below) comprised of various specialists to ensure resource expertise and diverse user group input.

Name	Affiliation	Expertise
Meegan Flenniken	Larimer County Parks and Open Lands	Open Lands Resource Specialist/Project Manager
Joe Andrews	Larimer County Horseman’s Association	Horseback Riding Enthusiast
Patricia Brennan	Larimer County Parks and Open Lands	Volunteers
Sue Burke	Colorado Mountain Club	Hiking Enthusiast
K-Lynn Cameron	Larimer County Parks and Open Lands	Open Lands Manager/Outdoor Recreation and Planning
Mark Caughlan	Larimer County Parks and Open Lands	Rangering
Rob Cotter	Trout Unlimited	Fishing Enthusiast
Jerry Craig	Colorado Division of Wildlife	Raptor Specialist
Shanna Cullen	Babe’s on Bikes (Team BOB)	Biking Enthusiast
Denise Culver	Colorado Natural Heritage Program	Ecology/Plant Communities
Frank Ethridge	Colorado State University	Geologist
John Fusaro	Natural Resources Conservation Service	Grazing Management
Charlie Gindler	Larimer County Parks and Open Lands	Regional Trails/Agriculture
Maxine Guill	Larimer County Parks and Open Lands	Weed Specialist

Ken Keymeier	Colorado Division of Wildlife	Fisheries
Heather Knight	The Nature Conservancy/Livermore Women's Club	TNC/LWC
Rodney Ley	CSU Outdoor Adventure Program	Rock Climbing Enthusiast
Ann Montoya	Larimer County Parks and Open Lands	Environmental Education
Paul Opler	National Biological Service/C.S.U.	Entomology/Ecology
Steve Ryder	Legacy Land Trust	Deed Restriction Holder
Howard Spear	Colorado Division of Wildlife	Wildlife
Ron Strobel	USFS	Forest Service
Wayne Sundberg		Historian
Joel Wykoff	Larimer County Parks and Open Lands	Trails and Weeds

2. EXISTING CONDITIONS

2.1 Overview

Eagle's Nest Open Space, comprising 755 acres, is located in the Laramie Foothills, southwest of Livermore off the Red Feather Lakes Road (Figure 1). Eagle's Nest Open Space was purchased by Larimer County for its natural, visual, geologic, agricultural and outdoor recreational values.

2.2 Natural Resources

a. Climate

Eagle's Nest Open Space has a highly variable, semi-arid climate. The climate data used to characterize Eagle's Nest Open Space has been recorded in Ft. Collins, however the climate data is generally reflective of conditions at Eagle's Nest Open Space (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

Eagle's Nest Open Space includes spectacular rock outcrops, rugged terrain and rolling foothill topography. The elevation varies from approximately 5,640-6,350 feet, the highest point on the property being Eagle's Nest Rock at 6,353 feet. Eagle's Nest Rock is comprised of Precambrian-age Silver Plume granite, a medium-grained granite that is found interspersed in rock outcrops throughout the property. The majority of the underlying geology and exposed rock outcrops on the site is the Precambrian-age Sherman Granite, a coarse-grained pink granite. The predominant geology in the northern portion of the property is the Fountain Formation, composed mainly of medium to coarse-grained arkosic sandstone, conglomerate, with minor siltstones and shales and thin limestone. The North Fork of the Poudre River is comprised of quaternary alluvium or unconsolidated deposits of silt, sand, and gravel including colluvium along sides of valleys and at heads of tributary drainages. The North Fork Fault bisects Eagle's Nest Open Space north to south and along the river (Braddock 1988).

Based on the *Soil Survey of Larimer County Area, Colorado* by the USDA-SCS (1980), the two major soil associations are:

Wetmore-Boyle-Rock: Shallow, nearly level to steep, well drained to excessively drained gravelly sandy loams that formed in materials weathered from granite, and rock outcrop; on mountainsides.

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.

c. Hydrology

The steep slopes and folding land forms within Eagle's Nest Open Space act to drain surface runoff towards many small drainages and ultimately the North Fork of the Cache la Poudre River. Given the semi-arid climate, these drainages generally carry intermittent flows most common during the spring snowmelt period and after heavy rain events. There are no adjudicated springs, however, there are at least four springs on the property which feed drainages. A shallow pond in the northwest corner of the property fills for most of the spring and into the summer providing water and habitat for wildlife (Figure 2).

d. Vegetation

Vegetation types present at Eagle's Nest Open Space include foothills grasslands complex, mountain mahogany (*Cercocarpus montanus*) shrublands, ponderosa pine (*Pinus ponderosa*) woodlands and riparian areas. Vegetation types are shown on Figure 2. See Appendix A, Table 2 for a comprehensive list of plant species found at Eagle's Nest Open Space. The property has a biodiversity rank by the Colorado Natural Heritage Program (CNHP) of B3, or high biodiversity significance, because the site supports a globally rare foothills riparian woodland plant community and riparian shrubland community.

Foothills Grassland Complex

The foothills grassland complex comprises approximately 50% of the property. Primarily the grasslands are found in the flatter portions of the property and in patches of the rolling foothills. The grassland complex consists of a variety of grass and forb species including needle-and-thread (*Stipa comata*), big bluestem (*Andropogon gerardii*), blue grama (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), green needlegrass (*Stipa viridula*), pussytoes (*Antennaria rosea*), spike fescue (*Festuca* sp.), oatgrass (*Danthonia spicata*), prickly-pear cactus (*Opuntia macrorhiza*), prickly poppy (*Argemone polyanthemos*), bee plant (*Cleome serrulata*), blazing star (*Liatrus punctata*), buckwheat (*Eriogonum effusum*), timothy (*Phleum pratense*), great basin wildrye (*Elymus* sp.), Kentucky bluegrass (*Poa pratensis*), fringed sage (*Artemisia frigida*), scurfpea (*Psoralea tenuiflora*), western wheatgrass (*Agropyron smithii*), and coneflower (*Ratibida columnifera*).

Mountain Mahogany Shrubland

Mountain mahogany (*Cercocarpus montanus*) shrublands occur in portions of Eagle's Nest Open Space with moderately steep slopes and shallow soils. While this shrubland community is dominated by mountain mahogany it also includes other shrub species such as skunkbrush (*Rhus trilobata*), currant (*Ribes* sp.), and rabbitbrush (*Crysothamnus nauseosus*). The herbaceous understory consists of various grass and forb species including green needlegrass, western wheatgrass, needle-and-thread, Indian ricegrass (*Oryzopsis hymenoides*), broom snakeweed (*Gutierrezia sarothrae*), fringed sage, blue grama, yucca (*Yucca glauca*), prickly-pear cactus, and side-oats grama (*Bouteloua curtipendula*), among others. In many portions of the shrubland areas, cheatgrass (*Bromus tectorum*) has become the dominant grass species.

Ponderosa Pine Woodlands

The rock outcrops on the property and west facing hillslopes are predominantly vegetated with ponderosa pine, Rocky Mountain juniper (*Juniperus scopulorum*) and Douglas fir (*Pseudotsuga menziesii*) with an understory of mountain mahogany, waxflower (*Jamesia americana*), bluebunch wheatgrass (*Pseudoroegneria spicata*), among other grass and forb species. While not yet identified specifically on Eagle's Nest Open Space, the rock outcrops provide potential habitat for the globally rare Larimer aletes (*Aletes humilis*) and the state rare Rocky Mountain cinquefoil (*Potentilla rupincola*).

Riparian Areas

Approximately one mile of the N. Fork of the Poudre River runs through Eagle's Nest Open Space and comprises the predominant riparian area on the property. In addition, there are many smaller riparian drainages throughout the property. Dominant riparian tree and shrub species include wild plum (*Prunus americana*), sandbar willow (*Salix exigua*), plains cottonwood (*Populus deltoides*), chokecherry (*Prunus virginiana*), peachleaf willow (*Salix amygdaloides*), bluestem willow (*Salix irrorata*), skunkbrush (*Rhus trilobata*), snowberry (*Symphoricarpos oreophilus*), cottonwood (*Populus acuminata*), and narrowleaf cottonwood (*Populus angustifolia*). Dominant understory in the riparian areas include Kentucky bluegrass, needle-and-thread, western wheatgrass, lupine (*Lupinus argenteus*), sticky geranium (*Geranium caespitosum*), field horsetail (*Equisetum arvense*), poison ivy (*Toxicodendron rydbergii*), Brickellia (*Brickellia* sp.), native thistle (*Cirsium canescens*), and field mint (*Mentha arvensis*).

Rare or Endangered Species

Eagle's Nest Open Space has been ranked by the CNHP as "B3," or a site with highly significant biodiversity. Adjacent to Eagle's Nest Open Space, the Laramie Foothills Site has been ranked by CNHP as "B2" or a very highly significant biodiversity site (Kettler, 1996). Specifically at Eagle's Nest Open Space, two elemental occurrences are present: narrowleaf cottonwood/bluestem willow (*Populus angustifolia/Salix irrorata*) and skunkbush (*Rhus trilobata*). Of particular interest, in many of the smaller drainages on the property, skunkbush is the predominant shrub species, comprising over 95% of the shrub cover. Both of these occurrences are considered to be rare globally and statewide, indicating there are less than 20 documented global or statewide occurrences. While not yet identified specifically on Eagle's Nest Open Space, the rock outcrops provide potential habitat for the globally rare Larimer aletes (*Aletes humilis*) and the state rare Rocky Mountain cinquefoil (*Potentilla rupincola*).

Exotic Plants and Noxious Weeds. Some exotic plants have become established as a result of historic land uses including grazing and introductions from surrounding areas. Known exotics at Eagle's Nest Open Space include cheatgrass (*Bromus tectorum*), two bromes (*Bromus japonicus* and *Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), field bindweed (*Convolvulus arvensis*), mullein (*Verbascum thapsus*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), leafy spurge (*Euphorbia esula*), dalmation toadflax (*Linaria genistifolia*), hoary cress (*Cardaria draba*), and houndstongue (*Cynoglossum officinale*). While all of these exotics are actively monitored and controlled by the Open Lands Program, Canada thistle, musk thistle, leafy spurge, and dalmation toadflax are regulated by Larimer County.

e. Wildlife

Eagle's Nest Open Space supports a variety of wildlife including mountain lion, coyote, mule deer, white-tail deer, black bear, occasional elk, rabbits, skunks, rattlesnakes, toads, lizards, etc. For a list of common foothills mammals see Appendix A, Table 1. The area is included in a large regional mule deer migration and winter concentration area that extends from Wyoming down into Boulder County.

Eagle's Nest Open Space protects high rock outcrops that are nest sites and winter foraging locations for hunting and perching raptors including prairie falcons, ferruginous hawks, red-tailed hawks, great-horned owls, bald eagles and golden eagles. Three golden eagle nest sites exist on the open space/conservation easement lands, although only one is ever occupied each year. Golden eagles have been nesting at Eagle's Nest Open Space for over a century. The general nesting period for golden eagles begins February 1st through July 15th when the young fledge. Several small drainages and the North Fork of the Poudre River provide rich riparian habitat for a variety of birds. Some of the bird species found at Eagle's Nest Open Space include canyon wren, cliff swallow, rufous-sided towhee, meadowlark, pigeon, lesser goldfinch, chipping sparrow, oriole, yellow warbler, killdeer, kingfisher, mountain chickadee and other migrant species common to the foothills.

The North Fork of the Poudre River supports several native fish including the Iowa and Johnny darter, white sucker, chubs and long-nosed dace. These native species are tolerant of the fluctuating seasonal flows in the N. Fork.

Another important wildlife asset to Eagle's Nest Open Space is its geographic location adjacent to Arapaho-Roosevelt National Forest. The portion of the forest that abuts the property is considered a sensitive wildlife area, particularly as large game wintering range (Revision of the Land & Resource Management Plan for the Arapaho-Roosevelt National Forest and Pawnee National Grasslands, 1997). The connectivity of Eagle's Nest Open Space to USFS lands ensures large, contiguous lands for wildlife, especially for those species that require large territories.

Rare or Endangered Wildlife

According to the Colorado Natural Heritage Program, the North Fork of the Cache la Poudre River and its perennial tributaries support rare fish, such as the Iowa darter (*Etheostoma exile*) (CNHP ranking - G5 S3). The riparian areas have the potential to support imperiled (S1) species such as the Preble's Meadow Jumping Mouse (*Zapus hudsonius*) and the state critically imperiled (S1) smokey-eyed brown butterfly (*Satyroides eurydice fumosa*). See Appendix A: Butterfly List for a working butterfly list of the area (Ellis, 2001).

2.3 Visual Resources

Eagle's Nest Rock is a signature geologic landmark in the Livermore area. Specifically, the rock outcrop and property are highly visible from the Livermore Community, Hwy 287 and the Red Feather Lakes Road. The rolling foothill prairies of Eagle's Nest Open Space are characteristic of the openness and wide expanses for which the Laramie Foothills area is known. Geologic landmarks in the area that are visible from Eagle's Nest include Grey Rock and Steamboat Rock.

2.4 Cultural Resources

The Laramie Foothills and Eagle's Nest Open Space are also rich in human culture (See History section 1.2). Native Americans used the region for at least 9,000 years. By the late 1800's, ranching was the primary land use. The Laramie Foothills have been traversed by the Cherokee Trail and Overland Trail, and now by U.S. Highway 287. The property has supported long-time ranching traditions and the historic working landscape of the Laramie Foothills. Homesteaded by Catherine L. Chaffee (1887) as Eagle Cliff Ranch, it was the site of the first meeting of the Livermore Women's Club in August 1896. The Livermore Woman's Club erected a commemorative flagstone at the base of Eagle's Nest Rock in October 1996 to document the 100-year anniversary of this event. A few of the many owners of Eagle's Nest Open Space were Frank K. Atkins, John and George Nightingale, James Rosebuck, Ruth Casey, Paul Nauta, Duane McMurry, Thomas and Betsy Grainger and Robert Avis. The property sold from Thomas Grainger to Robert Avis in 1995. Gail Wares has been the ranch operator for 10 years.

2.5 Socioeconomic Resources

a. Eagle's Nest Open Space Land Status

The 755-acre Eagle's Nest Ranch was acquired by the Larimer County Open Lands Program for \$2,000,000 in January of 2001. The landowner donated a 72-acre conservation easement, valued at \$52,500. The landowner also granted a right-of-first-refusal on the upper remaining 550-acres of the original Eagle's Nest Ranch. In late 2001, a Great Outdoors Colorado Open Space Grant was awarded for \$200,000 and \$89,000 was awarded towards the purchase from the Division of Wildlife Quadrant Funds.

Encumbrances

There are no mortgages, agricultural leases, or liens on the property. However, there are several grants of utility easements in Section 34 of Eagle's Nest Open Space (the northern most section of the property, near County Road 74E) which are not specifically located and are likely not on the property.

There are reciprocal access easements with an adjacent rancher (see Exceptions 38, 39, and 40), which serve to "formalize" historic access rights across Eagle's Nest Open Space to private lands to the south. These are limited to the Grantee's immediate family, but would likely be difficult to terminate because they probably have some prescriptive legitimacy.

The County has entered into a "99-year" lease agreement with the Livermore Volunteer Fire Department on 1.2 acres of the most northern portion of the property for an existing fire station, adjacent to CR 74E.

Trails

Currently there are no established or designated trails.

Roadways and parking

Eagle's Nest Open Space has motorized access via an unpaved access road from County Road 74E. This road runs along the east property boundary and then through the center of the open space eventually ending at the southernmost end. This access road is part of a joint access road easement agreement with neighbors who also use this as their main access to CR 74E. A small bridge along this road spans the N. Fork of the Cache la Poudre River. Two small segments of dirt road spur off of the main access road through the open space. One, north of the river leads westward to the McMurry Ranch and is a historic access road still used by the rancher to access additional private lands south of Eagle's Nest Open Space. The second road spur is south of the river and heading west and remains available to Robert Avis and his family only into USFS lands as long as they still own the upper 550 acres.

Outbuildings

Three small sheds and corrals are located in the central portion of the property and corrals are located on the northwest portion of the property.

Fences

Existing fencelines include barbed wire fences along the north, west and south boundaries of the property. There are no fences along the easternmost border that runs along steep cliffs and slopes. There are indications that some fencelines do not coincide with property lines. A survey is in process and will provide more information on this issue. There are no indications of any disputes related to fence encroachments.

Water and Mineral Rights

Water rights. There are no water rights associated with Eagle's Nest Open Space.

Mineral rights. The title policy indicates most of the mineral rights remain with the surface ownership. The exceptions are:

- 1% reservation of oil, gas and mineral by Nora Staley on 82 acres in Section 34.
- 1% reservation of oil, gas, and minerals by Stewart Case on the same 82 acres in Section 34.
- Reservation by Union Pacific Rail Road of all oil, gas, and minerals on 350 acres in Section 3.

Environmental Assessment

Based upon a Phase I Environmental Assessment of the property, there are no environmental hazards associated with Eagle's Nest Open Space (Terracon, 2001). Historically, this property has been used as rangeland for cattle or horses and shows no signs of dumping or other hazardous waste activity.

Agriculture

The previous landowners predominantly used the lands on Eagle's Nest Open Space for grazing cattle and horses. The Natural Resource Conservation Service (NRCS) conducted a site visit to Eagle's Nest Open Space in April 2001 to determine the range condition and capacity. The range assessment/grazing plan is attached to this plan in Appendix B.

b. Adjacent Land Use

Surrounding lands are a combination of private property, mainly consisting of large ranches and low-density rural residential and National Forest lands (Figure 1).

Eagle's Nest Open Space is predominantly bordered on the south and southwest by Roosevelt National Forest, providing continuity of these protected lands. To the north and west, as well as along a portion of the southern property line, the property is bordered by a large 3,000-acre privately owned cattle ranch. To the east, the property is bordered by smaller privately held parcels, that are already substantially developed, and the 35-acre Bonner Peak residential area.

Eagle's Nest Open Space is less than five miles from the Phantom Canyon Preserve and adjacent conservation easement lands protected by The Nature Conservancy. In addition, the Colorado Division of Wildlife owns and manages 28,000 acres for limited outdoor recreation on four State Wildlife Areas within 6 miles of Eagle's Nest. Other nearby state lands include the Owl Canyon Pinyon Grove, which is a dedicated Natural Area with no public access, Colorado State University's Maxwell Ranch, and several State Land Board properties. The Legacy Land Trust, partnering with the Larimer County Open Lands Program, has also recently protected 494 acres in the Buckeye area via conservation easement.

Eagle's Nest Conservation Easement and First Right of Refusal

A 72-acre conservation easement was donated to Larimer County in December 2000 by Robert Avis, east of Eagle's Nest Open Space, at the top of the steep rock outcrops just south of Eagle's Nest Rock. The conservation easement is both on a portion of Eagle's Nest Open Space as well as on adjacent property owned by Robert Avis. This conservation easement buffers Eagle's Nest Open Space from potential development above the valley and will ensure that this area will remain in open space and agricultural uses rather than converted to 35-acre residential homes. A right-

of-first-refusal, on the remaining 550-acres of the original Eagle's Nest Ranch, was donated by Robert Avis at the time of the Eagle's Nest Open Space land purchase. The right of first refusal will be in place for 15 years and applies only to parcels of 160 acres or more.

c. Access, Circulation and Traffic.

County Road 74E (Red Feather Lakes Road) provides access to Eagle's Nest Open Space. The unpaved access road can be used for maintenance and management purposes by Larimer County and for public access.

d. Public Facilities, Utilities and Services

Currently, in its undeveloped state, there are no public facilities or utilities available. Fire protection and public safety services are available however.

Fire protection

Fire protection is ultimately the responsibility of the Larimer County Sheriff's Department. Eagle's Nest Open Space, however, is also served by the Livermore Volunteer Fire Department, and the fire station leases land owned by Larimer County along CR 74E at the north end of Eagle's Nest Open Space.

Public safety

The Larimer County Sheriff's Department is responsible for law enforcement at Eagle's Nest Open Space. However, Larimer County Parks and Open Lands staff are responsible for the education and enforcement of parks and open space regulations and assist the Sheriff's Department and other law enforcement agencies in responding to emergencies and preventing criminal activity. The Parks and Open Lands 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.

e. Recreational Use and Demand

With increasing population along the Front Range, the demand for close, convenient recreational opportunities is also increasing. The current population of Larimer County is approximately 250,000 (2000 census data), with 118,720 (approximately 48%) living in Fort Collins. With existing foothills, regional, and local parks and open spaces experiencing heavy use, there is a need for additional trails and open spaces. Eagle's Nest Open Space is a key component of protecting an open space and trail corridor in the Laramie Foothills.

Currently there are diverse but limited recreation opportunities in the Laramie Foothills area. The Nature Conservancy provides limited guided hikes at the Phantom Canyon Preserve. There is no public access to any of the conservation easements held by The Nature Conservancy. The Division of Wildlife allows hiking, biking, camping, hunting, fishing, and horseback riding at Lower, Middle and Upper Cherokee Park as well as at Lone Pine Wildlife Area – providing a

combined total of 28,000 acres for outdoor recreation. However, these DOW areas are only open to the non-hunting public from June 14th – August 1st, allowing only 1 ½ months of recreation per year.

f. Operations Budget and Funding

Eagle's Nest Open Space operations and capital improvement projects will be funded through Help Preserve Open Space sales tax dollars. Based on a long-term management cost study conducted in 2000 by the Larimer County Open Lands Program, annual management costs for this area are projected to be \$26,950 (\$35/acre) prior to development of a trailhead and trail. Once a trail and trailhead are developed and opened to the public, annual management costs are projected to be \$100,100 (\$130/acre). Management dollars will cover the cost of staff, regulation enforcement, weed management, administration, fence repair, trash removal, education, trail maintenance, and vegetation restoration as needed. With development of a trail and trailhead, a user fee will be assessed for use of the Eagle's Nest Open Space to help offset maintenance and management costs.

3. OPPORTUNITIES, CONSTRAINTS, AND PLANNING ISSUES

3.1 Overview

During the management plan development process, input was received from the Public, a voluntary and informal Technical Advisory Group, the Open Lands Advisory Board and staff concerning opportunities, constraints, and planning issues in regards to the current existing conditions and management of Eagle's Nest Open Space **[In Process]**. These issues may be divided into three key components: 1) natural resources, 2) outdoor recreation, and 3) environmental education.

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:

- Protecting Eagle's Nest Open Space from development pressure, which will preserve the integrity of this important landscape.
- Maintaining and enhancing the natural vegetation communities.
- Enhancing wildlife habitat, which will enable the continued use of the area by wildlife such as raptors, mountain lion, coyote, deer, fox, etc.

Constraints and planning issues associated with the natural resources of the property include the following:

- Open space users may disturb wildlife, in particular mule deer and nesting raptors.
- Rattlesnake habitat may be disturbed and conversely rattlesnake/visitor interactions may be a safety concern.
- Rocks may be damaged or eroded by rock climbing.
- Introduction of additional people in the area may impact the nesting success of the golden eagles.
- Use of the riparian area by cattle will increase sediment loads and may impact recreational enjoyment.
- Rock climbing may disturb raptors and other bird species nesting and/or perching on the rock outcrops.
- Visitors may have the effect of introducing additional exotic weed species.
- Off-trail use may cause soil erosion.
- Additional fencing in the area may prove detrimental to raptors and other wildlife utilizing the area (i.e. mule deer adults and young to cross).
- Dogs may disturb wildlife.

- Imperiled butterfly populations might be impacted by loss of larval host plants and/or nectar sources.
- Chronic Wasting Disease, prevalent in the Laramie Foothills Area, is a concern for the health of deer and elk populations.
- Hunting on such a small property may impact the population of the small number of deer present.
- Hunting may be an important tool to help control disease and numbers of elk and deer on the property

3.3 Outdoor Recreation Opportunities, Constraints, and Planning Issues

- *Provide, promote and enhance safe, enjoyable outdoor recreation opportunities while minimizing detrimental impacts upon natural, cultural, and visual resources.*

Outdoor recreation opportunities include:

- Constructing trails to provide outdoor recreation, environmental education, and wildlife viewing opportunities.
- Providing additional recreational opportunities near communities in Larimer County to meet an increasing public demand for such amenities.
- Providing the opportunity for visitors to see a unique landscape and experience the foothills/prairie ecotone in the Laramie Foothills.

Constraints and planning issues regarding outdoor recreation include the following:

- Multiple use of the trail may result in user conflicts.
- A trail design addressing user needs and interests may conflict with a trail design protecting sensitive wildlife.
- Social trails, users traveling off-trail and multiple access trails could be destructive to the natural resource values and fragment this relatively small area.
- Use of the area by large groups (e.g., commercial horseback riding trips, large group events, commercial tours, etc.) may overwhelm the capacity of the area.
- People using “nature’s restroom” may damage the natural environment and create a public health issue.
- If the trailhead is not appropriately located, then it may be visible from the Livermore Area and/or trails on the open space.
- Dogs may impact other users’ experiences.
- Mountain bikes don’t fit with Laramie Foothills rural setting, there should be a western heritage community focus at Eagle’s Nest Open Space.
- Animal waste can be a health issue or a menace if left on the trail.
- Trespassing may occur onto adjacent private property.
- People smoking at the open space may increase danger of a fire.
- Too many people may impact the enjoyment of the open space by all.
- Over-fishing or take-fishing may deplete the fisheries in the N. Fork.
- Artificial lighting at the parking/trailhead area may be a visual eyesore.

- Interior fences and over-signage may be a hazard or a visual eyesore.
- Charging a user fee may act to help limit visitor numbers and overcrowding at the open space.
- Noise and voices echoing off the rock may disturb adjacent landowners.
- Use of the trail after dark may be a safety and noise issue to adjacent landowners.
- Hunting or shooting on the site may disturb sensitive wildlife and be a safety issue for adjacent landowners and the public.

3.4 Environmental Education Opportunities, Constraints and Planning Issues

- *Provide and enhance educational opportunities regarding the area's natural and cultural history and visual resources and the importance of responsible land use and stewardship.*

Environmental education opportunities include:

- Developing natural resource based educational programs.
- Developing a historic map and cultural educational programs.
- Providing information regarding raptor and wildlife habitat sensitivities in order to minimize negative user/wildlife interactions.
- Creating and implementing a volunteer ranger program.
- Engaging volunteer assistance with trail building, weed management and educational programs.

Constraints and planning issues regarding environmental education are:

- Over-signage of the trailhead and trail may reduce the natural character of the site and create eyesores.
- Highlighting sensitive natural and/or cultural resources may result in their destruction or additional impacts.
- Large groups may overwhelm the capacity of the open space.

4. MANAGEMENT PLAN

4.1 Overview

To meet the purpose and objectives of the Eagle's Nest Open Space Management Plan and to address the opportunities, constraints and planning issues brought forth by the public and staff, the plan is divided into four main components: 1) natural resource management; 2) outdoor recreation management; 3) education opportunities; and 4) cultural resource management. These four components, while addressed separately, are interrelated and will likely impact and influence each other. In addition, the plan briefly addresses the potential for future land acquisition adjacent to Eagle's Nest Open Space. Finally, a summary of implementation steps and recommended timing is presented, followed by a set of regulations for Eagle's Nest Open Space.

Overriding Management Focus

The focus of management activities at Eagle's Nest Open Space will be protecting, managing, and enhancing natural, geologic, cultural, and visual resources. In particular, the focus of management at Eagle's Nest Open Space will be to regularly monitor wildlife and vegetation to ensure that visitors and other activities on the open space are not having an adverse impact. Regular on-going monitoring at Eagle's Nest will occur for wildlife (in particular the golden eagle and other raptor nesting and perching sites and other rare wildlife such as the Preble's Meadow Jumping Mouse and Iowa darter), rare plants and plant communities, and riparian area vegetation. If it is determined that in the process of providing safe and enjoyable recreation opportunities, the resource values at Eagle's Nest are adversely impacted, the recreational activities will be evaluated to assess means to minimize the impact. Specifically, seasonal trail closures, timing of activities, elimination of specific activities and so forth would be examined to reduce or minimize impacts. The protection of resource values will take precedence over recreational opportunities.

The continuation of livestock grazing at Eagle's Nest Open Space is important both for vegetation enhancement and promotion of sustainable working landscapes in the Laramie Foothills area. While vegetation management and enhancement is a priority for grazing management, the economic sustainability of grazing is an equally important goal at Eagle's Nest Open Space. Livestock grazing practices will be continually monitored to ensure that grazing is carried out in a sustainable manner and in concert with the approved grazing plan. If it is determined that in the process of providing safe and enjoyable recreation opportunities, conflicts arise between recreationists and livestock management practices, the recreational activities will be evaluated to assess means to minimize the impact on grazing activities. As conflicts or issues may arise, a balance will be sought between livestock grazing and recreation to minimize impacts to both and resolve the issue.

Vision.

The 2001 Open Lands Master Plan identifies the Laramie Foothills as a priority for open space protection for its natural, visual, open space and agricultural values. Based on this Master Plan which was developed with extensive citizen planning efforts, the Board of County Commissioners, the Parks and Open Lands Department and the Open Lands Advisory Board agree that Eagle's Nest Open Space is a property that fits this goal.

The Larimer County Parks and Open Lands vision for Eagle's Nest Open Space is to protect the native vegetation, natural rock outcrops, and native wildlife, while providing outdoor recreational opportunities. The proposed trailhead and trail design would focus on minimizing impacts to sensitive wildlife and rare plant communities while enabling visitors to enjoy this magnificent area. Recreation opportunities would include hiking, running, horseback riding and wildlife viewing on or from a natural surface trail. Other recreational activities would include catch and release fly fishing and potentially limited hunting. To manage the grassland and shrubland ecosystem and maintain a working landscape, Eagle's Nest Open Space will be grazed in accordance with a grazing management plan developed by the Natural Resources Conservation Service.

Visitors and the local community can enjoy the protected view of the striking beauty of Eagle's Nest Rock and the natural surroundings. Educational programs will allow visitors the opportunity to learn about the native flora, abundant fauna, remarkable geology, ranching tradition and colorful history of the area. Additionally, visitors could learn how to protect this valuable natural resource area and actively participate in such programs as volunteer rangers, nature hike leaders, weed warriors, trail maintenance and construction.

4.2 Natural Resources Management

Natural resources management addresses the health and dynamics of the plant and animal communities and the preservation of natural and geologic features and scenic vistas of the Eagle's Nest Open Space. For purposes of this plan, natural resources management is grouped into three categories: a) grassland and shrubland health and management; b) wildlife management; and c) hydrology and erosion management.

a. Grassland and shrubland health and management.

The management of vegetation health is important for ensuring sustainability of the landscape. Since plant communities are dynamic and changes in vegetation composition occur over time, vegetation at Eagle's Nest Open Space will be managed to allow for natural plant community changes to take place. Therefore, this plan outlines basic guidelines and alternatives for managing the natural communities at Eagle's Nest Open Space.

This section on vegetation health and management identifies practical management alternatives and strategies for maintaining the native plant communities and system functions and reducing the impact of non-native species at Eagle's Nest Open Space. Sustainability of native plant communities is highly dependent on natural processes that have established these communities. Therefore, potential management tools include the use of grazing or prescribed burning in these

communities to maintain community health. Proper management depends on grazing and burning plans remaining flexible and changes made based on current conditions rather than pre-determined programs. Pre-determined programs do not account for changes in conditions such as drought, fire, etc. This plan will also address issues related to rare species on the site, sensitive wildlife, non-native plant species, and other features. The management of non-native plant species is closely intertwined with maintaining native plant health and is addressed in depth in the Integrated Pest Management Plan for the Larimer County Open Lands Program (Larimer County, 1999). Additionally, visitor education for protecting and managing vegetation communities will be an important component to long-term sustainability of ecosystem health.

1. Stewardship History

Eagle's Nest Open Space has been used for cattle and horse grazing over the past 100 years. Currently, approximately 40 head of cattle and populations of mule deer and elk graze the property. While the specific fire history is unknown at this site, in general, fires were frequent components in the natural disturbance regimen of most grasslands.

2. Goal

To preserve and maintain native plant communities, protect rare species, and restore native vegetation in suitable areas.

3. Objectives and Implementation Steps

3.1 *Objective:* Evaluate baseline conditions and future potential impacts and effectiveness of land management techniques.

Implementation Steps:

- Inventory and monitor native vegetation.
- Incorporate Eagle's Nest Open Space into the Larimer County Parks and Open Lands Integrated Pest Management Plan.

3.2 *Objective:* Preserve and maintain native plant health using or simulating natural processes when necessary and where possible.

Both grazing and prescribed fire are management alternatives that may be carried out singularly or in combination. Timing, weather conditions, the political climate, and logistics will determine the feasibility of implementing these alternatives. Limitations do exist to both grazing and prescribed burning. In particular, grazing and fire management techniques should minimize impacts to imperiled or rare plants, plant communities and butterfly habitat at Eagle's Nest Open Space.

POTENTIAL MANAGEMENT TECHNIQUES

Grazing Management

Purpose: To promote vegetative health and vigor (i.e., control of non-native species, increase vegetation yields, improve wildlife habitat, increase forage availability) and reduce fire danger. Large ungulates and other herbivores were

once present at the Eagle's Nest Open Space. Currently, mule deer and elk are present on the property. Plant communities have evolved with and adapted to grazing, and proper grazing management of domestic livestock may be used to mimic native herbivores. This property lies in the NRCS determined loamy foothills, loamy park and rocky loam range sites. The presence of western wheatgrass, green needlegrass, blue grama, junegrass, Griffith wheatgrass, little bluestem, Idaho fescue, mountain muhly, Parry oatgrass, Arizona fescue as dominant species in these three range sites at Eagle's Nest Open Space is considered an indication of good vegetation condition (USDA-SCS, 1980). Limitations to grazing might include: water availability, rare species, public sentiment, lessee availability, and fencing.

For the purposes of grazing management, the following ratios will be used (Heady and Child, 1994).

1 cow and calf pair = 1 AU (animal unit)

1 replacement heifer = .6 AU

1 horse or bull = 1.25 AU

Implementation Steps:

- Develop a specific grazing plan as needed in cooperation with NRCS (Appendix B).
- Arrange for a lease contract to graze animals on the property.
- Work with lessee on issues such as fencing, salting, water, visitor/cattle interactions, and wildlife (i.e., rattlesnakes).

Prescribed Fire

Purpose: To promote vegetative health and vigor and to reduce the danger of catastrophic fire from natural ignition due to fuel build-up.

In general, fires were frequent components in the natural disturbance regimen of most grasslands. Fire can be used to stimulate browse, create openings in dense, inaccessible plant communities, as well as increase nutrient content of forage for wildlife and livestock.

Small-scale patches (40-60 acres) should be burned if needed on a rotational schedule between management areas and based on intensity of management need. Patches should be burned at a ground level, moderate to high intensity fire every 5-10 years (Wright and Bailey, 1980). A specific burn plan will be developed if needed in conjunction with Larimer County Emergency Services Department and will take into account plant and wildlife adaptations to fire. Limitations to prescribed burning might include water availability, community education, budget, rare species, public sentiment, political climate, air quality and weather.

Implementation Steps:

- Develop a burn plan as needed in cooperation with the Larimer County Emergency Services Department.

3.3 *Objective:* Protect rare species and communities of special concern.

While herbicides are necessary for some noxious weed control, only aquatic approved chemical controls, biological controls, hand pulling, and mowing should be used in areas near water and rare species communities.

Implementation Steps:

- Educate visitors on the sensitivity of rare or imperiled plant communities.
- Regularly monitor rare and imperiled vegetation communities and species through volunteer and staff efforts.
- Revegetate old roads and disturbed areas on the property using native grass seed mix.

3.4 *Objective:* Encourage agency and public awareness of native plant ecology using educational materials and programs and by including staff and volunteers in grassland and shrubland management activities.

Implementation Steps:

- When conducting large vegetation management and/or revegetation/restoration projects, incorporate efforts as part of interpretive talks, printed materials, etc. information on foothills ecosystems and the importance of restoration.
- In conjunction with other land management agencies and organizations (i.e., DOW, North Fork Weed Coop, TNC, etc.), coordinate educational opportunities in concert with management activities.

Monitoring

Purpose: Stewardship monitoring will be implemented to insure that management objectives are being met.

The uplands vegetation and riparian area health at Eagle's Nest Open Space should annually be reassessed to determine changes in plant species and community health. Monitoring will be performed by Parks and Open Lands staff and volunteers. Photo monitoring points will be established summer of 2003 and photos will be taken each year (preferably June). Photos will also be taken following implementation of management practices (i.e., grazing, prescribed burn, etc.). Other simple but effective monitoring protocols (i.e., plot or step-point vegetative transects) may also be utilized.

b. Wildlife management.

There are several important wildlife species, including nesting and hunting raptors currently present at Eagle's Nest Open Space. Additionally, the property is part of a mule deer migration and winter concentration area. Consequently, the trail, trailhead and recreation areas at Eagle's Nest Open Space will be carefully located to minimize impacting nesting raptors, the golden eagle nest site in particular, and other wildlife species. It is possible, however, that the trail alignment will not be sufficient to prevent disturbance to nesting birds and seasonal closures may be necessary. It is imperative that the behavior and presence of nesting raptors be closely monitored commencing opening of Eagle's Nest Open Space to public access to determine if negative impacts are occurring and if and when seasonal closures are necessary. On-going monitoring of wildlife and user behavior will determine the appropriateness of additional wildlife protection measures.

The Preble's meadow jumping mouse is protected under the Endangered Species Act and therefore it is required that a Habitat Conservation Plan (HCP) be developed to address impacts and mitigation of impacts to the mouse and its habitat. An HCP will be developed for Eagle's Nest Open Space in consultation with the USFWS to obtain an incidental take permit.

To help control disease with elk, deer or other wildlife on the property, Larimer County reserves the capability to allow game management through hunting or culling on a limited basis in conjunction with the Division of Wildlife. If hunting for recreation or continued culling for disease become necessary for ensuring the health of deer and elk herds, the Division of Wildlife will implement safety measures including the possibility of closing the area to the general public during hunting or culling operations, containing operations to specific areas of the property and/or allowing hunting or culling operations to take place during non-peak hours only. The Division of Wildlife has cited success with some of these management tools on other public lands in Larimer County, such as Lory State Park.

Fishing use on the North Fork of the Cache la Poudre River would be subject to a fisheries management plan by the Division of Wildlife after a comprehensive stream assessment is completed on the river. Preliminary sampling by the Division of Wildlife in September 2002 indicated predominance of native fish and no presence of sport fish such as trout. Further sampling will be completed to determine the appropriate level of potential stocking and species. Stocking of appropriate tolerant species of fish would not endanger the presence of the rare Iowa darter, as the darter is too small to be fished and being about 3 inches long, does not feed on the same types of organisms as the much larger sport fish species. Seasonal fishing restrictions will apply along portions of the river nearest the Eagle's Nest Rock to minimize disturbance to nesting golden eagles.

Implementation steps:

- Engage staff or volunteer groups such as wildlife biology or management students, etc. to inventory and regularly monitor the locations and behavior of wildlife species, specifically the golden eagle nest sites.
- Work with the Division of Wildlife to enhance wildlife habitat and manage wildlife populations as needed.

- Continue to work with the Division of Wildlife to conduct in-stream fish sampling.
- Develop in consultation with the USFWS, an HCP that addresses the Preble's meadow jumping mouse and other threatened or endangered species as required.
- Work with the Division of Wildlife and volunteers (i.e. local chapter of Trout Unlimited) to implement in-stream habitat and riparian habitat improvement projects, and related educational efforts for the public.

c. Hydrology and erosion management.

The steep slopes and folding land forms within Eagle's Nest Open Space act to drain surface runoff towards many small drainages and ultimately the North Fork of the Poudre River. Given the semi-arid climate, these drainages generally carry intermittent flows most common during the spring snowmelt period and after heavy rain events. A shallow pool in the northwest corner of the property fills for most of the spring and into the summer providing water and habitat for wildlife. Several springs on the property form small secluded pools, providing water for wildlife. Monitoring of the drainages and springs over time will be important to determine erosion and water availability for wildlife and the potential for continued livestock grazing.

Protection of the banks of the North Fork of the Cache la Poudre River and drainages is important for maintaining high quality riparian habitat for wildlife species and a healthy river system. Grazing plans that limit and direct access of livestock to the river corridor and designated fishing access points will be critical for ensuring long-term sustainability of the riparian corridor (See Appendix B).

Soil erosion is a major threat to land productivity and subsequently may impact wildlife values and water quality. A combination of the soils and geology of the Eagle's Nest Open Space make the site susceptible to high runoff during precipitation events with potential soil erosion and gully formation. The site will be managed for grassland and shrubland health (maintenance of adequate vegetative cover), a factor of utmost importance for erosion prevention. Erosion of the rock formation is of concern as well for reasons of aesthetics and maintaining the geologic integrity of the site.

To minimize the potential for erosion, the proposed trail at Eagle's Nest Open Space will be located to follow the land's natural topographic contours. The trail will be monitored regularly in order to detect any significant sign of soil erosion. In addition, trail users will be encouraged to remain on designated trails to prevent the development of social trails and, thus, subsequent erosion and gullying. In addition to minimizing disruption to nesting and perching raptors, rock climbing will not be allowed at Eagle's Nest Open Space to also minimize erosion of the rock faces.

Implementation steps:

- Include provisions for livestock management along riparian areas in grazing plans.
- Designate fishing access points along the river to reduce bank erosion and damage to riparian areas.

- Monitor the trail condition on a regular basis to check for erosion and trail deterioration.
- Require users remain on designated trails.
- Educate users on reasons for no rock climbing regulations.
- Use Parks and Open Lands Department and volunteer on-site naturalists to monitor and encourage proper trail use.

4.3 Outdoor Recreation Management

Recreation management generally refers to the management of people and outdoor recreational facilities. For purposes of this plan, recreation management is grouped into three categories: a) multiple use and user interaction, b) trail maintenance and construction and c) trailhead facilities maintenance.

a. Multiple use and user interaction.

The trail at Eagle’s Nest Open Space will be natural surface and open to such recreational uses as hiking, horseback riding, running and wildlife viewing. This non-motorized outdoor recreation is appropriate given the length of the trail, sensitive nature of the wildlife habitat and plant communities, and rural character and setting of the Laramie Foothills. Mountain biking will not be allowed at Eagle’s Nest Open Space. Eagle’s Nest Open Space will be open for day use from dawn to dusk, with the exception of ranger-led hikes or supervised environmental programs in the evening. The emphasis of public use at Eagle’s Nest Open Space will be on environmental education and low-impact recreation. Due to the sensitivity of the wildlife and to reduce erosion, the public will be required to stay on trails. Visitor courtesy and trail etiquette will be promoted through education programs by staff and volunteer rangers. To protect the riparian area and allow a recreational zone in the vicinity of the river, a small ~1/2 acre site near the existing bridge will provide picnic tables or benches and a river access point for anglers, and trail users.

Dogs will be allowed at Eagle’s Nest Open Space, but will be required to be on a leash at all times. Larimer County will work with adjacent landowners regarding trespassing issues.

Implementation steps:

- Promote trail and multi-use etiquette through clearly marked information signage and/or brochures.
- Develop a small 1/2-acre recreation zone near the bridge with picnic tables or benches, a horse tie post and a river access location.
- Incorporate Eagle’s Nest into the volunteer on-site naturalist program.
- Provide signs indicating dogs must be kept on a leash.
- Explore possibility of a “ranger hotline” to allow users and neighbors to reach an open lands ranger for emergency or conflict situations.
- Hire staff to patrol and on-site manage Eagle’s Nest Open Space.

b. Trail maintenance and construction.

The Eagle's Nest Open Space trail system will consist of approximate 5 miles of trail within the open space boundaries. The location of the proposed Eagle's Nest Open Space trail is shown on Figure 3. The trail will be natural surface and aligned to minimize conflicts between users and wildlife, avoid close proximity to private lands, provide a safe and scenic trail and minimize erosion potential. If geographically feasible, the first few hundred feet of trail from the trailhead to an overlook area will be built to allow passage by wheelchair users. The existing bridge has been inspected by an engineer and deemed in poor condition and unsafe for passage. The bridge will need to be replaced including the supports on either bank.

Implementation steps:

- Construct the Eagle's Nest Open Space trail using Larimer County staff and volunteers.
- Perform on-going trail maintenance as needed.
- Develop appropriate signage to clearly mark open space boundaries and to prohibit trespassing onto private property.
- Replace existing bridge and supports over N. Fork of Poudre River

c. Trailhead facility construction and maintenance.

Parking for the Eagle's Nest Open Space will be located in the northeastern portion of the property (Figure 3). The location of the trailhead was chosen to minimize any visual and environmental impacts. The trailhead will provide parking, a restroom facility and a trailhead informational kiosk as well as an emergency call box if feasible. No lighting will be used in the trailhead area. The parking area will be designed to accommodate 20 vehicles, and 5 horse trailers. There will be a user fee charged at Eagle's Nest Open Space to off-set costs of management and land stewardship activities. The user fee will be in line with user fees charged at other Parks and Open Lands properties.

Implementation steps:

- Construct the Eagle's Nest trailhead.
- Install a trailhead informational kiosk and restroom.
- Implement a system for user fee collection.

4.4 Education Opportunities

Numerous educational opportunities exist at Eagle's Nest Open Space and allow for the development of an integrated education program. Because this property is adjacent to USFS lands and in the vicinity of DOW and TNC lands there is the potential to coordinate environmental education opportunities within this larger framework. Potential environmental education subjects include watchable wildlife, foothills natural communities, rare plants, habitats and wildlife in the area (specifically Preble's meadow jumping mouse, Iowa darter, CNHP

communities, etc.), ranching, geology, hydrology, riparian systems, trail etiquette, local history, and the vision of the Open Lands Program, among others.

Implementation steps:

- Incorporate Eagle’s Nest Open Space in the volunteer naturalist program for Larimer County Parks and Open Lands Department.
- Include the Eagle’s Nest Open Space trail in the Department “Adopt-a-Trail” program.
- Work with other agencies and organizations to coordinate educational programs.
- Include educational materials in the trailhead vicinity including signs, brochures, etc.

4.5 Cultural Resource Management

There is a rich cultural history at Eagle’s Nest Open Space. Incursions by native peoples, homesteading and current day cattle ranching and residential development all mark a significant cultural history in this area. Of particular note, this property was the site of the first meeting of the Livermore Women’s Club in 1896. The Livermore Woman’s Club has erected a commemorative flagstone at the base of Eagle’s Nest Rock to document this event and this marker should remain in place. The property should be examined by an archaeologist for any cultural value. If any artifacts of significant value are found, these will be preserved in some fashion. Over time, the name of Eagle’s Nest rock has been mislabeled on USGS topographical maps. If possible, Larimer County will work with USGS to notify them for future reprints of their topographic maps to correct this label.

Implementation step:

- Work with an archaeologist to map and assess any archaeological value.
- Create a cultural history map that delineates important cultural features on the property.
- Incorporate cultural history of the site into interpretative materials and programs.
- Work with the Livermore Women’s Club to assist in interpreting the significance of this property in their club’s history.
- Work with the USGS to have the name “Eagle’s Nest” correctly located on their topographic maps.

4.6 Land Acquisitions

Expansion of the Eagle’s Nest Open Space is desirable in order to buffer it from becoming an island in a sea of development. Any lands added to the Eagle’s Nest Open Space will be on a willing seller basis and fall under the guidelines of this Resource Management Plan for Eagle’s Nest Open Space. In addition, acquisition of additional lands or trail easements and connections could be important in the future for connecting larger trail systems.

Implementation steps:

- Continue to work with adjacent property owners to protect additional lands as a buffer to Eagle's Nest Open Space.
- Continue to discuss with other agencies the possibility for connection of trails in a larger framework of regional trails in this area.

4.7 Summary of Implementation Steps and Phasing

A tabular summary of implementation steps and proposed timelines are provided below. These steps will be prioritized and implemented in a timely manner.

Summary of Implementation steps for Eagle's Nest Open Space

Eagle's Nest Open Space Implementation Steps	Cost Estimate	2003	2004	2005 and beyond	Responsible program*
Grassland and shrubland health					
Monitor grassland and shrubland health/rare species	Minimal		Summer	Biannual	Open Land Program
Integrate Eagle's Nest into existing IPM Plan	Staff Person	Summer 02			Open Lands Program
Educate visitors and staff on rare plants and animals	Staff/Volunteers			Continual	Open Lands Program
Revegetate disturbed areas with native seed mix	\$100/acre			Continual	Open Lands Program
Develop grazing plan with NRCS	\$200	Summer 02			Open Lands Program
Work with a lessee to graze the property.	Staff Person		Fall		Open Lands Program
Wildlife management					
Inventory and monitor the locations of sensitive and non-sensitive wildlife species	Staff Person	Spring		Annual	Open Lands Program
Work with DOW to enhance wildlife habitat as needed	As Needed			As Needed	Open Lands Program/DOW
Work with DOW to conduct in-stream fish sampling				As Needed	Open Lands Program/DOW
Develop an HCP in consultation with the USFWS for the Preble's meadow jumping mouse	\$3000	Winter			Open Lands Program/USFWS
Work with DOW/Volunteers on fish habitat and riparian area restoration	\$25,000	Spring			Open Lands Program/DOW
Hydrology and erosion management					
Require users to remain on designated trails	Staff Person			Continual	Open Lands Program
Monitor trail condition to check for erosion	Staff Person			Continual	Open Lands Program
Educate users on no climbing regulation	Staff Person			Continual	Open Lands Program
User interaction					
Install trail etiquette and multi use signage	\$80.00 ea.		Summer		Open Lands Program
Incorporate Eagle's Nest into the volunteer ranger program	Minimal			Continual	Open Lands Program
Educate users to keep dogs on a leash	Staff Person			Continual	Open Lands Program
Explore possibility of "ranger hotline"	Minimal	Winter			Open Lands Program
Install 2-3 picnic tables and horse tie post in vicinity of bridge	\$500 ea.				Open Lands Program
Trail maintenance and construction					
Construct Phase I trail with staff and volunteers	\$5.00/ft.	All Year			Open Lands Program

Eagle's Nest Open Space Implementation Steps	Cost Estimate	2003	2004	2005 and beyond	Responsible program*
Perform trail maintenance as needed	\$400.00/yr.			Biannual	Open Lands Program
Install signs that indicate open space boundary	\$2.00 ea.	Fall			Open Lands Program
Replace existing bridge	\$200,000				Open Lands Program
Trailhead facility construction and maintenance					
Develop parking area and trailhead facilities	\$75,000	Winter			Open Lands Program/Construction Crew
Install kiosk and restroom facilities at trailhead	\$30,000	Winter			Open Lands Program
Implement a user fee collection system			Winter		Open Lands Program
Education opportunities					
Coordinate environmental education activities with other agencies and organizations	Minimal	Fall			Open Lands Program/Volunteer Program
Incorporate into volunteer naturalist program	Minimal	Fall		Continual	Open Lands Program
Include in Department "adopt-a-trail" program	Minimal		Summer	Continual	Open Lands Program/Volunteer Program
Cultural resource management					
Work with an archaeologist to assess archaeological value	Minimal	Summer			Open Lands Program
Develop cultural history map	Volunteer	Winter			Open Lands Program/Volunteer Program
Incorporate cultural history into interpretive materials	Volunteer		Summer		Open Lands Program/Volunteer Program
Work with USGS to update topographical maps with correct name of Eagle's Nest	Minimal	Winter			Open Lands Program
Work with Livermore Women's Club to interpret significance of the property to the Club	Volunteer		Summer		Open Lands Program
Land acquisitions					
Explore land acquisition and/or trail easement possibilities	Continual			Continual	Open Lands Program
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.					

Eagle's Nest Open Space Regulations*
To protect the resources and provide a safe, quality experience for all users of Eagle's Nest Open Space, it is requested that visitors observe the following:
A. Camping is prohibited.
B. Fires and smoking are prohibited.
C. Motorized vehicular traffic is only allowed in the event of an emergency or a maintenance activity.
D. Dogs must be on a leash at all times.
E. Use hours are from dawn until dusk.
F. Rock climbing and/or scrambling is prohibited due to the fragility of the rock outcrops and sensitive wildlife.
G. Commercial uses and special events require a permit.
H. Use of glass containers is prohibited.
I. Consumption or possession of alcohol is prohibited.
J. Possession of marijuana or other drug paraphernalia is prohibited.
K. Possession or use of any firearms, fireworks, sparklers or explosive is prohibited.
L. Hunting or trapping activities are not allowed unless under special provision with the Division of Wildlife for Wildlife management purposes at Eagle's Nest Open Space.
M. Hiking, running and horseback riding are allowed on designated trails only.
N. Wildlife harassment is prohibited.
O. Public property must be treated with respect.
P. Disorderly conduct and public indecency are prohibited.
* See Larimer County Parks and Open Lands Department Regulations (2002)

5. APPENDIX A: Species Lists

Table 1
Potential mammal species located at the Eagle's Nest Open Space

Common name	Scientific name
Mule deer	<i>(Odocoileus hemionus)</i>
Mountain lion	<i>(Felis concolor)</i>
Coyote	<i>(Canis latrans)</i>
Elk	<i>(Cervus canadensis)</i>
White-tailed deer	<i>(Odocoileus virginianus)</i>
Least chipmunk	<i>(Eutamias minimus)</i>
Uinta chipmunk	<i>(Eutamias umbrinus)</i>
Rock squirrel	<i>(Citellus variegatus)</i>
Golden-mantled squirrel	<i>(Citellus lateralis)</i>
Hispid pocket mouse	<i>(Perognathus hispidus)</i>
Deer mouse	<i>(Peromyscus maniculatus)</i>
Rock mouse	<i>(Peromyscus difficilis)</i>
Mexican woodrat	<i>(Neotoma mexicana)</i>
Prairie vole	<i>(Microtus ochrogaster)</i>
Porcupine	<i>(Erethizon dorsatum)</i>
Red fox	<i>(Vulpes fulva)</i>
Raccoon	<i>(Procyon lotor)</i>
Striped skunk	<i>(Mephitis mephitis)</i>
Mountain cottontail rabbit	<i>(Sylvilagus nuttalli)</i>

Table 2
Plant species identified at Eagle's Nest Open Space

Grasses	
Crested Wheatgrass	<i>Agropyron cristatum</i>
Needle-and-Thread	<i>Stipa comata</i>
Green Needlegrass	<i>Stipa viridula</i>
Blue Grama	<i>Bouteloua gracilis</i>
Buffalo Grass	<i>Buchloe dactyloides</i>
Mountain Muhly	<i>Muhlenbergia montana</i>
New Mexico Feathergrass	<i>Stipa neomexicana</i>
Foxtail	<i>Alopecurus pratensis</i>
Little Bluestem	<i>Schizachyrium scoparium</i>
Side-oats Grama	<i>Bouteloua curtipendula</i>
Indian Ricegrass	<i>Oryzopsis hymenoides</i>
Three-awn	<i>Aristida purpurea</i>
Junegrass	<i>Koeleria macrantha</i>
Western Wheatgrass	<i>Agropyron smithii</i>
Kentucky Bluegrass	<i>Poa pratensis</i>
Canada Bluegrass	<i>Poa compressa</i>
Big Bluestem	<i>Andropogon gerardii</i>
Sedges	
Sun Sedge	<i>Carex stenophylla</i>
Shrubs	
Mountain Mahogany	<i>Cercocarpus montanus</i>
Skunkbush	<i>Rhus trilobata</i>
Hawthorn	<i>Crataegus macranthra</i>
Wax Currant	<i>Ribes cereum</i>
Rabbitbush	<i>Crysothamnus nauseosus</i>
Wild Plum	<i>Prunus americana</i>
Chokecherry	<i>Prunus virginiana</i>
Snowberry	<i>Symphoricarpos oreophilus</i>
Snakeweed	<i>Gutierrezia sarothrae</i>
Trees	
Ponderosa Pine	<i>Pinus ponderosa</i>
Plains Cottonwood	<i>Populus sargentii</i>
Succulents	
Prickly Pear Cactus	<i>Opuntia maccorhiza</i>
Nipple Cactus	<i>Coryphantha missouriensis</i>
Cactus sp.	<i>Opuntia polyacantha</i>
Forbs	
Violet	<i>Viola purpurea</i>
Violet	<i>Viola nuttalli</i>
Salsify	<i>Tragopogon dubius</i>

Silver Sage	<i>Artemisia frigida</i>
Yucca	<i>Yucca glauca</i>
Sunflower spp.	<i>Helianthus spp.</i>
Globemallow	<i>Sphaeralcea coccinea</i>
Locoweed	<i>Astragalus sp.</i>
Prairie Sage	<i>Artemisia ludoviciana</i>
Scurfpea	<i>Psoralea tenuiflora</i>
Mountain Bladderpod	<i>Lesquerella montana</i>
Nailwort	<i>Paronychia jamesii</i>
Shorts Milkvetch	<i>Astragalus shortianus</i>
Drummond Milkvetch	<i>Astragalus drummondii</i>
Geyer Larkspur	<i>Delphinium geyeri</i>
Nuttall Larkspur	<i>Delphinium nuttallianum</i>
Salt and Pepper	<i>Lomatium orientale</i>
Sand Lily	<i>Leucocrinum montanum</i>
Wild Blue Flax	<i>Adenolinum lewisii</i>
Wild Onion	<i>Allium textile</i>
Western Wallflower	<i>Erysimum asperum</i>
Skull Cap	<i>Scutellaria sp.</i>
Blue Mustard	<i>Brassica elongata</i>
Woods Rose	<i>Rosa woodsii</i>
Pinnate Tansymustard	<i>Descurainia pinnata</i>
Alyssum	<i>Alyssum parviflorum</i>
Fringed Sage	<i>Artemisia frigida</i>
False Dandelion	<i>Nothocalais undulata</i>
Golden Smoke	<i>Corydalis aurea</i>
Mouse Ear	<i>Cerastium strictum</i>
Groundsel	<i>Senecio fendleri</i>
Rocky Mountain Spurge	<i>Euphorbia robusta</i>
Wild Geranium	<i>Geranium caespitosum</i>
Carolina Whitlowgrass	<i>Draba reptans</i>
Wormwood	<i>Artemisia filifolia</i>
Bluebells	<i>Mertensia lanceolata</i>
Puccoon	<i>Lithospermum incisum</i>
Western Wallflower	<i>Erysimum asperum</i>
Evening Primrose	<i>Oenothera brachycarpa</i>
Poison Ivy	<i>Toxicodendron rydbergii</i>
Alumroot	<i>Heuchera parviflora</i>
Death Camas	<i>Toxicoscordion venenosum</i>
Bahia	<i>Bahia dissecta</i>
Prickly Poppy	<i>Argemone sp.</i>
Pussytoes	<i>Antennaria rosea</i>
Yarrow	<i>Achillea lanulosa</i>
Non-natives	
Mullein	<i>Verbascum thapsus</i>
Dandelion	<i>Taraxacum officinale</i>

Ragweed	<i>Ambrosia trifida</i>
Redstem Filaree	<i>Erodium cicutarium</i>
Whitlow Wart	<i>Draba nemerosa</i>
Gumweed	<i>Grindelia squarrosa</i>
Bindweed	<i>Fallopia convolvulus</i>
Blue Mustard	<i>Chorisposa tenella</i>
Jim Hill Mustard	<i>Sisymbrium altissimum</i>
Cheatgrass	<i>Bromus tectorum</i>
Smooth Brome	<i>Bromus inermis</i>
Japanese Brome	<i>Bromus japonicus</i>

Table 3
Butterfly Species in the Bonner Peak Area (Ellis 1999)

#	STATUS	SPECIES	COMMENTS
1	****	<i>Epargyreus clarus</i>	Common, foodplant probably <i>Glychrrhiza lepidota</i>
2	****	<i>Thorybes pylades</i>	Rare, one seen, marshy area on FS NW of Bonner peak
3	IR	<i>Thorybes mexicana</i>	<i>Lathyrus</i> sp. Common in meadows, potentially too far from source populations at higher elevations.
4	IR ¹	<i>Erynnis icelus</i>	<i>Populus tremuloides</i> occurs in small patches in drainages, potentially too far from source populations at higher elevations.
5	IS	<i>Erynnis brizo</i>	No oaks.
6	****	<i>Erynnis martialis</i>	Frequent on hilltops (Bonner Peak) in June.
7	PR	<i>Erynnis pacuvius</i>	Larval foodplant <i>Ceanothus fendleri</i> fairly common on south facing slopes on hillsides, should turn up.
8	PR	<i>Erynnis afranius</i>	Probably resident, just not examined in detail to confirm.
9	****	<i>Erynnis persius</i>	Common, larval foodplant <i>Lupinus</i> common.
10	PS	<i>Pyrgus scriptura</i>	Found in lower foothills in Fort Collins, should also occur to north.
11	****	<i>Pyrgus communis</i>	Relatively uncommon, general lack of weedy Malvaceae.
12	****	<i>Pholisora catullus</i>	Relatively uncommon, general lack of weedy Chenopodiaceae along roadsides.
13	****	<i>Piruna pirus</i>	Frequent/common along N.Fk Poudre River in June.
14	****	<i>Oarisma garita</i>	Extremely common, May-June.
15	****	<i>Yvretta rhesus</i>	Found once, on <i>Bouteloua gracilis</i> grassland along N. Fk. Poudre River, June
16	****	<i>Stinga morrisoni</i>	Found frequently, near top of small hill west of Bonner Peak in ponderosa pine woodland ca. 6700 feet, down to N. Fk Poudre River. Very common 1997, moderately common 1998.
17	PR	<i>Hesperia uncas</i>	Should be present given extensive grasslands with suitable foodplants.
18	PR	<i>Hesperia juba</i>	Believed to have been seen hilltopping on Bonner Peak, needs confirmation.
19	****	<i>Hesperia comma</i>	Common in grasslands/woodlands in late summer; adults on <i>Liatris punctata</i> .
20	****	<i>Hesperia ottoe</i>	Infrequent in scattered stands of big bluestem on south-facing hillsides (south side of Bonner Peak, upper slopes of Obenchain Draw). First seen 7/4/96 after several years of looking.
21	****	<i>Hesperia leonardus pawnee</i>	Infrequent in grasslands (only 5 individuals seen over past 4 years – should be more abundant; mostly seen after main H. comma population has peaked.
22	****	<i>Hesperia pahaska</i>	Common hilltopper (Bonner Peak).
23	****	<i>Hesperia viridis</i>	Confirmed 7/12/99, Bonner Peak trail.
24	****	<i>Hesperia nevada</i>	Seen once, upper Obenchain Draw drainage on south-facing hillsides ca. 6700 ft.
25	IS	<i>Atalopedes campestris</i>	This migrant unlikely to show up, given ruderal species appear to be infrequently encountered here. Maybe along N. FK Poudre.
26	PS/PR	<i>Polites coras</i>	"lawngress" skipper could move up N. Fk. of Poudre.

#	STATUS	SPECIES	COMMENTS
27	PS/PR	Polites sabuleti	same potential as P. coras - never saw this species in Ft. Collins.
28	****	Polites draco	Seen twice in N. facing quasi-montane meadow on N. Side Bonner Peak - low!!! ca. 6800 ft. First seen 6/96.
29	****	Polites origenes	Infrequent - seen in association with A. arogos, H. ottoe in patches of big bluestem - Obenchain Draw.
30	****	Polites mystic	Frequent in swales and spring-fed meadows in drainages N & S. of Bonner Peak, also along N. FK. Poudre River.
31	IS	Polites sonora	Very unlikely, but P. draco is resident.
32	****	Atrytone arogos	Big bluestem associate -Obenchain Draw, probably also along N.Fk Poudre in burned areas.
33	PR	Anatrytone logan	Potential habitat along N.FK Poudre.
34	****	Ochlodes sylvanoides	Common late summer skipper - adults on Monarda fistulosa flowers.
35	****	Paratrytone snowi	Seen once (7/4/96) in association w/ H. ottoe, P. mystic. Head of Obenchain Draw in mid-grass meadow. Low??
36	****	Poanes taxiles	Common early summer skipper everywhere.
37	IR	Euphyes bimacula	A few Carex meadows associated with drainages on east side of Bonner Peak that could hold population. Probably too far from source populations (Terry Lake & other irrigation reservoirs east of the Dakota hogback).
38	****	Euphyes vestris	Common summer skipper - Larval foodplant Carex heliophila dominant component of foothills grassland.
39	****	Atrytonopsis hianna	Fairly frequently seen species in ponderosa pine woodlands from 6000 -6800 ft. Larval foodplant – both big and little bluestem are present in scattered patches.
40	****	"Amblyscirtes" simius	Infrequent in blue grama grassland on ridgelines in ponderosa pine woodlands.
41	****	Amblyscirtes aenus	Infrequent in ponderosa pine woodlands/foothills grassland in June.
42	****	Amblyscirtes oslari	Infrequent, same habitats as A. aenus
43	****	Amblyscirtes vialis	Infrequent, seen twice along N. FK. Poudre River adjacent to riparian zone.
44	****	Pamassius phoebus	Frequent in foothills meadows/ponderosa pine woodland. Larval foodplant Sedum lanceolatum is common on decomposed granite.
45	****	Papilio polyxenes	Seen twice, hilltopping on Bonner Peak.
46	****	Papilio bairdii	Seen once, hilltopping on Bonner Peak.
47	****	Papilio zelicaon	Frequent, hilltopping on Bonner Peak.
48	****	Papilio indra	Infrequent, seen every year, hilltopping on Bonner Peak. Oviposition observed on Harbouria trachypleura.
49	****	Papilio rutulus	Frequent, riparian woodland.
50	****	Papilio eurymedon	Frequent hilltopper. Foodplant? maybe Ceanothus fendleri.
51	****	Papilio multicaudatus	Frequent, riparian woodland.
52	****	Neophasia menapia	Infrequent in ponderosa woodland, some years absent.
53	IS	Pontia beckeri	Could turn up along roadside where weedy Descurainaea and Sisymbrium are present.
54	****	Pontia sisymbrii	Common early spring, probably Arabis feeder.
55	****	Pontia protodice	Infrequent, lack of ruderal mustards.
56	PR	Pieris occidentalis	Probably present, but infrequent
57	****	Pieris rapae	Riparian communities, probably using Nasturtium aquaticum in this area.

58	****	<i>Euchloe ausonides</i>	Common spring species, many oviposition observations on <i>Arabis drummondi</i> .
59	****	<i>Euchloe olympia</i>	Sympatric with <i>E. ausonides</i> , probably same foodplants.
60	****	<i>Colias philodice</i>	Common, larval foodplants native <i>Astragalus</i> , <i>Vicia</i> .
61	****	<i>Colias eurytheme</i>	Common, larval foodplants same as <i>C. philodice</i> .
62	****	<i>Colias alexandra</i>	Infrequent, and absent most years. Oviposition on <i>Thermopsis divaricarpa</i> in meadow, N. side Bonner Peak.
63	****	<i>Zerene cesonia</i>	Seen once, migrant.
64	IS	<i>Phoebis sennae</i>	Migrant, unlikely.
65	****	<i>Eurema mexicana</i>	Seen occasionally, migrant.
66	PS	<i>Eurema nicippe</i>	Migrant, likely
67	****	<i>Nathalis iole</i>	Occasional, migrant.
68	PR	<i>Lycaena arota</i>	Lots of <i>Ribes</i> , haven't seen yet.
69	PR	<i>Lycaena xanthoides</i>	Ruderal species, weedy <i>Rumex</i> uncommon, so may be tough to find. Best bet N. Fk. Poudre River
70	****	<i>Lycaena hyllus</i>	Confirmed along N. Fk. Poudre downstream of Obenchain Draw on 7/11/99.
71	****	<i>Lycaena rubida</i>	So far only along N. FK. Poudre in riparian zone.
72	****	<i>Lycaena heteronea</i>	Common, <i>Eriogonum jamesii</i> , <i>E. umbellatum</i> likely larval foodplants.
73	****	<i>Lycaena helloides</i>	Remarkably hard to find. One seen, fresh female, along N. FK. Poudre River 9/96.
74	****	<i>Satyrium titus</i>	Common summer hilltopper.
75	****	<i>Satyrium behrii</i>	Common in <i>Cercocarpus</i> zone.
76	****	<i>Satyrium californicum</i>	Common in <i>Cercocarpus</i> zone.
77	****	<i>Satyrium liparops</i>	Frequent in riparian zone (<i>Prunus</i> , <i>Crataegus</i>)
78	****	<i>Satyrium saepium</i>	Infrequent, <i>Cercocarpus</i> zone.
79	****	<i>Callophrys apama</i>	Frequent, in association with <i>Eriogonum umbellatum</i> .
80	****	<i>Callophrys sheridani</i>	Infrequent, in association with <i>E. umbellatum</i> .
81	PR	<i>Mitoura spinetorum</i>	Found ponderosa pine stand badly infested with <i>Arceuthobium</i> , but so far no <i>M. spinetorum</i> after a couple years of looking. May be too remote from higher elevation pops.
82	****	<i>Mitoura siva</i>	Common, in association with <i>Juniperus scopulorum</i> .
83	****	<i>Incisalia augustinus</i>	Infrequent, in ponderosa pine woodland & adjacent meadows. Foodplant? - no <i>Arctostaphylos</i> .
84	****	<i>Incisalia mossii</i>	Infrequent, in association with <i>Sedum lanceolatum</i> . Missing some years.
85	****	<i>Incisalia eryphon</i>	Common everywhere.
86	****	<i>Strymon melinus</i>	Infrequent, but seen everywhere. Larva found on <i>Mentzelia</i> flower; also on <i>Eriogonum alatum</i> .
87	PS	<i>Leptotes marina</i>	Improbable migrant.
88	****	<i>Hemiargus isola</i>	Occasional migrant.
89	****	<i>Everes comyntas</i>	Rare, so far only once in weedy area along N. Fk. Poudre River.
90	****	<i>Everes amyntula</i>	Common everywhere. Probably <i>Astragalus</i> feeder.
91	****	<i>Celastrina argiolus</i>	Frequent in woodlands, riparian areas.

92	****	<i>Celastrina neglecta-major</i>	Small colony found in association with <i>Humulus</i> in riparian zone near our house.
93	****	<i>Euphilotes enoptes</i>	Common, in association with <i>E. umbellatum</i> .
94	PR	<i>Euphilotes rita</i>	Possibly present near Highway 287 - <i>Eriogonum effusum</i> occurs in small colonies, so far no <i>E. rita</i> .
95	****	<i>Glaucopteryx piasus</i>	Infrequent in foothill meadows.
96	****	<i>Glaucopteryx lygdamus</i>	Frequent in foothill meadows.
97	****	<i>Lycæides melissa</i>	Common everywhere. Probably <i>Astragalus</i> , <i>Oxytropis</i> , <i>Vicia</i> feeder here.
98	****	<i>Plebejus saepiolus</i>	Common in foothill meadows, N. side Bonner Peak. Probably <i>Astragalus agrestis</i> feeder (per J. Scott); no native <i>Trifolium</i> s here.
99	****	<i>Plebejus icariodes</i>	Common everywhere.
100	****	<i>Plebejus acmon</i>	Infrequent, in association with <i>E. effusum</i> .
101	****	<i>Agriades glandon</i>	Seen twice along N. Fk. Poudre River. Low elevation, but <i>Androsace</i> is common understory species in Douglas fir woodlands.
102	****	<i>Apodemia mormo</i>	Infrequent, in association with <i>Eriogonum jamesii</i> in dry foothill meadows.
103	PR	<i>Apodemia nais</i>	Haven't seen yet. Should be present; <i>Ceanothus fendleri</i> is widespread on s. facing hillsides.
104	****	<i>Euptoieta claudia</i>	Occasional. Migrant, with summer broods.
105	IS	<i>Speyeria cybele</i>	Miracles sometimes happen.
106	*****	<i>Speyeria aphrodite</i>	Everywhere, probably using <i>V. nuttalli</i> as primary foodplant.
107	IS	<i>Speyeria idalia</i>	See <i>S. cybele</i> .
108	****	<i>Speyeria edwardsii</i>	Everywhere, probably using <i>V. nuttalli</i> .
109	****	<i>Speyeria coronis</i>	Everywhere.
110	****	<i>Speyeria callippe</i>	Everywhere.
111	PS	<i>Speyeria atlantis (electa)</i>	Not seen yet. May stray down Poudre River. No <i>Viola adunca</i> seen; although <i>V. canadensis</i> occurs along shaded drainages.
112	****	<i>Speyeria hesperis</i>	Fresh, mating pair seen on N. Side Bonner Peak, 6/21/98. Probably using <i>Viola canadensis</i> , frequent in drainages on west side of Bonner Peak. Confirmed again 7/2/99 along bottom of Obenchain Draw. Large perennial violet populations there
113	****	<i>Speyeria mormonia</i>	Seen several times, fresh individuals. May use <i>V. nuttalli</i> at this low altitude.
114	****	<i>Poladrys arachne</i>	Infrequent. Haven't determined larval foodplant <i>Penstemon</i> yet.
115	****	<i>Chlosyne gorgone</i>	Common everywhere.
116	PS	<i>Chlosyne nycteis</i>	<i>Rudbeckia laciniata</i> very uncommon, a few patches along N. FK. Poudre River. Could stray in from mainstem Poudre or upstream on N. FK.
117	****	<i>Chlosyne palla</i>	In meadow, N. side of Bonner Peak.
118	****	<i>Phyciodes tharos</i>	Seen once, N. Fk. Poudre River.
119	****	<i>Phyciodes selenis</i>	In meadow, N. side of Bonner Peak.
120	****	<i>Phyciodes campestris</i>	Everywhere.
121	****	<i>Phyciodes pallidus</i>	Frequent, foothill canyons.
122	****	<i>Euphydryas anicia</i>	Foothill meadows. Larval foodplants: <i>Besseyia plantaginea</i> , <i>Besseyia wyomingensis</i> (near southern limit of this species); also <i>Penstemon</i> . Haven't seen larvae on <i>Linaria dalmanica</i> yet, which is a widespread weed in this area.
123	****	<i>Polygonia interrogationis</i>	See once, 4/20/97 along N. Fork Poudre River. Hops feeder??

124	IS	<i>Polygonia comma</i>	Lots of hops larval foodplant – could stray in.
125	****	<i>Polygonia satyrus</i>	Occasional, riparian.
126	PS	<i>Polygonia faunus</i>	Could turn up in foothill canyons with lots of shrub willows.
127	****	<i>Polygonia gracilis (zephyrus)</i>	Common everywhere.
128	****	<i>Polygonia oreas (nigrozephyrus)</i>	Seen once. Needs further confirmation.
129	****	<i>Nymphalis antiopa</i>	Everywhere.
130	IS	<i>Nymphalis vau-album</i>	Dream on.
131	PS	<i>Nymphalis californica</i>	Should turn up some year, especially since <i>C. fendleri</i> is present.
132	****	<i>Nymphalis milberti</i>	Everywhere.
133	****	<i>Vanessa atalanta</i>	Everywhere.
134	****	<i>Vanessa virginiensis</i>	Found once, hilltopping on Bonner Peak.
135	****	<i>Vanessa cardui</i>	Frequent in big migration years.
136	****	<i>Vanessa annabella</i>	Seen once, September, fresh individual.
137	****	<i>Junonia coenia</i>	Seen 7/11/99 along bottom of Obenchain Draw.
138	PR	<i>Basilarchia archippus</i>	Good habitat along N. Fk. Poudre River.
139	****	<i>Basilarchia weidemeyeri</i>	Common woodland/riparian species.
140	IS	<i>Anaea andria</i>	Could turn up any time.
141	****	<i>Asterocampa celtis</i>	Long way to hackberry trees. Some native <i>Celtis</i> in foothill canyons.
142	****	<i>Libytheana bachmani</i>	Seen once during a strong migration year (July 18, 1993)
143	****	<i>Cyllopsis pertepida</i>	Seen once, N. side of Bonner Peak in shady draw under douglas fir/ponderosa pine. Reconfirmed 7/11/99 in Gibbs Draw, w. side of Bonner Peak.
144	****	<i>Coenonympha tullia</i>	Everywhere
145	****	<i>Cercyonis pegala</i>	Everywhere
146	****	<i>Cercyonis oetus</i>	Everywhere
147	****	<i>Neominois ridingsi</i>	Infrequent, bluegrama grasslands.
148	PR	<i>Oeneis chryxus</i>	Should turn up, given that this species occurs in Horsetooth Mtn. Park.
149	****	<i>Oeneis uhleri</i>	Common everywhere in meadows.
150	****	<i>Danaus plexippus</i>	Infrequent, larvae found on <i>Asclepias speciosa</i> .
151	IS	<i>Danaus gillipus</i>	Unlikely.

Update July 1999

6. APPENDIX B: Grazing Plan

7. BIBLIOGRAPHY

1. Braddock, W.A., D.D. Wohlford, J.J. Connor. 1988. *Geologic Map of the Livermore Quadrangle Larimer County, Colorado* (Map GQ-1618). USGS, Washington D.C.
2. Colorado Climate Center. 1999. Website: <http://ccc.atmos.colostate.edu>
3. Ellis, Scott. 1999. *Butterfly Species in the Livermore Area*.
4. Heady, R. F. and R.D. Child. 1994. *Rangeland Ecology and Management*. Westview Press, Boulder. 519pp.
5. Larimer County, 1999 (updated 2001). *Integrated Pest Management Plan for the Larimer County Parks and Open Lands Department*.
6. Kettler, S. 1996. *Significant Plant, Animal, and Wetland Resources of Larimer County and Their Conservation*. Colorado Natural Heritage Program.
7. Larimer County Parks and Open Lands Department. 2001. *Larimer County Open Lands Master Plan*. Loveland, CO.
8. Livermore Women's Club. 1995. *Among These Hills – A History of Livermore, Colorado*. Citizen Printing Company.
9. Terracon, 2001. *Phase I Environmental Site Assessment*. Darryl J. Paul, Ft. Collins, CO
10. USFS. 1997. *Revision of the Land & Resource Management Plan for the Arapaho-Roosevelt National Forest and Pawnee National Grasslands*.
11. USDA-SCS. 1980. *Soil Survey of Larimer County Area, CO*. U.S. Government Printing Office. 239-812/3.
12. Wright, H. A. and A. W. Bailey. 1980. Fire ecology and prescribed burning in the Great Plains – a research review. USDA Forest Service, Gen. Tech. Rep. INT-77.