

SUPPLEMENTAL MATERIALS
 TO THE ENVIRONMENTAL RESOURCES ELEMENT
 Draft: Prepared November 2013

TABLE OF CONTENTS

OVERVIEW	1
SECTION I. WILDLIFE RESOURCES	6
WILDLIFE SPECIES OF SPECIAL CONCERN	6
CRITICAL WILDLIFE HABITAT	9
PREBLE'S MEADOW JUMPING MOUSE HABITAT CONSERVATION AREAS	13
SECTION II. VEGETATION RESOURCES	16
PLANT SPECIES AND COMMUNITIES OF SPECIAL CONCERN	17
RARE PLANT AREAS AND SIGNIFICANT NATURAL COMMUNITIES	21
WETLANDS AND RIPARIAN AREAS	24
SECTION III. LANDSCAPE-SCALE DESIGNATIONS	29
ENVIRONMENTAL CONSERVATION AREAS	29
HIGH BIODIVERSITY AREAS	33
NATURAL AREAS	34
NATURAL LANDMARKS	36
LITERATURE CITED	37
APPENDICES	
A: GLOSSARY	38
B: CHRONOLOGY OF ENVIRONMENTAL RESOURCE UPDATES	43
C: SUBJECT MATTER EXPERTS	45
D: ADDITIONAL SOURCES FOR WILDLIFE RESOURCES SECTION	48
E: ADDITIONAL SOURCES FOR VEGETATION RESOURCES SECTION	51
F: A BRIEF HISTORY OF RARE PLANTS AREAS AND SIGNIFICANT NATURAL COMMUNITIES DESIGNATIONS	57
G: A BRIEF HISTORY OF WETLAND AND RIPARIAN AREA DESIGNATIONS	60
H. CRITICAL WILDLIFE AREA DESCRIPTIONS	62
I. ENVIRONMENTAL CONSERVATION AREA DESCRIPTIONS	

SUPPLEMENTAL MATERIAL

ENVIRONMENTAL RESOURCES ELEMENT

2013 UPDATE

OVERVIEW

Purpose of the Supplemental Materials

The Environmental Resources Element (ERE) has been a cornerstone of the county's land use decision-making process since the Boulder County Comprehensive Plan (BCCP) was first adopted in 1978. The ERE has served well as a core element of the county's land use vision, resulting in the quality of life we enjoy today. As is true with this update, the maps of the ERE playing a particularly important role illustrating what is unique and distinctive about the county: the species, habitats, and ecosystems that are particularly at risk of being lost from the county. The year-long, multi-faceted update process that has produced this invaluable inventory and assessment has provided updated maps and lists of important environmental resources that will serve the county for many years to come.

It is important to keep in mind that the resources highlighted by the maps and lists of species of special concern may not be comprehensive. However, they do provide a frame of reference for understanding and analyzing potential trade-offs in any decision-making process. In addition to the maps, criteria, and lists that staff has prepared for inclusion in the ERE, this volume of supplemental materials is intended to provide more detailed information that supports the information displayed on the updated maps and could serve as a reference for future decision-making.

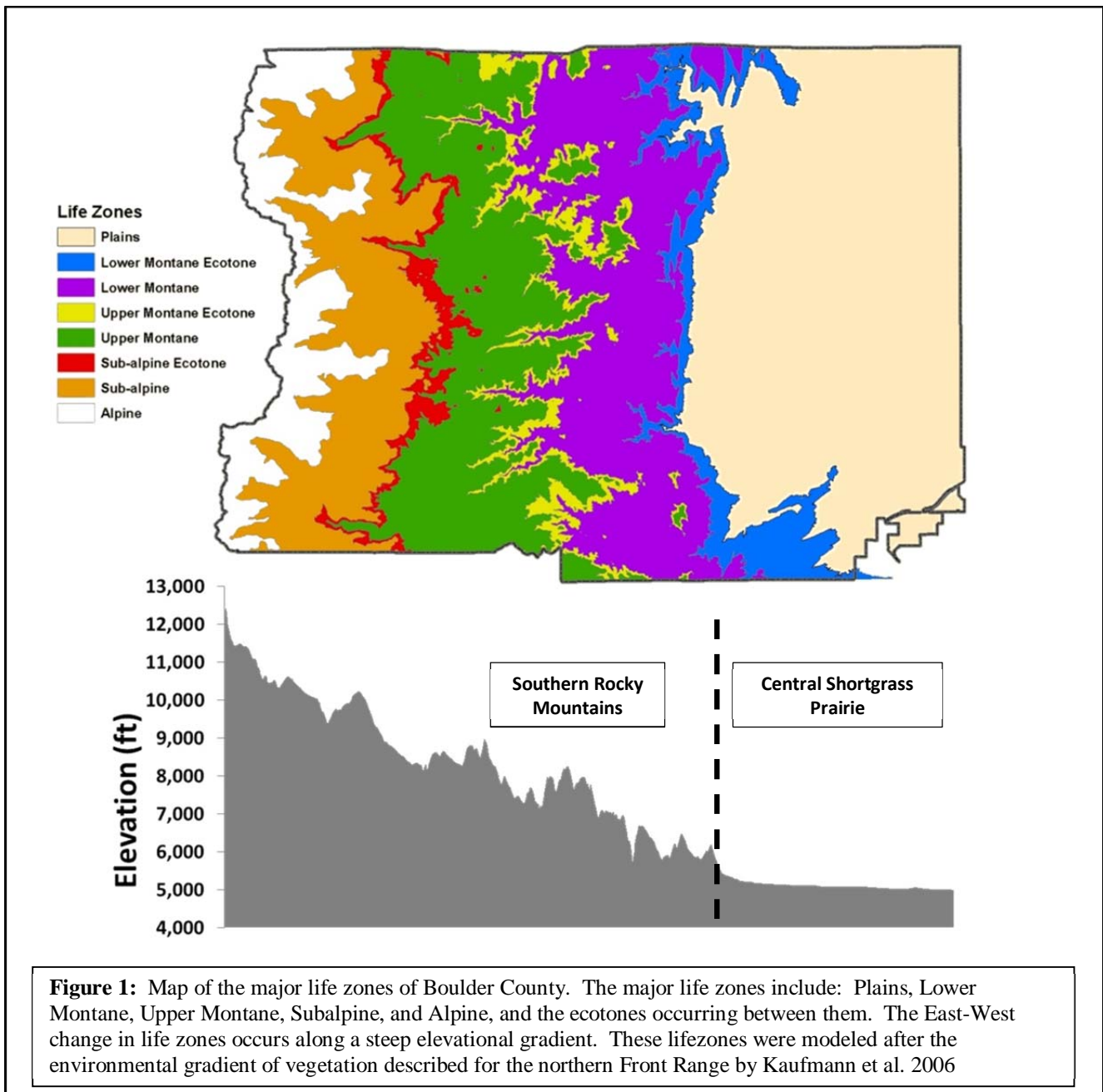
These supplemental materials are a very important component of the update in and of themselves. On the one hand, they provide the background material to Planning Commission, POSAC, BOCC, and the public that demonstrates the methodical, scientific approach behind the proposed updates. And, like previous versions of the ERE, this material also serves as a point of reference or snap shot of the state of Boulder County's environmental resources at this moment in time. In addition, these supplemental materials provide a more detailed inventory of the characteristics of each of these environmental resources. This information can be used to assess future land use proposals and in county lands management, as well as informing the county's advocacy and partnership activities with other jurisdictions, quasi-public entities, and non-governmental organizations.

This information includes:

- Context for the scientific principles and process utilized in the update
- A synthesis of historical information from previous iterations of the ERE and the BCCP
- Descriptions of the criteria and methods used to develop the Lists of Species of Special Concern and to identify the areas designated on each of the maps
- Specific descriptive information about individually designated areas such as Critical Wildlife Habitats and Environmental Conservation Areas

Boulder County's Unique Ecological Diversity

Extending from the Great Plains in the east, westward to the crest of the Continental Divide, Boulder County is home to a unique combination of prairie, forest and tundra environments. The rolling plains that cover the eastern third of the County at lower elevations (4,896 – 5,498 ft.) abruptly give way to tree-covered slopes which reach up to treeline near 11,500 ft. The western border of the County is composed primarily of tundra and is formed by the Continental Divide where the mountain range towers above 12,000 ft. Within the borders of the county, the Divide reaches its most eastern point of any place on the continent. Long's Peak, which is located in Rocky Mountain National Park, is the highest point in the County (14,259 ft.).



Boulder County sits at the interface of two distinct ecoregions: the Southern Rocky Mountains and Central Shortgrass Prairie. The environmental uniqueness of the county is largely influenced by abrupt altitudinal variation that occurs within a relatively short 20 mile east-west gradient. These dramatic changes in landform sharply define the local native ecosystems and their associations of plant and animal species. The County is comprised of five major lifezones which occur in longitudinal bands following the east-west elevation gradient: Plains, Lower Montane, Upper Montane, Subalpine, and Alpine zones (Figure 1). While some species of flora and fauna can be found in many or all of these lifezones, many species are highly specialized and are restricted to one or a few habitat types within a single lifezone. Some migratory species utilize a large portion of each life zone during their lifetimes.

Boulder County's ecological diversity is unique not only for the Rocky Mountain region, but also for the nation as a whole. Boulder County has long been recognized as a place of great natural beauty and diversity. Since the late 1800s when miners first settled in the valley, many people have been drawn to the Boulder area to enjoy the quality of life found along the Front Range of Colorado. During the 1990s, the Front Range experienced a population explosion, with a population increase of 29.3% from 1990 to 2000 (U.S. Census Bureau 2008). In Boulder County, for example, population increased in the towns of Superior and Erie by 4,795% and 1,342%, respectively, over the twenty years between 1990 and 2010 (Colorado Conservation Trust 2012). Substantial development and recreational pressure followed this dramatic increase in population.

The demands on our natural resources to support this increasing population have resulted in an increased threat of potential degradation of the quality and uniqueness of our county's environmental resources. The increased utilization and fragmentation of our natural environment has altered important ecological processes that support human health and overall ecological health, also increasing the loss of native species and their unique habitats. Despite these increasing demands on local environmental resources, much of our native ecosystems retain some or all of their natural integrity, especially when compared to many other places in our nation. This is due in large part to the foresight of the leaders and citizens of Boulder County in implementing land use planning tools like the BCCP beginning in the 1960s and 70s that emphasize the prudent consideration of natural resources. The decisions we make today about how to continue to support our commitment to land use and conservation practices that sustain native ecosystems will determine the degree to which the county's great natural beauty and biological diversity are preserved and the goals of the Environmental Resources Element are sustained.

Overview of the ERE's Designated Environmental Resources

Boulder County values and strives to preserve, conserve and restore the unique and distinctive natural features, ecosystems and landscapes of the county using sound resource management principles and practices at both a site-specific level and on a broader, landscape scale. Boulder County's important environmental resources include naturally occurring ecosystems and their native species populations. The designations described in detail in these Supplemental Materials provide an inventory and illustration of the unique and distinctive environmental resources in the county and discuss approaches to best managing and conserving these resources. Species of Special Concern are an integral component

of this management approach. The list of Species of Special Concern includes locally threatened or endangered wildlife, plants and plant communities that the county seeks to protect. Habitat for these Species of Special Concern is particularly vital, since it often presents our best chance to protect native species.

In addition to identifying Species of Special Concern, the ERE designates areas of important habitat and uniqueness at two scales: the “site-specific scale” and the broader, “landscape-scale.” At the site-specific scale, important environmental resources typically consist of an easily definable area such as an individual parcel of land or a distinct geographical location where specific resources exist. Designations at the site-specific scale include Critical Wildlife Habitats, Rare Plant Areas, Wetlands, Riparian Areas, and Significant Natural Communities (formerly referred to as Critical Plant Associations).

Environmental resources designated at the landscape-scale are much larger and holistic in approach. At this scale, the designations of High Biodiversity Areas and Environmental Conservation Areas seek to preserve broader ecological processes and functions. These areas often encompass multiple resources also designated at the site-specific scale. In addition, Natural Areas and Natural Landmarks designations are intended to encompass and protect unique and distinctive natural features and landscapes in the county.

The ERE Designations: An Ecosystem Management Approach

The conservation and protection of the county’s unique natural features, biodiversity, and ecosystems as expressed in ERE Goal B.1 cannot be achieved by focusing solely on individual species or groups of species and their respective habitat at the site-specific scale. So, taking cues from the evolution of the field of Conservation Biology, the ERE has also evolved to also include some that take a more holistic approach to managing and protecting ecosystems at the landscape-scale (i.e. regional scale or course-filter scale). Although protecting individual species is essential to the success of conservation efforts, as they are the fundamental units of diversity, conservation biologists have recognized that this approach is limited and ignores the complexity of natural systems and the necessary interactions among organisms and their environment in maintaining ecosystem health.

Contemporary models for ecosystem management incorporate landscape ecology concepts and implement conservation efforts at both the species level and ecosystem level. The goals of an ecosystem management approach (as defined in Grumbine 1994) are to promote regional biodiversity and ecosystem health by:

- 1) Maintaining viable populations of all native species where they occur.
- 2) Representing, within protected areas, all native ecosystem types across their natural range of variation.
- 3) Maintaining evolutionary and ecological processes (e.g. disturbance regimes, hydrological processes, and nutrient cycles)

- 4) Managing the landscape over periods of time long enough to maintain the evolutionary potential of species and ecosystems.
- 5) Accommodating human use and occupancy while applying the above goals.

Commensurate with advances in the field of Conservation Biology, in 1994 Boulder County adopted the principles of “The Ecosystem Plan” developed initially by the Boulder County Nature Association (BCNA 1994). This plan outlined an ecosystem management approach to maintaining regional biodiversity and ecosystem health in the county that integrates both “fine filter” (site-scale) and “coarse filter” (landscape-scale) approaches to conservation. While Boulder County was previously engaged in conservation planning at the species and habitat level (a.k.a. “fine filter”), the adoption of the Ecosystem Plan concept broadened the scale of conservation efforts in the county to include “course filter” management of regional biodiversity through the maintenance of landscape-scale ecological processes and providing for areas of core habitat for large roaming wildlife species. This multi-scale approach seeks to conserve species and their vital habitat, at the site scale with designations like Critical Wildlife Habitats and Significant Natural Communities; while also conserving the ecological processes and community interactions that maintain them at the landscape scale with designations like Environmental Conservation Areas, including their Habitat Connectors.

The Organization of this Document

This document has been organized to reflect this approach. The first two sections describe environmental resources at the site-scale or “fine filter” level. Section I contains information related to Wildlife Resources including the List of Wildlife Species of Special Concern, Critical Wildlife Habitats, and Preble’s Meadow Jumping Mouse Habitat Conservation Areas. Section II contains information related to Vegetation Resources including the List of Plants and Plant Communities of Special Concern, Rare Plant Areas, Significant Natural Communities, Wetlands and Riparian Areas. Section III describes environmental resources at the landscape-scale, or “coarse filter” level. These include Environmental Conservation Areas, High Biodiversity Areas, Natural Areas, and Natural Landmarks. Finally, the Appendices provide additional information and reference material such as a glossary, a list of Subject Matter Experts consulted during the Update process, and a chronology of updates to the ERE since the adoption of the Boulder County Comprehensive Plan in 1978.

SECTION I. WILDLIFE RESOURCES

WILDLIFE SPECIES OF SPECIAL CONCERN, CRITICAL WILDLIFE HABITATS, and PREBLE'S MEADOW JUMPING MOUSE HABITAT CONSERVATION AREAS

Introduction

The list of Wildlife Species of Special Concern (SSC) and Critical Wildlife Habitats (CWH) recognize those species and habitats in most need of conservation or restoration in Boulder County. These designations are intended to effectively guide where resource management efforts should be directed at the site scale, or fine scale, an important component of the management of natural resources. This scale of conservation planning provides an effective approach to stem the loss of local species and rare habitats which contribute to the greater goal of ecosystem conservation, but they are distinct from the “course scale” ecosystem planning framework and ECAs that recognize the broader issues of habitat fragmentation and loss of regional biodiversity.

WILDLIFE SPECIES OF SPECIAL CONCERN

Boulder County is a region of state and national ecological importance due to its geography and the forward-thinking commitment of a community who has long-valued a sustainable natural environment and the diversity of life it supports. The goal of maintaining a comprehensive and inclusive species list is to prevent currently threatened species from being extirpated and to prevent other species from declining to a level of concern

The first step in preventing species loss and the destruction of vital habitat for vulnerable species is to identify those species that are of concern. Boulder County maintains a Species of Special Concern (SSC) List for the purpose of conserving and preserving wildlife species and their habitat in the county. This list is comprehensive in that it includes a broad spectrum of taxonomic groups and habitat types. It is also comprehensive in the sense that County staff undertook an exhaustive review of special status species lists. The Boulder County SSC list is a compilation of special status species identified by federal, state, and local government agencies, as well as non-governmental conservation organizations and conservation experts, as species that warrant protection in order to prevent the loss of habitat or populations (See *Appendix C* for a complete list of agencies and organizations reviewed in compiling the County SSC list).

The compiled list was reviewed internally by Parks and Open Space staff biologists to assess the pertinence of individual species to conservation efforts in Boulder County. That is, it was determined if

a given species was expected to occur in Boulder County and, if so, whether or not that species warranted protection based on the best and most current local and regional information. The SSC list was then submitted to or reviewed by all of the land-holding agency partners and local subject matter experts in the county in order to ensure completeness and prudence of species appearing on the list. (Appendix C).

The SSC list includes species that are currently threatened by extirpation or are experiencing significant declines, as well as those species whose populations are locally stable but vulnerable to known imminent threats, such as continental disease spread. We also include some species whose populations are locally stable but in major decline throughout the rest of their range in order to recognize that Boulder County may serve as a reserve or a source population in the future.

Two special cases of the Species of Special Concern list are “Extirpated Species” and “Species of Undetermined Status”. The Boulder County SSC list identifies 17 species that have been extirpated from the county. These species are listed to recognize known losses of native species that once occupied this region but have been extirpated. They are also listed to identify targets for restoration of our native communities. While the decision making authority for restoring extirpated species to their former range in Colorado lies with state and federal agencies, Boulder County could work opportunistically with our agency partners to facilitate and support the reintroduction of lost species where possible and consistent with other policies and objectives of the county’s.

“Species of Undetermined Status” have been called out in the SSC list to identify targets for future research and monitoring. These are species for which little is known about their ecology, population status, or habitat requirements. Consistent with other programmatic objectives, the County may engage in future efforts with local experts and management agencies to learn more about these species and manage for them appropriately.

To guide the formulation of the SSC List, a discrete set of criteria were developed for screening potential species to inclusion. In order for a species to be considered for the Boulder County Species of Special Concern list, it must meet at least one of the following criteria:

Criteria for Designating Wildlife Species of Special Concern

- 1) Species with Federal status (listed or proposed threatened or endangered, candidates for listing, or under review for listing) or State status (threatened or endangered);
- 2) Species considered to be sensitive that appear on the following lists: Colorado Parks & Wildlife – Species of Concern, U.S. Forest Service Region 2 – Sensitive Species, U.S Fish & Wildlife Service – Birds of Conservation Concern;

- 3) Species that have undergone a documented long-term noncyclical population decline¹, or whose abundance is critically low relative to their expected abundance in a given habitat type or quality;
- 4) Species occurring in Boulder County that are naturally rare²;
- 5) Species that are dependent upon isolated or restricted³ habitat for at least a portion of their life cycle;
- 6) Species that have a disproportionately large effect on the structure and function of the ecosystem(s) they inhabit, and thus promote species diversity, ecosystem function and natural processes;
- 7) Extirpated species that historically occupied and are native to Boulder County;
- 8) Species of global or continental concern whose populations are stable in Boulder County (e.g. Colorado Natural Heritage Program - G1S4);
- 9) Species whose populations in the County may be currently secure, but are vulnerable to imminent threats affecting their populations either directly or indirectly⁴.
- 10) Species of undetermined status which require further research and/or monitoring.

The Boulder County Wildlife SSC list is a compilation of special status species identified by federal, state, and local governmental agencies, as well as non-governmental conservation organizations and conservation experts, as species that warrant protection in order to prevent the loss of habitat or populations. Those species that are both rare and declining (criteria 3 & 4) are considered “imperiled” and are of greatest concern. “Imperiled” species have been denoted on the Wildlife SSC list.

¹ Wildlife populations are known to vary naturally, increasing or decreasing across time in a recurrent fashion, commonly related to food availability, habitat condition, or predator-prey relationships. A population decline below levels expected to occur naturally and occurring at a scale of time greater than observed patterns is an indication that a species is being adversely impacted by some unnatural phenomenon and may need protection.

² Species which are “naturally rare” normally occur in low abundance throughout their range. While their populations may be stable, species that are rare on the landscape are inherently more vulnerable to extirpation or extinction compared to species with large populations.

³ “Isolated or restricted” habitat is defined as a discrete area that is distinguished from surrounding habitat by its unique features (biotic or abiotic). Such habitat is typically rare and patchily distributed on the landscape. Species that rely on “isolated or restricted” habitat are more vulnerable to extirpation than those that are widely distributed or are habitat generalists.

⁴ Direct threats to populations include loss of individuals from overexploitation or other means of direct mortality. Indirect threats include habitat degradation, competition with invasive species, increased prevalence of disease and pollution, and climate change.

CRITICAL WILDLIFE HABITAT

A premise of the goals and policies applying to this section of the Environmental Resources Element is to conserve and preserve native wildlife populations occurring in Boulder County by protecting habitat that is vital to the life requirements of species in need of conservation action. It is also a goal to promote biodiversity by conservation and preservation of significantly productive habitat. Areas designated as Critical Wildlife Habitat⁵ (CWH) are considered rare, irreplaceable or difficult to replace, and are essential to the conservation and preservation of wildlife in Boulder County. One of the following criteria must be met for an area to be considered for designation as Critical Wildlife Habitat:

Criteria for Designating Critical Wildlife Habitat:

- 1) Habitat which supports a high degree of biodiversity of wildlife species native to Boulder County.
- 2) A discrete, identifiable location that supports a significant concentration of one or more native wildlife species during vulnerable life-history stages which is necessary for self-sustaining populations⁶ (e.g. breeding or nesting sites, calving and wintering grounds).
- 3) Provides physical and biological habitat features which are vital to the maintenance, successful recovery or reintroduction of one or more wildlife Species of Special Concern (see SSC Criteria).

The map of CWHs depicts those areas that are in greatest need of preservation. In many cases, the selected areas meet multiple criteria for designation. The majority of designated CWHs are relatively finite in size and location, and restricted to a particular habitat type such as a wetland or native grass association. One exception is with regard to the needs of large mammals whose ranges are large and the locations of many are non-specific, although areas of high concentration are known. Another exception is for areas where multiple high value wildlife habitats are aggregated. In most cases, the distribution of high value or vulnerable habitat types across the landscape is not uniform. Highly productive and ecologically valuable sites will serve as localized hot spots of biodiversity where multiple CWHs are expected to occur. Such sites should be protected as a single cohesive habitat area with multiple resource values.

⁵ The definition of Critical Wildlife Habitat in the Boulder County Comprehensive Plan does not connote any specific state or federal legal meaning. The term “critical” is distinct and does not convey the same regulations as used in the Federal Endangered Species Act. It is a goal of the Environmental Resource Element to identify and preserve these critical areas without the use of regulatory limits on land uses, but can guide the County land use decision process.

⁶ For the purposes of defining Critical Wildlife Habitat in the Boulder County Comprehensive Plan, the County adopts the definition of a “self-sustaining” population as defined in the State of Colorado Department of Natural Resources Division of Wildlife, Administrative Directive W-7 (April 1, 2007): “Self-sustaining: a species whose abundance and/or distribution throughout the state are maintained by natural recruitment at a level sufficient that the species would be expected to persist in perpetuity.”

Designation of a CWH was often anchored to a key species or group of species who are known to be highly vulnerable or sensitive and whose populations are of concern. The total area required to protect a given species or habitat was typically determined by evaluating the threats and the area requirements of the most sensitive species or the species with the most stringent habitat requirements. For example, Colorado Parks and Wildlife has recommendation about the size of areas around a nest site within which human activity should be minimized to avoid nest site disturbance. Areas were also recognized due to a significant and localized concentration of wildlife, such as for breeding and feeding, as well as areas of very high biodiversity, such as willow carr.

Critical Wildlife Habitats in Boulder County were identified and defined based on the best available local information, input from local and regional subject matter experts, and on-the-ground knowledge of county wildlife and habitats by Parks and Open Space staff. Many agency biologists, local experts and naturalists, and conservation professionals volunteered time, resources, and information to aid in the identification and mapping of CWH's in the County. (See *Appendix C* for a complete list of Subject Matter Experts). An extensive review of historical documents and current scientific literature was undertaken to help identify areas of interest and support justification for designating a CWH. Mapping was performed using modern GIS techniques and aerial imagery, as well as on-the-ground mapping. Many of the CWH areas were derived from data shared by agency partners and organizations that were the result of previous scientific studies and resource inventories conducted in Boulder County.

Table 1: List of Boulder County Critical Wildlife Habitats (CWH) with the criteria for designation that was met by each (i.e. Habitat for Species of Special Concern, Significant Concentration Area, High Biodiversity Area). See *Appendix H* for full description of each CWH. CWH numbering is not sequential. Some previously established CWH's have been deleted or subsumed by another CWH. Those numbers were "retired".

CWH	Name	SSC Habitat	Sig. Conc. Area	High Biodiversity
2	Copeland Willow Carr	X		X
4	Deadman Gulch and South St. Vrain	X		
5	Steamboat Mountain	X		
7	St. Vrain Corridor	X	X	X
8	Rabbit Mountain	X	X	X
10	Middle St. Vrain Willow Carr	X		X
11	Tumblesom Lake	X		
12	Marietta Canyon	X	X	
13	Lefthand Palisades	X		
14	Lefthand Creek Cottonwood Groves			X
15	Lagerman Reservoir	X		
16	Gaynor Lakes	X		X
17	Panama Reservoir	X	X	
19	City of Boulder Watershed	X		
20	Como Creek	X		

21	Boulder Falls Area	X		
23	Boulder Reservoir	X		
25	Walden and Sawhill Ponds	X		
26	White Rocks	X		
27	Lower Boulder Creek Riparian Area	X	X	
28	Diamond Lake Outlet	X		
29	Chittenden Meadows		X	X
30	Arapaho Ranch - Tucker Homestead		X	X
31	Boulder Mountain Parks Eldorado Mountain	X		
35	Lost Lake	X		
36	Carolyn Holmberg Preserve at Rock Creek Farm	X		
37	Sombrero Marsh			X
38	Lazy H. Ranch Willow Carr	X		X
39	Coney Flats Willow Carr			X
40	Mitchell Lake Willow Carr			X
41	Coney Lake Willow Carr			X
42	Long Lake Willow Carr			X
43	South St. Vrain Willow Carr			X
44	Lefthand Reservoir Willow Carr			X
45	Boulder Watershed Willow Carr			X
46	Lake Albion Willow Carr			X
47	Triple Lakes Willow Carr			X
53	Woodland Flats Willow Carr	X		X
54	Buckeye Basin Willow Carr	X		X
55	Los Lagos Willow Carr	X		X
56	Roaring Fork Willow Carr	X		X
57	Peterson Lake	X		
58	Hunters Creek	X		
59	Geer Canyon	X		
60	Caribou Ranch Montane Parkland	X	X	X
61	Barker Reservoir	X		
62	Beaver Reservoir	X		
63	Goose Pond	X		
64	Southern Grasslands	X	X	
65	Kenosha Wetlands			X
66	Two Creeks	X		
67	Cony Creek	X		
68	Ouzel Creek	X		
69	Sandbeach Creek	X		
70	Peewink Mountain	X		
71	Red Hill	X	X	X
72	Indian Lookout Mountain	X		
73	North Saint Vrain Canyon	X	X	X

74	Hat Rock	X		
75	Ingersoll Quarry	X		
76	BLM South	X	X	
77	Hodgson - Harris	X		
78	Buffalo Gulch and Rock Creek	X		
79	Bear and Aspen Canyons	X		
80	Giggey Lake	X		X
81	Hall 2	X		X
82	B.L.I.P. Ponds / Lapin Pond	X		
83	Geer Meadows		X	
84	Dakota Hogback	X	X	X
85	Coffin Top Mountain	X		
86	Powers March	X		
87	Quicksilver	X		
88	Gunbarrel Hill	X		X
89	South Boulder Creek Floodplain and Terrace	X		
90	North Boulder Grasslands	X		X
91	Bummer's Gulch	X		
92	Kenosha Heronry	X	X	
93	Peewink Mountain Elk Herd		X	
94	North Foothills Elk Herd		X	
95	Winiger Ridge Elk Herd		X	
96	Upper Caribou Park Willow Carr Complex	X		X

Wildlife Migration Corridors

Specific, delineated areas of known elk migration were mapped using the best available information from Colorado Parks and Wildlife as well as data based on studies and long-documented expert observations by Boulder County staff and local experts from around the county. These shapes are based on specific and reliable information about the movement patterns of all major elk herds in the County. These areas may also serve as movement corridors for other wildlife species in the County. These areas should be treated with the same, if not more, conservation concern as any other Critical Wildlife Habitat area. Elk and other large mammals are sensitive to human development, forestry practices and recreational activities such as trail building, especially along known and well-established migration routes. Designated and protected migration routes are critical for migratory mammals to move in response to seasonal weather change or to complete breeding activities. The degradation of areas within the migration corridors, by such activities as building fences of excessive height, dense urban development, or high-use recreational trail establishment, will likely reduce the viability of elk herds in the county and could lead to greater wildlife conflict with existing mountain developments as elk may seek alternative and lower-quality routes in response to fragmentation of corridor habitat.

PREBLE'S MEADOW JUMPING MOUSE HABITAT CONSERVATION AREAS

The Preble's Meadow jumping mouse (*Zapus hudsonius preblei*, hereafter PMJM) is a native rodent that occupies riparian shrubland habitats of the plains and lower foothills along the Rocky Mountain Front Range. It is a sub-species of the more common and widely distributed Meadow jumping mouse (*Zapus hudsonius*). This sub-species is endemic to the Front Range, with a very small historic range that spans from Colorado Springs north to central Wyoming. PMJM are known to be naturally rare throughout their range; this, combined with the fact that they occupy a restricted habitat type and have a narrow geographic distribution, puts them at high risk for extinction. The primary threat to this species is the destruction or adverse modification of its vital habitat, the vegetated areas along waterways. Since Euro-American settlement of the West began, the loss and alteration of such riparian habitats has increased over time through land conversion (urbanization and agricultural cultivation), over grazing, and alteration of natural hydrologic cycles and other natural processes. This diminishment of functional riparian habitat has resulted in significant species decline and the ultimate listing of PMJM as Threatened under the Endangered Species Act. PMJM is the only wildlife species known in the county that is subject to the protection of the Endangered Species Act and subject to regulation at the federal level. As such, designation and mapping in the Comprehensive Plan is an appropriate means for supporting the objectives of the federal initiative in land use and resource management decisions at the local level.

In the late 1990's, The Nature Conservancy convened a Science Team of the foremost local and regional experts and specialists to provide the best available science on PMJM and to help guide local conservation planning efforts (hereafter, the Science Team). The Science Team ultimately produced a "Conservation Handbook on the Preble's Meadow jumping mouse" (Pague and Grunau 2000; hereafter, the Conservation Handbook) to aid in the development of habitat conservation plans for PMJM. In the early 2000's, Boulder County worked with the Science Team to develop a resource map to help guide PMJM conservation in the county. Boulder County has incorporated the resultant map and associated concepts of the Conservation Handbook into a county wide map of PMJM Habitat Conservation Areas. Following the guidance of the Science Team, the County expanded the original maps to include PMJM locations and habitat that have been documented in the time since the original map was produced. Additionally, all "Foothills Perennial Stream Habitat" was mapped up to 7,600 ft. as potential habitat to guide conservation of PMJM throughout its distribution in the County. (The U.S. Fish & Wildlife Service recommends that sites below 7,600 ft. in Colorado be surveyed, USFWS 2004).

Habitat Conservation Areas (HCA) Descriptions

The Boulder County Preble's meadow jumping mouse Habitat Conservation Areas are adapted from the "Possible Conservation Zones" outlined in the PMJM Conservation Handbook (Pague and Grunau 2000). These designations are designed to guide effective conservation of PMJM habitat in the County. The overarching goal is to aid in the recovery of this Threatened species. Effective application of PMJM

conservation efforts will minimize human impacts to PMJM habitat, improve the amount and quality of PMJM habitat in the county, and restore mouse populations to sustainable levels.

Mouse Management Area (MMA): These are areas in which PMJM is known to occur and include adjacent habitat patches that are likely to be occupied given their close proximity to known occupied habitat. The supposition in this zone is that mouse management will be as inclusive as possible. Riparian systems in MMA's are managed or protected to maintain higher numbers of mice and higher quality habitat. Setbacks are as generous as possible with core and buffer concepts in place. Areas of poor quality within MMA's are priorities for restoration with high expectations for success. Mice populations in MMA's should be monitored periodically to ensure sustainable population levels. MMA's span 600 ft. on each side of the stream channel for areas within the 100 yr. floodplain, and 300 ft. a side for areas outside the 100 yr. floodplain.

Possible Linkage (PL): Connectors or linkages are designated for populations that once occurred as a single unit, but are now fragmented. A connection among populations would provide adequate structure for a few mice to "make it to the other side", facilitating dispersal, population maintenance, and genetic exchange. The assumption is that a linkage is practical and that mice will survive there. These areas span 600 ft. on each side of the stream channel for areas within the 100 yr. floodplain, and 300 ft. a side for areas outside the 100 yr. floodplain.

Suitable, Contiguous Habitat (SCH): This represents an area with suitable habitat that is contiguous to a known population where jumping mice either have not been captured or where trapping has not occurred. These areas span 600 ft. on each side of the stream channel for areas within the 100 yr. floodplain, and 300 ft. a side for areas outside the 100 yr. floodplain.

Suitable, Noncontiguous Habitat (SNC): This represents an area of suitable habitat that is NOT contiguous to a known population that is not known to be occupied by PMJM (i.e. PMJM either have not been captured or no trapping has occurred in these areas). These areas span the width of riparian areas mapped by Colorado Parks and Wildlife (available online), or 100 ft. on each side of the stream channel; whichever is greater.

Potential Restoration, Contiguous (PRC): These areas are not known to be occupied (i.e. PMJM either have not been captured or no trapping has occurred in these areas), but are contiguous to known populations. The habitat is currently not suitable or is believed to be significantly degraded. These areas are commonly impacted by severe overgrazing, active mining, and high concentrations of invasive weeds. Restoration of these areas to high quality habitat could result in a significant increase in the potential number of PMJM in a population, reducing the risk of extirpation. These areas span 600 ft. on each side of the stream channel for areas within the 100 yr. floodplain, and 300 ft. a side for areas outside the 100 yr. floodplain.

Foothills Perennial Stream Habitat (PSH): This HCA identifies all potential PMJM habitat along foothills perennial streams in the county that is not covered under one of the other designations. PMJM are known to occupy riparian habitat up to 7,600 ft. in elevation (USFWS 2004). Confirmed trapping of PMJM in Boulder County has occurred at elevations above 7,500

ft. (Schorr 2007). However, much of the on-the-ground sampling in the past did not occur at higher elevations and so these areas were not previously mapped. These areas should be surveyed if the county's desire is to mitigate human impacts on PMJM throughout its range. These areas span 50 ft. on each side of the stream channel along main stem channels (i.e. Middle St. Vrain Cr., South St. Vrain, Lefthand Cr., Boulder Cr., South Boulder Cr.), and 25 ft. on a side for smaller tributaries.

GOALS FOR CONTINUED WILDLIFE MONITORING AND RESEARCH

Through participation in the ERE Update process, the body of knowledge about the spatial distribution and population levels of Boulder County's wildlife has greatly increased. The following will be key monitoring and ongoing research projects to continue to keep the information about wildlife in the county current:

- 1) Those species that have been identified on the Wildlife SSC list should be monitored for significant population changes, while currently non-critical species should be monitored for population decreases that can be related to habitat loss.
- 2) There should be ongoing field work to keep current and increase the knowledge on the distribution of selected wildlife species such as large mammals, raptors, and rare species.
- 3) Additional research is needed on small mammals, amphibians, reptiles, and invertebrates.

SECTION II. VEGETATION RESOURCES

Plants Species and Communities of Special Concern, Rare Plant Areas and Significant Natural Communities, and Wetlands and Riparian Areas

Introduction

Throughout its history, the ERE has included Goals and Policies intended to contribute to and protect vegetation resources in Boulder County. Previous versions of the ERE have recognized the values of natural features, critical wildlife habitats, natural areas, wetlands and existing critical or unique stands of vegetation. Boulder County's resource conservation efforts and appreciation of native plant and plant community diversity is reflected in the Update through updated goals, policies, and maps that reaffirm the intentions and values of past versions of the BCCP.

Boulder County's Unique and Valuable Native Plant Diversity

Boulder County is recognized as an ecologically unique and important region of Colorado. The high level of native plant diversity in the county is a significant reason for this. Often, the presence of rare plants and rare plant communities is considered an indicator of the health and quality of habitat. In a 2007-2008 inventory conducted by the Colorado Natural Heritage Program (CNHP) on behalf of Boulder County, CNHP concluded that,

Boulder County is truly unique with a remarkable richness of rare fauna and flora well worth preserving for future generations. Overall, the concentration and quality of imperiled elements and habitats attest to the fact the conservation efforts in Boulder County will have both statewide and global significance (CNHP 2009).

Sustaining and protecting these rare plants and plant communities has been identified as a goal in the ERE. The list of Plant Species and Communities of Special Concern and the designation of Rare Plant Areas and Significant Natural Communities is a means for identifying and protecting these unique and irreplaceable natural features. In general, these resources consist of species and communities that are threatened or endangered; locally rare; isolated or restricted to distinct local habitat types; and native species which have ceased to exist within Boulder County. Often, they are endemic or restricted to finite sites where they provide important functions for wildlife and people such as local temperature moderation, soil development and enrichment, erosion control, and water filtration.

More specifically, Rare Plant Areas are sites that vary in size and are known to have occurrences of one or more rare plants. Significant Natural Communities can vary from comprising species and critical plant associations that are relatively undisturbed by humans, to species with limited distribution and

occurrence, to areas considered significant because they are fire adapted communities and now contain a locally rare and significant community. Collectively, Rare Plant Areas and Significant Natural Communities are sites where Plant Species and Communities of Special Concern are known to occur.

PLANT SPECIES AND COMMUNITIES OF SPECIAL CONCERN

The BCCP has historically recognized and designated a few plants and plant communities along with the locations in the county where these species and important plant communities were known to exist. For this Update, a more well-defined set of criteria have been developed than previously existed for the identification of plant species and communities to include on the Plants SSC List. This list was used subsequently to identify Rare Plant Areas and Significant Natural Communities for representation on the updated Rare Plant Areas and Significant Natural Communities Map.

The Plants SSC List is a compilation of rare and imperiled plants and plant communities that warrant protection in order to prevent population or habitat loss. The list was developed through collaboration with botany and plant ecology professionals in federal, state, and local governmental agencies, non-governmental conservation organizations, local universities, and private consultants, as well as Boulder County conservation experts (the Subject Matter Experts). The majority of species and communities appearing on this list are recognized by the Colorado Natural Heritage Program (CNHP) as critically imperiled to vulnerable.

CNHP, based at Colorado State University, maintains Colorado's only comprehensive database for rare plant and plant community information, including species and community status and location. CNHP, along with The Natural Heritage Network, developed a Heritage Network Ranking System that ranks species and communities based on Global (G1-G5) and State (S1-S5) rarity and status. By way of example, species ranked G1 or S1 are considered critically imperiled species while species ranked G5 or S5 are considered stable and secure species. Using this system to inform the creation of the Plants SSC List allows us to better understand the broader significance and relevance of the important resources in the county to sustaining biodiversity at the local, regional, and global level.

A methodology and a list of criteria to guide evaluation of each species and plant community for inclusion on the Plants SSC List was developed. In general, the SSC List comprises species CNHP ranks as critically imperiled, imperiled, or vulnerable to extirpation globally (G1-G3) or statewide (S1-S3). Species ranked as more secure or secure (G4-G5, S4-S5) are excluded from the list.

Evaluation Methodology

Boulder County follows the USDA Plants Database as taxonomic authority (USDA NRCS 2013) for the Plant SSC List and related BCCP designations. The SSC List was compiled by comparing the CNHP's statewide Master List and CNHP's Boulder County Tracking Lists for natural communities, vascular species, and nonvascular species (CNHP 2013, 2013a) to various resources. These resources primarily included:

- Federally Listed Threatened and Endangered Species (USFWS 2013)
- University of Colorado Herbarium database (COLO 2013)
- City of Boulder Open Space and Mountain Park's Grassland Management Plan (OSMP 2010) and West Trail Study (OSMP 2009)
- National Park Service's rare plant and communities lists for Rocky Mountain National Park (NPS 2004, 2010)
- Boulder County Parks and Open Space's SSC Lists from prior BCCP versions (1986, 1995, and 1999)

Note: A full resource list is available in the Additional References and Sources for Vegetation Resources Section (Appendix E).

The Plants SSC List was further refined with input from the Subject Matter Experts. Primary field guides used in this SSC List selection include Ackerfield (in press), Carsey et al. (2003), Culver and Lemly (2013), and Weber and Wittmann (2012). The list was cross-referenced with existing Boulder County data including rare plant inventory data and CNHP's 2007-2008 inventory (CNHP 2009).

Species were carefully weighed against the set of evaluation criteria described below to determine if a species or community warranted inclusion on the Plants SSC List. In several instances, species with no CNHP rank or with a more secure CNHP rank were included on the list. For example, even though neither species is currently ranked by CNHP, limber and bristlecone pine species appear on the Plants SSC List due to threats from climate change and disease. CNHP rank code definitions are followed by the list of evaluation criteria.

CNHP Rankings

CNHP's rank codes^{7 8} are defined in the following way:

G/S1: Critically imperiled because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation or extinction. Typically 5 or fewer occurrences or less than 1000 remaining individuals.

G/S2: Imperiled because of rarity or because of some factor(s) making it very vulnerable to extirpation or extinction. Typically 6 to 20 occurrences or between 1,000 and 3,000 remaining individuals.

G/S3: Vulnerable either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation or extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 remaining individuals.

G/S?: Unranked - Rank not yet assessed.

⁷ Further definitions of the Heritage Network Ranking System are available on the CNHP website (<http://www.cnhp.colostate.edu/about/heritage.asp>).

⁸ [Where two numbers appear in a global or state rank, e.g., S2S3, the actual rank of the element falls between the two numbers. However, in most instance CNHP experts use the more conservative number, e.g., if S2S3, the species or community is considered a 'S2'rank until further information is available \(Jill Handwerk, personal communication\).](#)

G/SU: Unrankable due to current lack of information or due to substantially conflicting information about status or trends.

GQ: Indicates uncertainty about taxonomic status.

G#?: Indicates uncertainty about as assigned global rank.

G#T#: Trinomial rank (T) is used for subspecies or varieties. These species or subspecies are ranked on the same criteria as G1 – G5.

SNR: State Not Ranked. CNHP has not yet looked at this species.

TNR: Not yet ranked. CNHP has not yet look at this species.

Plants SSC List Evaluation Criteria

In order for a plant species or community to be listed on the Plants SSC List, it must meet at least one of the Required Criteria or at least two of the Conditional Criteria. In some instances, a species has been included on the list even though it does not meet the SSC List criteria. This only occurs with species for which there is presently incomplete or uncertain information available. The list may be updated as more information is learned about individual species or communities including changes to their status.

Required

1. Species/communities with Federal Status (Listed or Proposed Threatened or Endangered, LT, LE, PT, or Candidates for listing, C, or under review for listing), e.g., Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*), LT, G3T2/S1 (U.S. Fish and Wildlife Service 2013, CNHP 2013);
2. All CHNP ranked G1-G2 and S1-S2 species that are not also federally listed;
3. Collectable/Harvestable: Species threatened by collection or harvest, including showy varieties of orchids, lilies, penstemon, and cacti.

Conditional

4. Species/communities with U.S. Forest Service Region 2 (USFS R2) sensitive species⁹, National Park Service (NPS) sensitive species within Rocky Mountain National Park (RMNP)¹⁰, or City of Boulder Open Space and Mountain Parks sensitive status;
5. Species/communities that could occur within Boulder County and that CNHP ranks as critically imperiled, imperiled, or vulnerable to extirpation either globally (G1 – G3) or statewide (S1 – S3), e.g., autumn willow (*Salix serissima*) – G4/S1 and narrowleaf grapefern (*Botrychium neolunaria*) – G5/S3;

⁹ This criterion acknowledges that USFS R2 boundaries extend beyond Boulder County and encompass habitats that do not occur within the county, thus not all USFS R2 sensitive species appear on the SSC List.

¹⁰ This criterion acknowledges that that NPS RMNP boundaries extend beyond Boulder County and encompass habitats that do not occur within the county, thus not all NPS RMNP sensitive species appear on the SSC List.

6. Relictual species/communities having undergone a documented long-term decline or having a critically low population size relative to their historic presence and/or relative abundance in a given ecosystem, e.g., American groundnut (*Apios americana*) – G5/S1 and big bluestem – prairie dropseed (*Andropogon gerardii* – *Sporobolus heterolepis*) – G2/S1S2;
7. Species/communities endemic to Boulder County or region¹¹, e.g., Colorado aletes (*Aletes humilis*) – G2G3/S2S3;
8. Species/communities known or thought to be extinct or extirpated in Boulder County, i.e., species that historically occupied and are native to Boulder County, that may exist in surrounding regions, and that may be able to repopulate Boulder County, e.g., pale moonwort (*Botrychium pallidum*);
9. Species/communities whose populations in the County that are vulnerable to threats¹² affecting their populations either directly or indirectly, e.g. limber pine (*Pinus flexilis*);
10. Species/communities that have a disproportionately large effect on the diversity within the ecosystem(s) they inhabit, e.g., montane riparian forests such as quaking aspen/thinleaf alder (*Populus tremuloides* / *Alnus incana*) forest – G3/S3;
11. Species/communities that are either naturally rare¹³, at the edge of their range in Boulder County, or are isolated or imperiled, e.g., black spleenwort (*Asplenium adiantum-nigrum*) – G5/S1, montane willow carrs, such as *Salix bebbiana* shrubland – G3?/S2, and alkali wetlands such as *Suaeda calceoliformis* herbaceous vegetation – GU/S2;
12. Species/communities that support sensitive wildlife, e.g., Western Great Plains herbaceous vegetation (*Andropogon gerardii* – *Schizachyrium scoparium*), dominated by big and little bluestem, are two native host plants for the imperiled butterfly the Arogos skipper (*Atrytone arogos*) – G3G4/S2.

¹¹ Species/communities endemic to Boulder County indicates a species occurring only in Boulder County and in an adjacent county or counties.

¹² Direct or indirect threats to the stability of species populations or communities include disturbances such as climate change, disease, residential or commercial development, fire suppression, mechanical forest thinning, prescribed fire, etc.

¹³ Species or communities that are “naturally rare” normally occur in low abundance throughout their range. While their populations may be stable, species that are rare on the landscape are more vulnerable to extirpation compared to species with large populations.

Updated Rare Plant Areas and Significant Natural Communities Map

The Updated Rare Plant Areas and Significant Natural Communities map incorporates multiple GIS vegetation databases, as well as information and data provided by local experts and agencies. The areas designated on the map are a representation of plants and plant communities derived from currently available digital data. Much of the data is broadly represented and unlabeled in an effort to protect sensitive species and communities. In some cases, the data is generalized to protect rare plant species locations.¹⁴

The Rare Plant Areas and Significant Natural Communities shown on the map are derived from the following GIS sources:

- BCPOS Vegetation mapping (BCPOS 2013)
- BCPOS Forestry mapping (BCPOS 2013)
- CNHP EOR Data (CNHP 2008)
- OSMP Vegetation mapping (OSMP 2013)
- RMNP Vegetation mapping (DOI, RMNP 2005)
- U.S. Forest Service mapping (USFS 2005)
- International Tree Ring Databank (NOAA 2013)

The Plants SSC List and the Rare Plant Areas and Significant Natural Areas Map are intended to comprehensively document Boulder County species and communities as they exist today in order to provide guidance to land use and resource management decision-making in Boulder County. Only species or communities known or suspected to occur in Boulder County or known or suspected to occur in adjacent counties with the potential to repopulate Boulder County are listed on the Plants SSC List (CNHP 2013a, 2013b, 2013d, 2009, NPS 2010, USFS 2013). Neither these designations nor CNHP rank codes provide any explicit legal status. Of the 234 plant species and communities on the Plants SSC List, two species, Ute ladies'-tresses (*Spiranthes diluvialis*) and Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*), are federally listed as threatened or endangered, and one species, budding monkeyflower (*Mimulus gemmiparus*), is a candidate for federal listing. Federal status indicates legal status of the species as assigned by the U.S. Fish and Wildlife Service under the United States Endangered Species Act (ESA).

¹⁴ In order to protect the locations of rare plant areas, the Rare Plant Areas and Significant Natural Communities map includes larger boundaries around rare plant sites. Areas containing groups of rare plants include a buffer zone crucial to the preservation of the rare plant species. Although specific plant occurrences are included within these sites, the information is not detailed enough to endanger specific plant species or associated sites. Further detail of sensitive information will only be released as approved by a representative agency.

Considerations for Species and Communities in the Forested Upper Elevations of Boulder County

The areas composed of these species discussed below are included on the Rare Plant Areas and Communities Map for the reasons stated below.

Old-growth forests, especially on the Front Range of Colorado, are a limited ecosystem component due to previous management and use, and changes to disturbance regimes. In the context of this plan, the identified old-growth forests are components of the landscape that may warrant restoration or protection to maintain structure and function. It is critical that a restoration framework be developed to provide and sustain old-growth tree components at all spatial scales. Old-growth components provide a number of ecosystem services—plant and animal habitat, biodiversity, carbon sequestration, hydrologic function, high-quality wood products, aesthetics, and spiritual values. Old-growth structure includes old trees, dead trees (snags), downed wood (coarse woody debris), and structural diversity (Reynolds et al. 2013).

Aspen (*Populus tremuloides*) in pure or dominant stands are concentrated areas of high biodiversity and ecosystem function. Aspen are an important early successional forest type, providing wildlife forage and high plant diversity. Aspen is the only widespread deciduous tree species in the intermountain West, covering 10% of the forested landscape yet providing a disproportionate amount of habitat for a diversity of plant and animal species. The high-quality habitat ascribed to aspen has generally been associated with pure aspen stands, and managers and ecologists are concerned about the effects that conifers and elk may have on this valued forest type (Kaye et al. 2005). The progression of forests through successional stages, increase of Sudden Aspen Decline (SAD) and climate change make protection and maintenance of large aspen stands and clones a high priority, especially in the absence of natural, large scale disturbances which are necessary for providing areas where new aspen stands or clones can establish or regenerate.

High elevation five-needle pines, specifically limber pine (*Pinus flexilis*) and Rocky Mountain bristlecone pine (*Pinus aristata* Engelm.) are especially impacted by white pine blister rust (*Cronartium ribicola*), climate change, and to a lesser degree, mountain pine beetles (*Dendroctonus ponderosae* Hopkins). Although climate change alone could render many presently occupied habitats unsuitable for five-needle pines, blister rust and other disturbances can contribute to population decline and ecosystem disruption. Much of current management and research is directed toward producing pines with inherited resistance to blister rust. In regions such as the southern Rocky Mountains where blister rust is a more recent arrival and hazard varies by forest and site, protecting biodiversity values is the chief objective. For high-elevation species such as limber pine, [researchers] advocated immediate, proactive intervention to facilitate five-needle pine reproduction and natural selection for resistance and other adaptive traits (Geils et al. 2010).

In addition, bristlecone pine has been designated on the Plant SSC List because the current species distribution is largely limited to southern Colorado, despite apparently suitable habitat to the north. This distribution may reflect a dependence on summer monsoons, restricting it from occupying higher

elevation sites in northern Colorado (Figure 6, Schoettle 2004). The bristlecone pine in Boulder County reflects the northernmost extent of its distribution range, and it should be treated as a rare plant.

Balsam poplar (*Populus balsamifera*) is native to the montane and subalpine lifezones in Colorado, but is an uncommonly occurring species on the Front Range (Weber, Wittmann, 2012). The presence of the species here along the Front Range requires careful considerations when undertaking new management action or direction.

Threats and Successes in the Conservation of Native Plants and Plant Communities

Since its adoption in 1978, the Boulder County Comprehensive Plan has included goals and policies intended to guide the protection of rare plants and plant communities in the county, along with the unique and valuable native ecological systems they are a part of. Even so, human activities such as development, road construction and maintenance, the introduction and expansion of invasive weeds, fire suppression, and recreational use, in addition to climate change, have altered and continue to threaten the health and integrity of native plants and plant communities. Such detrimental effects on these resources include a reduction of plant population sizes, a reduction of the number of populations, and a decrease in the overall biodiversity at each site. Over time, pressures and disturbances like these also decrease the resilience of native plants and plant communities to natural disturbance such as wildfires, insects, and disease, threatening the viability of these ecological systems as a whole.

While threats to the viability of native plant species remain, guidance provided in successive updates of the BCCP, along with the acquisition and management activities of the County's Parks and Open Space program and the efforts of other public land managers, have been cumulative and resulted in increased conservation of important areas of rare plants and large areas of rare plant communities within Boulder County. In addition, Boulder County's long history of botanic investigation and scientific research continues to produce a wealth of knowledge about local plant species and communities, informing how best to manage and protect these resources. Through updated RPA and SNC definitions, creation of a SSC List for rare plants and plant communities, and an updated RPA and SNC map, the 2013 BCCP is a continuation of on-going protection efforts that are intended to best reflect current knowledge, changing threats, and to ultimately promote the county's land stewardship ethic described by the BCCP.

WETLANDS AND RIPARIAN AREAS

Introduction

The 2013 ERE Update recognizes the importance of all wetlands and riparian areas in Boulder County. Protecting healthy, highly functional wetlands and riparian areas directly contributes to human wellbeing, to overall environmental health, and to self-sustaining natural systems in Boulder County. In an effort to protect and enhance wetlands and riparian areas, the physical features as well as the ecological processes have been considered. As such, the Wetland and Riparian Areas designated representationally on the Wetland and Riparian Areas Map include the aquatic resource as well as a transition area (or buffer area) between the designated resource and non-designated upland environment.

These designations recognize the importance and value of preserving and protecting sufficient area to support the myriad of ecological processes and functions that wetland and riparian systems provide in the county. These functions include: providing important wildlife habitat, improving water quality through sediment and nutrient filtering, protecting against high water events, and creating recreational opportunities. These areas are best preserved and protected by reducing detrimental inputs such as, excessive sediment, fertilizers, petroleum products, as a result of land use practices adjacent to and within wetlands and riparian areas. The Update recognizes the importance of protecting wetlands and riparian areas by carrying forward the historical intentions of past comprehensive plans and by updating relevant goals, policies, and resource designations to reflect current knowledge and recommended practices for the protection of wetlands and riparian areas.

Among Boulder County's mainly semi-arid ecosystems, wetlands and riparian areas are unique in terms of plant biodiversity and wildlife abundance. They provide important ecological services contributing to healthy, functioning ecosystems including wildlife travel corridors, stream bank stabilization, groundwater recharge, flood buffering, and filtration of sediments and chemicals. Wetlands and riparian areas are also vital to a majority of wildlife species' lifecycles. Riparian areas frequently contribute to stream habitat quality through shading, water quality filtering, and the contribution of organic matter for stream food chain support (CDOT, CPW 2003). Healthy wetlands and riparian areas enable communities to protect themselves from hazards associated with climate change, such as intense storms, frequent flooding, snowmelt timing and volume changes, and drought effects (Environmental Law Institute 2008).

Historically wetland loss was predominantly attributed to filling for agricultural purposes. Today wetlands are under threat from multiple causes such as vegetation removal for croplands and forestry purposes, altered hydrology for water holding (e.g., reservoirs), grazing, invasive plant species (e.g., teasel, purple loosestrife), residential and commercial development, and recreation.

Causes of reduction in the quality of riparian areas are similar to that of wetlands, e.g., vegetation removal, invasive species establishment (e.g., Russian olive, Canada thistle), and altered hydrology caused by development. As a result of these disturbances and changes in the hydrologic regime, most of Boulder County's river and stream systems no longer retain the natural flooding cycles that support native species found in undisturbed riparian systems.

Important Characteristics of Wetlands and Riparian Areas

The Update describes wetlands as lands transitional between terrestrial and aquatic systems where the land is covered by shallow water or soils are saturated during the growing season. Wetlands can be found adjacent to ponds and lakes, near rivers and streams or isolated in low lying areas or in areas where the soil creates a perched water table. These areas can be recognized by the vegetation, soil characteristics and presence of standing water or saturated soil. Wetlands have high biodiversity, are relatively rare, provide unique wildlife habitat, filter water, and buffer floods. A variety of wetlands occur in Boulder County including marshes, wet meadows, seeps, springs, fens, alkaline or mineral flats, and riparian areas (CNHP 2013c). These different wetland types possess unique and critical biological functions.

The ERE Overview narrative describes a riparian area as "a unique combination of terrestrial plant communities and aquatic systems associated with flowing water that provide unique habitat and important movement corridors for wildlife" (ERE 2013). Boulder County's riparian areas include cottonwood galleries, willow and other mesic shrublands, and mesic grasslands. Riparian areas are generally linear bands of trees, shrubs, and herbaceous vegetation that occur along streams and ditches and that support plant communities and soils that differ from adjacent upland vegetation and soils. Riparian areas enhance hydrologic functions of waterways (e.g., they recharge ground water through infiltration, filter sediments and chemicals, reduce erosion of water flow and dissipate flow energy, stabilize streambanks, and they slow evaporation).

The waterways in Boulder County that support riparian vegetation have different hydrologic periods and tend to have smaller floodplains in the higher elevations than on the plains. These flowing bodies of water include ephemeral streams, intermittent streams, perennial streams, and ditches. An ephemeral stream flows briefly in response to precipitation and has a channel that does not contact groundwater (EPA 2008). An intermittent stream flows continuously at certain times of the year such as when it receives water from a spring, groundwater source or a surface source such as melting snow (EPA 2008). A perennial stream flows year-round and is considered a permanent stream (EPA 2008). Ditches may be natural channels that were altered to transport water more directly or they may be man-made. Ditches can be piped, channeled or lined with hard surface material or unlined. Boulder County's ditches include canals, culverts, and trenches and are used for water transport, drainage, irrigation, gravel mining, and power generation.

Designation Criteria for Wetlands and Riparian Areas

Although Boulder County does not have regulatory authority over wetlands and riparian areas the County recognizes and uses the same features and characteristics used by Federal agencies such as the Army Corps of Engineers (USACE) and the (USFWS 1993) to identify and designate wetland and riparian areas.

Because certain wetlands are regulated by the federal government, federal regulatory agencies such as the Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE), and the U.S. Fish and Wildlife Service (USFWS) are guided by technically detailed wetland definitions for regulatory purposes. Although wording varies, regulatory definitions generally recognize three wetland elements: wetland vegetation, wetland soil, and wetland hydrology.

Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes (wetland plants); (2) the substrate is predominantly un-drained hydric soil; and/or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (USFWS 1993).

Wetlands Designation Criteria

- 1) Areas with federal status, i.e., jurisdictional wetlands as defined by the United States Army Corps of Engineers (USACE).
- 2) Wetlands that are also designated as Critical Wildlife Habitats (CWHs).
- 3) Wetlands that include Significant Natural Communities (SNCs) or support critical plant associations (e.g., fens, willow carrs).
- 4) Wetlands that are within or include a Rare Plant Area (RPA).
- 5) Wetlands created by human activities, such as reservoirs, that function as natural wetland systems.
- 6) Areas with hydrological and/or ecological evidence of past wetlands.

Riparian Areas Designation Criteria

- 1) Areas directly adjacent to perennial, ephemeral, and intermittent streams.
- 2) Areas that enhance hydrologic functions of waterways (e.g. they recharge ground water through infiltration, filtrate sediments and chemicals, reduce erosion of water flow and dissipate flow energy, stabilize streambanks, and slow evaporation).
- 3) Riparian areas with known federally threatened and endangered (T&E) species, (e.g., Ute's Ladies-tresses (*Spiranthes diluvialis*) and its potential habitat).
- 4) Riparian areas adjacent to stream reaches recognized by Colorado Division of Parks and Wildlife (CPW) as having importance to native aquatic species conservation.
- 5) Riparian areas designated as Critical Wildlife Habitats (CWHs).

- 6) Riparian areas that include Significant Natural Communities (SNCs).
- 7) Riparian areas that include or are within a Rare Plant Area (RPA).
- 8) Man-made areas that function as natural riparian areas (e.g. ditches).
- 9) Areas along streams that show evidence of historically being riparian areas (e.g., oxbows).

The Importance and Function of Wetland Buffer Areas

The area of habitat where the transition from wetland vegetation to upland vegetation occurs is very important. This transition area is commonly referred to as the wetland buffer and the adequacy of its size is one of the most important factors in determining its effectiveness at providing the protection of multiple biological functions. Effective sizes of wetland buffer areas vary widely depending on the site and the specific functions anticipated for a particular wetland buffer area. Such functions include sediment removal and erosion control, excess nutrient removal, moderation of storm water runoff, control of water temperature, maintenance of habitat diversity, and wildlife species distribution and diversity. Wider wetland buffers provide more effective protection to sensitive resources from potential anthropogenic degradation.

The Wetland and Riparian Area Map utilizes wetland buffers that are representational in nature and set at 100 feet around wetland and riparian areas and 300 feet around wetland and riparian areas that are additionally considered Critical Wildlife Habitats. This additional buffer width around Critical Wildlife Habitats provides for the protection of well-developed vegetation structure that helps support aquatic species, movement corridors and habitat, both of which allow wildlife species to carry out essential life processes for which these Critical Wildlife Habitats were designated.

The wetland buffer areas on the Wetland and Riparian Areas Map do not preclude or nullify regulatory buffers set by other agencies such as the City of Boulder Open Space and Mountain Parks, United States Forest Service and the US Army Corps of Engineers.

Sources and Methods for Representing Designated Wetlands and Riparian Areas on the Map

The Wetlands and Riparian Areas Map utilizes the most currently available geospatial data to display the areas in Boulder County that represent the important ecological features of wetlands, riparian areas, and waterways. It is not intended to be exhaustive or complete.

The Wetlands and Riparian Areas designated on the map are derived from the following GIS sources:

- BCCP Critical Wildlife Habitats (BCPOS 2013)
- Colorado Natural Heritage Program's Wetland Element Occurrence Records (CNHP 2008)
- CNHP National Wetland Inventory [Provisional data] (unpublished 2013)¹⁵

¹⁵ The Colorado Natural Heritage Program National Wetlands Inventory (CNHP_NWI) data is provisional. This data is pending official publication and is subject to change (CNHP NWI 2013d).

- BCPOS Vegetation Mapping (BCPOS 2013)
- BCPOS Wetland Inventory (BCPOS 2012)
- Rocky Mountain National Park (RMNP) Vegetation Mapping (BOR, RMNP 2005)
- Colorado Parks and Wildlife (CPW) Riparian Area mapping (CPW 1997)
- Wright Water Engineers Inventory of Boulder County (WWE 1993)

Designated areas were identified by selecting only the data from the above sources that was consistent with the designation criteria for Wetlands and Riparian Areas. Where datasets had conflicting information, either the most recent data was used or the data known to be the most accurate (e.g., field GPS data). The resulting data was merged into a single dataset based on respective resource type and then represented on the map with a distinct color for Wetlands and a distinct color for Riparian Areas.

Not all of Boulder County's wetlands, riparian areas, and waterways appear on the map. For instance, perennial streams are mapped, but not all intermittent and ephemeral streams are on the map. The mapping data available for riparian areas is much more extensive in the plains than higher elevations because of the data provided by Colorado Parks & Wildlife (CPW 1997). Additionally, some mapped areas may appear disjointed, while some features may appear underrepresented, e.g., wetlands occurring in the lower montane. This is due solely to extent of the currently available digital data.

The Wetland and Riparian Areas dataset and mapping may be updated periodically as more accurate or up-to-date data becomes available. The map is not intended to be an exhaustive representation of wetland and riparian resources in the county. Rather, it is illustrative and intended to provide some general guidance about the location of important resources in the county. Consistent with the Goals and Policies of the Environmental Resource Element, and as set forth in the Boulder County Land Use Code, decisions regarding certain land use proposals and resource management may be reviewed on a case-by-case basis; such processes may also consider if wetland and riparian resources beyond those shown on the map could be affected.

Overall, these updates to wetland and riparian area protections through designation in the ERE are intended to best reflect changing threats and current knowledge of these resources and This has been done by recognizing all wetlands and riparian areas as important, updating wetlands and riparian area documentation with current digital data, and modernizing wetlands and riparian areas Goals and Policies in the ERE. Ultimately, these updates serve to additionally support the land management ethic of Boulder County.

SECTION III. LANDSCAPE-SCALE DESIGNATIONS

ENVIRONMENTAL CONSERVATION AREAS

Even with the current level of public land in the County, along with strong open space programs, there are animal and plant community shifts occurring which are the result of blending together human use and more “natural” landscapes. Extirpated and declining animal species tend to be wide-ranging, ecologically specialized or human sensitive. New or increasing species are typically habitat generalists and compatible with human landscapes. Conservation at the course or landscape scale emphasizes the need to deter habitat fragmentation caused by the cumulative effects of urban developments, roads, recreational uses and an overall increased human presence at the landscape in order to better support and perpetuate these species that are in decline.

Ecosystem management and sustainable land use planning in the county must recognize the largest remaining, relatively natural, restorable or agricultural landscapes that function as good wildlife habitat and plant communities. This appears to be the best course of action for maintaining wide-ranging animal species, native plant communities and natural ecological processes while limiting adverse impacts from developing landscapes such as loss of human-sensitive species and increases in exotics and habitat generalists. A strategy that identifies the richest sites, protects them with adequate buffers, and establishes corridors of connectivity between sites should be the framework for an ecosystem management plan. Decisions concerning new housing development, land and easement purchases, trails and forest management can be made within this framework.

Methods of Identifying Environmental Conservation Areas

Environmental Conservation Areas (ECA’s) are large and relatively undeveloped areas of the County that possess a high degree of naturalness, contain high quality or unique landscape features, and/or have significant restoration potential. Their size, quality and geographic location make them an important tool for combating the effects of habitat fragmentation. The following list presents the primary factors used to evaluate the selection of potential environmental conservation areas:

- 1) Naturalness: Relatively undeveloped landscapes offer greater opportunities for maintaining natural processes, minimizing landscape fragmentation caused by development and roads;
- 2) Quality and Uniqueness: This includes high quality plant communities such as native prairie or old-growth forests, and unique landscape features such as elk winter concentration areas and winter raptor concentration areas;
- 3) Size: Bigger is better. Larger areas are more capable of supporting natural disturbance regimes, meeting the needs of wide-ranging animals and protecting a mosaic of landscapes;
- 4) Restoration Potential: The ability of a site to be restored to a native plant community and/or good wildlife habitat.

In order to further assess potential environmental conservation areas, the following information sources and maps were reviewed:

- 1) Colorado Natural Heritage Program Element Occurrences: Information and locations of element occurrences (rare plants, plant communities and animals) for the County were obtained.
- 2) Colorado Division of Wildlife (i.e. Colorado Parks and Wildlife (CPW)), Wildlife Resource Information System (WRIS) Maps: The central and northern regions of the CDOW generated WRIS maps for a host of animal species. The most important mapped information was for concentration areas of Elk, Bighorn Sheep, Turkey and Prairie Dogs as well as Elk movement corridors. Current mapping of CPW Species Activity Maps (SAM) were obtained and referenced for a suite of wide-ranging species.
- 3) Undeveloped Landscapes: Roadless areas, areas of low road density, areas with little or no residential development and other relatively undeveloped landscapes were mapped. GIS mapped images were referenced depicting existing development and potential development based on parcel size, as well as maps from the U.S. Forest Service displaying roadless areas of a minimum size of 500 acres. Maps of known trails from city, county, and USFS data were reviewed to assess density and type of recreational impacts. Topographic maps and recent aerial photographs were also reviewed. When not part of other mapped biological and ecological significant areas, undeveloped landscapes were considered for inclusion within boundaries of Environmental Conservation Areas.
- 4) Boulder County Comprehensive Plan Environmental Resources Maps: Mapped designations of significant environmental resources were important consideration for defining the uniqueness and quality of an environmental conservation area.
- 5) Old-growth Forests, Native Prairie, Wetlands and Riparian Habitat: Several sources of mapped information were used in evaluating unique vegetative qualities. Old-growth forests on National Forest lands within the County were mapped by the USFS. Native prairie and unplowed prairie sites were mapped by NRCS and evident on recent aerial photography. Non-irrigated farmland was also evident from aerial photography and was a consideration in the potential of a site to be restored to native prairie. Mapped wetlands on private property which were evaluated by the County. USFWS Wetland Inventory Maps along with a high elevation willow carr inventory conducted by the Boulder County Nature Association (1985) were the best sources of information regarding wetlands on USFS lands. An inventory of plains riparian habitat conducted by BCPOS and BCNA (1988) mapped and evaluated high quality sites.

Criteria for Designating Environmental Conservation Areas

Using the above information, ECA's were mapped using the following criteria to guide their location, size and shape:

- 1) They should be centered on undeveloped landscapes and include high quality and unique landscape components as revealed in the biological and ecological assessment. ECA's should be a minimum of 2,500 acres in size in order to be effective management units.
- 2) They should cover all lifezones and habitat types.
- 3) Boundaries of ECA's are influenced by the following:
 - a. The larger the ECA, the greater probability of meeting the needs of wide-ranging species, allowing natural disturbance regimes and minimizing adverse impacts from development. ECA's should include all contiguous undeveloped land and nodes of high quality or unique landscape features.
 - b. Boundaries should avoid areas with significant existing development.
 - c. The shape should minimize fragmentation and edge effects.
 - d. The shape and geographic location of ECA's should facilitate connectivity within the regional landscape and to other ECA's.

Connectivity Between Environmental Conservation Areas

Environmental Conservation Areas must function as part of an integrated system of wildlife habitat and plant communities. Wide-ranging animals and other mobile species will need to move throughout the landscape of the County. ECA's function as source areas for species that find optimal habitat within undeveloped landscapes. Individuals of these species will generally migrate out of the ECA and occupy suitable, but less than optimal, areas. If a major disturbance or disease eliminates a particular species from an ECA, individuals from other source areas will need a connective pathway to recolonize the vacant habitat. Maintaining connectivity among ECA's is also important for preserving genetic exchange among populations of species using these areas. Genetic exchange is important for maintaining diversity and resiliency of isolated populations.

Three types of habitat connectors, or movement corridors, provide the landscape connectivity among Environmental Conservation Areas. Riparian and stream ecosystems provide one type of movement corridor by serving as significant migration routes, hiding cover and wildlife habitat. Large-mammal migration corridors are a second type of important habitat connectors, particularly for mountain ecosystems. The third type of habitat connector consists of other undeveloped corridors and land not within ECA's which provide a matrix of dispersal and movement options for wildlife.

The County should work to protect riparian ecosystems and large-mammal movement corridors. Development within other parts of the County should be evaluated to determine impacts on connectivity between environmental conservation areas.

Land Use Considerations Near Environmental Conservation Areas

One way for ECAs to be Land use and resource management decisions on lands adjacent to ECA's should be low intensity and provide a degree of buffering between the ECA and high intensity land uses that may exist throughout the county. In essence, there should be a gradient of land use intensity that diminishes from the edge towards the core of an ECA. A goal is to minimize the many problems associated with high intensity development adjacent to relatively natural areas, the problems that plague many of our national parks.

Table 2: Boulder County Environmental Conservation Areas (ECA).
See *Appendix I* for full description of each ECA.

ECA #	Name
1	Indian Peaks
2	North St. Vrain
3	South St. Vrain/Foothills
4	Walker Mountain
5	Fourmile Creek/Bald Mountain
6	Winiger Ridge
7	Hawkin Gulch/Walker Ranch/Upper Eldorado Canyon
8	Boulder Mountain Park/South Boulder
9	Rabbit Mountain
10	Table Mountain
11	Boulder Valley Ranch/Beech Open Space
12	White Rocks/Gunbarrel Hill
13	East County
14	Magnolia

HIGH BIODIVERSITY AREAS

High Biodiversity Areas (HBAs) are locales that have a concentration of rare environmental resources. If managed well, they represent the greatest opportunities for preserving specific aspects of Boulder County's natural heritage. The boundaries of HBAs encompass those lands that provide the habitat and ecological processes upon which the resources depend for their continued existence. These areas have been identified and ranked -- by the CSU Natural Heritage Program -- as having *outstanding significance* (B1), *very high significance* (B2), or *high significance* (B3).

The source of this information is the *Survey of Critical Biological Resources in Boulder County, Colorado 2007-2008*, completed in 2009 by the Colorado Natural Heritage Program
http://www.cnhp.colostate.edu/download/documents/2009/BoulderCoReportFINAL_6-26-2009.pdf

Table 3: LIST OF HIGH BIODIVERSITY AREAS IN BOULDER COUNTY

B1: OUTSTANDING BIODIVERSITY SIGNIFICANCE

- Rabbit Mountain
- Red Hill south of Lyons
- Saint Vrain Mountain

B2: VERY HIGH BIODIVERSITY SIGNIFICANCE

- Bald Mountain
- Boulder Foothills
- Button Rock Mountain
- Coffintop Mountain
- Doudy Draw
- Fairview Peak
- Gordon Creek
- Indian Lookout Mountain
- Lykins Gulch
- Marshall Mesa
- Mount Sanitas Hogbacks
- Niwot Ridge
- North Boulder Grasslands
- North Saint Vrain
- Shanahan Grassland
- South Boulder Creek
- South Saint Vrain
- Springdale
- Steamboat Mountain
- Table Mountain

B3: HIGH BIODIVERSITY SIGNIFICANCE

- Beaver Creek
- Betasso
- Boulder Creek
- Ceran Saint Vrain
- Chittenden Mountain
- Coal Creek below Rocky Flats
- Como Creek
- Coney Creek
- Copeland Willow Carr
- Delonde Creek
- Duck Lake above Ward
- Gold Hill at Switzerland Trail
- Grassy Top
- James Creek
- Lake Albion
- Left Hand Canyon
- Lost Lake South?
- Middle Boulder Creek at Eldora
- Middle Saint Vrain Creek at Peaceful Valley
- North Beaver Creek
- North Boulder Creek at Caribou Ranch
- Roaring Fork
- The Ironclads
- Tumblesom Lake
- Winiger Gulch

NATURAL AREAS

Natural Areas are physical or biological areas that are unique and important to the natural heritage of the county. Each area either retains or has reestablished its natural character, although it need not be completely undisturbed. It typifies native vegetation and associated biological and geological features and provides habitat for rare or endangered animal or plant species or includes geologic or other natural features of scientific or educational value.

Natural Areas may be designated for meeting any one of the following criteri:

- Natural features which significantly illustrate geologic processes
- Significant fossil evidence of the development of life on earth
- An undisturbed ecological community maintaining itself under prevailing natural conditions
- An ecological community significantly illustrating the process of succession
- A habitat supporting an endangered, rare, endemic or restricted species
- A relict flora or fauna
- A seasonal haven for concentrations of native animals
- An area containing significant evidence illustrating important scientific discoveries
- A habitat for species with unique adaptations for survival
- A study site for the biology of a particular taxonomic group
- An area demonstrating well-developed, diverse or unusual community structure

Note: Some Natural Areas may also be State Natural Areas and designated as such by the Colorado Natural Areas Program.

Table 4:

NATURAL AREAS (New or Re-drawn)	South Draw	North Grasslands	North St. Vrain	Niwot Ridge	Red Hill	Foxhills Sandstone (three sites)	Boulder Mountain Park	South Boulder Creek	Rabbit Mountain
	1400	4300	19,700	6300	9200	35	7401	1193	7000
Criteria									
Natural features which significantly illustrate geologic processes		X		X	X	X	X		X
Significant fossil evidence of the development of life on earth						X			
An undisturbed ecological community maintaining itself in natural conditions	X	X	X	X	X		X		X
An ecological community significantly illustrating the process of succession			X						
A habitat supporting an endangered, rare, endemic or restricted species	X	X	X		X		X	X	X
A relict flora or fauna							X		
A seasonal haven for concentrations of native animals			X		X			X	X
Area with significant evidence illustrating important scientific discoveries				X	X				
A habitat for species with unique adaptations for survival				X		X			
A study site for the biology of a particular taxonomic group					X				
Area demonstrating well-developed, diverse or unusual community structure	X	X	X	X	X	X	X	X	X
Area designated by federal or state, meeting a criterion above			X	X				X	
Existing natural areas with no proposed changes:									
Tallgrass Prairie, Copeland Willow Carr, White Rocks									

NATURAL LANDMARKS

Natural Landmarks are prominent landscape features that distinguish a specific locality in Boulder County. They are important for the views they afford, their value as scenic vistas and backdrops, and the intrinsic value they hold as wildlife or plant habitats, natural areas, park and open space preserves, and open land areas. However, the single criterion for designation shall be its visual and scenic prominence as a landscape feature. They provide a record of Boulder County’s natural heritage. No updates are proposed to Natural Landmarks in this update.

Landmarks Objectives

The chief objective of the goals and policies is to protect and conserve unique or critical environmental resources through the encouragement of compatibility between proposed development and designated Natural Landmarks. Additional objectives include:

- To mitigate negative impacts to Landmarks and insure proposed development does not harm, degrade, or impair the purposes or values for which the Natural Landmark was designated;
- To provide assistance, incentives and/or regulations for land owners to maintain Natural Landmarks.

Table 5: NATURAL LANDMARKS OF BOULDER COUNTY:

1.	Big Elk Park	Sec.4, NW4 of 9, 3N72W
2.	Bighorn Mountain	W2 of Sec.7, 1N71W
3.	Boulder Falls	NW4 of Sec.36, 1N72W
4.	Buckingham Park Hogback	SE4 of Sec. 23, NE4 of Sec.26, 2N71W
5.	Coffintop Mountain	NW4 of Sec. 28,NE4 of Sec.29, 3N71W
6.	Continental Divide	W of Peak-to- Peak Highway
7.	Deer Ridge	Sec. 17 & 18,3Sec. 12 & Sec. 13, 373W
8.	Eagle Rock	NW4 of Sec. 6, 1S71W
9.	Flatirons	SE4of Sec. 1, Sec. 12,1S71W
10.	Grassy Top	SE4 of Sec. 12, 1N73W
11.	Haystack Mountain	NW4 of Sec. 27 E2 of Sec.28, 2N70W
12.	Hygiene Hogback	SE4 of Sec.4,NE4 of Sec. 9, 2N70W
13.	Hygiene Plains Cottonwood	SW4 of Sec. 36, 3N70W
14.	Indian Lookout Mountain	S2 of Sec. 13, N2 of Sec. 24, 3N71W
15.	Indian Mountain	Sec. 4, 5, 8, 9, 17, 3N70W
16.	Ironclads	E2 of Sec. 6, 2N7 2W
17.	Miller Rock	SE4 of Sec. 9, 2N72W
18.	Porphyry Mountain	NW4 of Sec. 19, 2N71W
19.	Profile Rock	NE4 of Sec. 34, 1N71W
20.	Red Rocks	SW4 of Sec. 25, 1N71W
21.	Steamboat Mountain	W2 of Sec. 7,3N70W, E2 of Sec.12, N71W
22.	Sugarloaf Mountain	N2 of Sec. 26, 1N72W
23.	Table Mountain	Sec. 9, 16, 17, 20, 21, 2N70W
24.	Twin Sisters Peak	SW4 of Sec. 7, N2 of Sec. 18, 1S71W
25.	Valmont Dike	SE4 of Sec. 22, S2 of Sec.23, 1N70W
26.	Winiger Ridge	W2 of Sec. 19S71W, S2 of Sec.13 & 14 and N2 of Sec. 22,23, & 24, 1S72W

LITERATURE CITED

- Colorado Conservation Trust. 2012. Colorado's rapidly increasing population: Impacts on our land and water. <http://coloradoconservationtrust.org/wp-content/uploads/Colorado-Population-Growth-Briefing-Memo.pdf>. Accessed on 10/31/2013.
- Colorado Parks and Wildlife. Riparian and wetland mapping page. [online] URL: <http://ndis1.nrel.colostate.edu/riparian/Riparian.htm>.
- Kaufmann, M.R., T.T. Veblen, W.H. Romme. 2006. Historical fire regimes in Ponderosa Pine forests of the Colorado Front Range, and recommendations for ecological restoration and fuels management. *In* Front Range Fuels Treatment Partnership Roundtable, Findings of the Ecology Workgroup. [online] URL: <http://frftp.org/roundtable/pipo.pdf>.
- Pague, C.A., and L. Grunau. 2000. Conservation planning handbook for the Preble's meadow jumping mouse (*Zapus hudsonius preblei*). Unpublished report to the Colorado Department of Natural Resources.
- Schorr, R. 2007. Preble's meadow jumping mouse trapping at Tom Davis Gulch, Boulder County, Colorado. Survey report submitted to Boulder County Open Space by the Colorado Natural Heritage Program.
- U.S. Census Bureau. BoulderCounty, Colorado QuickFacts. 2008. April 19, 2008. Notes: Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 Census of Population and Housing, 1990 Census of Population and Housing, Small Area Income and Poverty Estimates, County Business Patterns, 1997 Economic Census, Minority- and Women-Owned Business, Building Permits, Consolidated Federal Funds Report, 1997 Census of Governments.
- USFWS. 2004. Preble's meadow jumping mouse (*Zapus hudsonius preblei*) survey guidelines: Revised April 2004. U.S. Department of Interior, Fish and Wildlife Service. Colorado Field Office.

APPENDIX A

GLOSSARY

Aspen Clones: *An individual organism, single tree or small group of trees with the same genetic make-up (BCPOS Forestry 2013).*

Aspen Stands: *A forest cover type where quaking aspen (*Populus tremuloides*) clone or clones are the dominant species.*

Aspen Decline: *Sudden Aspen Decline (SAD) Aspen decline, as generally described, refers to a long-term loss of aspen cover type due to succession under an altered fire regime, often exacerbated by ungulate herbivory of suckers. Sudden aspen decline is distinct from that process for a number of reasons: (a) although both may result in succession to other vegetation types, aspen decline is driven by succession whereas SAD is driven by damage to aspen; (b) SAD occurs on a landscape scale rather than on a stand scale; (c) SAD is rapid, resulting in large areas of mortality in just a few years; and (d) the mortality agents associated with SAD are different from those that typically kill mature aspen in Colorado (Worrall et al. 2008).*

Biodiversity: *The degree of variation of life. This can refer to genetic variation, species variation, or ecosystem variation within an area, biome, or planet.*

Carrying Capacity: *The amount of use that land can support without long-term damage to the resource (BCCP 1989).*

Critical Wildlife Habitat: *Habitat that is vital to the life requirements of species in need of conservation action. Areas designated as Critical Wildlife Habitat (CWH) are considered rare, irreplaceable or difficult to replace, and are essential to the conservation and preservation of wildlife in Boulder County.*

Conifer: *A tree that produces cones, such as a pine, spruce, or fir tree.*

Ditch: *A ditch is a natural or man-made linear waterway dug in the ground that may or may not be lined. In Boulder County, ditch types include main ditches, culverts, channels, and trenches and are used for water transport, drainage, irrigation, gravel mining, and water power.*

Ecosystem: *An interacting system of living organisms and their environment, each influencing the existence of the other and both necessary for the maintenance of life (BCCP 1989). Abiotic and biotic factors, the interacting biological communities they support and the complex surrounding physical environments. It is the fundamental unit of ecology (BCPOS Forest Policy 2010).*

Ecosystem Health: *Ecosystem condition can vary as a result of fire, flooding, drought, extinctions, invasive species, climate change, mining, fishing, farming, logging, oil spills, and a host of other reasons. There is no universally accepted benchmark for a healthy ecosystem, rather the apparent health status of an ecosystem can vary depending upon which health metrics are employed in judging it and which societal aspirations are driving the assessment.*

Ecosystem Management: *A process that aims to conserve major ecological services and restore natural resources while meeting the socioeconomic, political and cultural needs of current and future generations.*

Ecotone: The transition zone between two biotic communities, such as between the Ponderosa pine forest and the mixed conifer forest.

Endangered Species: Any species or subspecies which is in danger of extinction throughout all or a significant portion of its range (BCCP 1989).

Endemic: Extremely limited distribution and generally confined to only specific locations (BCCP 1989).

Environmental Conservation Areas: Large and relatively undeveloped areas of the County that possess a high degree of naturalness, contain high quality or unique landscape features, and/or have significant restoration potential. Their size and quality make them important areas for wide-ranging animals, human-sensitive species, native plant communities, and ecological processes.

Ephemeral Stream: A stream or portion of a stream which flows briefly in direct response to precipitation in the immediate vicinity, and whose channel is at all times above the groundwater reservoir (EPA 2008).

Extinct: A species which no longer occurs in a natural or free-roaming condition (BCCP 1989).

Extirpated Species: Species for which there is historical documentation, but which no longer occur in Boulder County (BCCP 1989).

Extirpation: (A.K.A. "Local Extinction") The total loss of a species from a particular region. The species continues to exist in other parts of the world.

Habitat: The place where a plant or animal lives. It is composed of the particular set of physical environmental factors such as food, vegetative cover, water and space which are required for existence (BCCP 1989).

Headwater: The low order, small stream at the top of a watershed, when viewed at the 1:100,000 map or image scale; may be perennial, intermittent, or ephemeral (Nadeau and Rains 2007).

Indicator Species: A species so strictly associated with particular environmental conditions that its presence is indicative of the existence of those conditions (BCCP 1989).

Intermittent Stream: A stream where portions flow continuously only at certain times of the year, for example when it receives water from a spring, groundwater source or from a surface source, such as melting snow (i.e., seasonal). At low flow there may be dry segments alternating with flowing segments (EPA 2008).

Life Zone: A region, area or belt characterized by similar plant and animal life throughout its extent and distinguished by temperature differences (BCCP 1989).

Limber Pine (*Pinus flexilis*): Limber pine is a five-needle pine that is generally intolerant of shade and can be considered an early seral species. In the state of Colorado the species can typically be found on dry and windy sites such as steep, south facing slopes, ridgetops, and rock outcroppings (Gibson et al. 2008).

Mitigation: Actions taken to avoid, minimize, or rectify the impact of a land management practice.

Mountain Pine Beetle (*Dendroctonus ponderosae*): A tiny black insect, ranging from 1/8 to 3/4 inch in size that bores through a pine tree's bark. It stops the tree's intake and transport of the food and nutrients it must have to stay alive, thus killing the tree.

Natural Areas: A physical and biological area which either retains or has reestablished its natural character, although it need not be completely undisturbed, and which typifies native vegetation and associated biological plant species or includes geologic or other natural features of scientific or educational value (Colorado Natural Areas Act, 36-10-101 et. seq. C.R.S., 1973, as amended) (BCCP, 1989).

Natural Landmarks: Prominent landscape features in Boulder "county that distinguish a specific locality and are important because of the views they afford, their value as scenic vistas and backdrops and their intrinsic values as wildlife habitats, natural areas, and park and open space preserves (BCCP 1989).

Natural Resources: A material substance that occurs in a natural state. Renewable resources include forests, agricultural crops, water and most wildlife; non-renewable resources are in finite quantities and include oil and minerals (BCCP, 1989).

Natural Systems: See Ecosystem

Old-Growth Forest: The concept of old-growth includes multiple spatial and temporal scales, ranging from individual trees to tree groups and patches to landscapes and their development overtime. Definitive characteristics of old growth in the Southwest vary by forest type as a consequence of differences in species composition, tree longevities and sizes, and the characteristic types, frequencies, and severities of disturbances (Reynolds et al. 2013). Attributes, such as coarse woody debris, density of trees and snags, patch size and complex structure; will typically increase as you move up the elevation gradient.

Plant Association: a defined area composed of a characteristic range of species, with a dominant diagnostic species occurrence, habitat conditions and physiognomy. Some definitions describe this as a climax plant community characterized by two or more dominant species. (Dictionary of Ecology, Evolution and Systematics, Lincoln Roger, G. Boxshall, P. Clark)

Plant Community: The U.S. National Vegetation Classification (USNVC) defines a community as an "assemblage of species that co-occur in defined areas at certain times and that have the potential to interact with one another" (Anderson et al. 1998).

Perennial Stream: A stream or portion of a stream that flows year-round, is considered a permanent stream, and for which baseflow is maintained by ground-water discharge to the streambed due to the ground-water elevations adjacent to the stream typically being higher than the elevation of the streambed (EPA 2008).

Rare Plant Area: Are sites that are known to have or have a high likelihood of occurrences of Plant Species of Special Concern (BCCP, 2013).

Rare Species: Species which exist in three or fewer well documented, viable sites; occurs in such small numbers that it is seldom seen or collected regardless of its total area; exists on only one type of habitat that is likely to disappear or change.

Riparian: A specific type of ecosystem which borders a stream or lake.

Riparian Area: Riparian areas are linear bands of trees, shrubs, and herbaceous vegetation along streams and ditches with plant communities and soil moisture that differ from surrounding upland vegetation and soils. Riparian ecosystems are sometimes considered wetlands even though they may not always simultaneously exhibit hydrology, hydric soils, and hydrophytic vegetation characteristics. These areas can reasonably be expected to contribute to the quality of the general stream habitat through shading, water quality filtering, contribution of food items for fish, and the contribution of organic matter for stream food chain support (CDOT, CPW 2003). Boulder County's riparian areas include cottonwood galleries, willow or other mesic shrublands, and mesic grasslands.

Riverine Wetland: Riverine wetlands occur in flood plains and riparian corridors in association with stream channels. Dominant water sources are often overbank flow from the channel or subsurface hydraulic connections between the stream channel and wetlands. However, sources may be interflow and return flow from adjacent uplands, occasional overland flow from adjacent uplands, tributary inflow, and precipitation. At their headwater, riverine wetlands often are replaced by slope or depressional wetlands where the channel morphology may disappear. They may intergrade with poorly drained flats or uplands. Perennial flow in the channel is not a requirement (USACE 1993).

Rocky Mountain Bristlecone Pine (*Pinus aristata*): Rocky Mountain bristlecone pine is a long-lived, five-needle pine that is typically found at higher elevation on dry, windswept sites near timberline (Gibson et al. 2008).

Sensitive Species: Plants or animal species that are susceptible to habitat changes or impacts from human activities.

Significant Natural Community: Significant Natural Communities are areas that are recognized by the presence of a critical plant association that is limited in its distribution and occurrence. These areas have multiple important environmental resources that co-occur and interact. These areas have species and processes that are relatively undisturbed by human actions and currently exist in their natural state. These areas are also referred to as Critical Plant Associations in the Boulder County Land Use Regulations (BCCP 2013)

Species of Special Concern: Species of Special Concern include the flora and fauna in the county whose populations maybe threatened or endangered, locally rare, experiencing long term non-cyclical population declines, isolated or restricted to distinct local habitat types, or native species which have ceased to exist within Boulder County (BCCP 2013).

Threatened Species: Any species or subspecies which, due to small numbers, is likely to become and endangered species within the foreseeable future throughout all or a significant portion of its range (BCCP 1989).

Undetermined Status: A species about which too little is known to accurately determine its status (BCCP 1989).

Wetland: Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes

(wetland plants); (2) the substrate is predominantly un-drained hydric soil; and/or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (USFWS 1993). Boulder County's wetlands include places such as marshes, wet meadows, seeps or springs, fens, mires, hanging gardens, alkaline or mineral flats, and riparian areas (CWIC 2013).

Wetland Buffer: A vegetated transition zone or ecotone between upland and aquatic environments located between the natural resource and the adjacent area of potentially adverse impacts (Castelle et al. 1994).

Wetland Buffer Size: The width of a buffer is one of the important factors determining the effectiveness of a buffer in terms of filtering and buffering aquatic resources from potential anthropogenic degradation. Buffer sizes may vary widely depending on the specific functions anticipated for a particular buffer (e.g., sediment removal and erosion control, excess nutrient removal, moderation of stormwater runoff, moderation of water temperature, maintenance of habitat diversity, and wildlife species distribution and diversity) but generally buffer effectiveness increases with buffer width (Castelle et al. 1994, Washington State 1992).

White Pine Blister Rust (*Cronartium ribicola*): White pine blister rust is a fungus and a rust of pine which, like stem rust of wheat, is in the order Pucciniales. Typical of many rusts, this obligate, biotrophic (requiring a living host) pathogen alternates with very different appearances between a primary host (a leaf rust of *Ribes* as *Cronartium*) and a secondary host (a stem rust of *Pinus* as form-genus *Peridermium*). Blister rust and other disturbances can contribute to population decline and ecosystem disruption (Geils et al. 2010). In Colorado, the fungus can infect all five-needle pines, mainly Rocky Mountain bristlecone pine and limber pine.

Wildlife: All wild mammals, birds, fish, amphibians, reptiles, mollusks, and crustaceans (BCCP 1989)

Wildlife Migration Corridor: Specific, delineated areas of known elk migration were mapped using the best available information from Colorado Parks and Wildlife as well as data based on studies and long-documented expert observations by Boulder County staff and local experts from around the county. These shapes are based on specific and reliable information about the movement patterns of all major elk herds in the County. These areas should also be considered suitable and used by other migratory wildlife in the County. These areas should be treated with the same, if not more, conservation concern as any other Critical Wildlife Habitat area.

APPENDIX B

CHRONOLOGY OF ENVIRONMENTAL RESOURCES ELEMENT UPDATES

1978

BCCP – ERE

- First Edition adopted March 22, 1978

1983

BCCP – ERE

- Amended

1984

- The list of Bird Species of Special Concern in Boulder County was produced.

1986

BCCP – ERE

- Goal, Policies, and Maps updated from the 1978 version.
- Included comprehensive description of each of the Critical Wildlife Habitats.
- Adopted new language defining significant wetlands in the county and included criteria describing significant wetlands.
- Proposed amendments to the ERE text and map: Following a study by the Boulder County Nature Association investigating the status, distribution, and ecological importance of high elevation willow carrs in the county, twenty-five such willow carrs were adopted as Critical Wildlife Habitats.

1994

BCCP – ERE (Memorandum)

- Update to Wetlands component of ERE including text, definition, criteria, and listing changes. Additions to the BCCP goals and policies regarding wetlands. Significant wetland map updated with new information.
- Update to Critical Wildlife Habitat criteria: Primary changes were to recognize, not only Federal and State Threatened and Endangered (T&E) species, but also Federal proposed and candidate T&E species, State Species of Concern, and USFS Region 2 Sensitive Species.
- Update to Species of Special Concern (SSC) list: The list was expanded to be more comprehensive in lieu of the changes made to the criteria mentioned above, and also included recommendations from local subject matter experts and conservation organizations.
- Critical Wildlife Habitat descriptions were updated to reflect changes in the SSC list.
- Updates to ERE text: This included the removal of the species list from the ERE.

1995

BCCP – ERE (Memorandum)

- Adoption of text and map amendments to the ERE regarding Environmental Conservation Areas (ECA), Rare Plant Sites, and Significant Natural Communities.
- Changes to the Goals and Policies of the BCCP – ERE, map, and text concerning Environmental Conservation Areas (ECA): Adoption of the concepts and ideas outlined in the “Ecosystem Plan”, developed by the Boulder County Nature Association.
- Changes to the Goals and Policies of the BCCP – ERE, map, and text concerning Significant Natural Communities:

1999

BCCP – ERE

- Second Edition of the BCCP containing new and updated Goals, Policies, and Maps was adopted. (The ERE remains as it was during the previous amendments in 1995).

2002

BCCP – ERE

- Minor edits to Critical Wildlife Habitat descriptions

APPENDIX C

SUBJECT MATTER EXPERTS

The following subject matter experts were critical in the development of the ERE components. The list is composed of local or regional agency partners, conservation professionals, naturalists, area experts, and colleagues. These experts provided input on or reviewed some or all of the designations in the ERE. Their contributions have greatly improved the quality of the ERE and made development of the existing maps and lists possible.

Name	Title	Agency/Organization
Rich Scully	Botanist	At Large
Ron Wittmann	Botanist	At Large
Dave Steinmann	President, Ecologist	At Large, Professional Wetlands Consulting, Inc.
Patrick Murphy	President, Ecologist	At Large/ECOTONE Corporation
David Buckner	President, Senior Plant Ecologist	At Large/ESCO Associates
Dave Hallock	Consultant, Ecologist/Wildlife Biologist/	At Large/Formerly BCPOS/ Boulder County Audubon Society
Steve Jones	Ecologist	Boulder County Audubon Society
Ann Cooper	At large	Boulder County Nature Association
Janet Chu	At large	Boulder County Nature Association
Dave Hoerath	Wildlife Biologist	Boulder County, Parks and Open Space Department
Michelle Durant	Wildlife Biologist	Boulder County, Parks and Open Space Department
Susan Spaulding	Wildlife Biologist	Boulder County, Parks and Open Space Department
Todd Van Dyke	Boulder County Volunteer Naturalist	Boulder County, Parks and Open Space Department
Dr. Matthew S. Rand	Associate Professor of Biology	Carleton College
Marianne Giolitto	Wetlands and Riparian Ecologist	City of Boulder, Open Space and Mountain Parks
Christian Nunes	Wildlife ecologist technician	City of Boulder, Open Space and Mountain Parks
Heather Swanson	Wildlife Biologist	City of Boulder, Open Space and Mountain Parks
Lynn Riedel	Plant Ecologist	City of Boulder, Open Space and Mountain Parks
Megan Bowes	Plant Ecologist	City of Boulder, Open Space and Mountain Parks
Will Keeley	Wildlife Biologist	City of Boulder, Open Space and Mountain Parks

Denise Culver	Ecologist	Colorado Natural Heritage Program
Jill Handwerk	Team Leader, Botanist	Colorado Natural Heritage Program
Joanna Lemly	Wetland Ecologist	Colorado Natural Heritage Program
Joe Stevens	Team Leader, Ecologist	Colorado Natural Heritage Program
Michael Menafee	Data Distribution Coordinator	Colorado Natural Heritage Program
Pam Smith	Botanist	Colorado Natural Heritage Program
Ben Kraft	Area Wildlife Biologist	Colorado Parks and Wildlife
Ben Swigle	Area Aquatic Management Biologist	Colorado Parks and Wildlife
Bob Sacco	GIS Database Specialist	Colorado Parks and Wildlife
Boyd Wright	Area Aquatic Biologist	Colorado Parks and Wildlife
Elizabeth Brown	Invasive Species Coordinator	Colorado Parks and Wildlife
F. Boyd Wright	Native Aquatic Species Biologist	Colorado Parks and Wildlife
Janet George	Senior Wildlife Biologist	Colorado Parks and Wildlife
Jason Duetsch	Area 2 District Wildlife Manager	Colorado Parks and Wildlife
John Koehler	Area 2 District Wildlife Manager	Colorado Parks and Wildlife
Kris Middeldorf	Area 2 District Wildlife Manager	Colorado Parks and Wildlife
Kristin Cannon	Area 2 District Wildlife Manager	Colorado Parks and Wildlife
Lance Carpenter	Biologist	Colorado Parks and Wildlife
Larry Rogstad	Area 2 Wildlife Manager	Colorado Parks and Wildlife
Mike Sherman	Biologist	Colorado Parks and Wildlife
Tina Jackson	Species Conservation Coordinator	Colorado Parks and Wildlife
Brian Kurtzel	Colorado Natural Areas Coordinator	Colorado Parks and Wildlife, Colorado Natural Areas Program
Jessica Smith	Plant Ecologist	Colorado Parks and Wildlife, Colorado Natural Areas Program
Dr. Boris Kondratieff	Professor, Bioagricultural Sciences and Pest Management	Colorado State University
Carol O'Meara	Horticulture Entomologist & Master Gardener	CSU Extension Services
Melissa Islam	Associate Director of Research, Head Herbaria Curator	Denver Botanic Gardens
Dr. Paula E. Cushing	Curator of Invertebrate Zoology	Denver Museum of Nature & Science
Jeff Connor	Natural Resource Management Specialist	National Park Service, Rocky Mountain National Park
Mary Kay Watry	Supervisory Biologist, Wildlife, Fisheries and Water Rights	National Park Service, Rocky Mountain National Park
Paul McLaughlin	Ecologist, Rocky Mountain National Park	National Park Service, Rocky Mountain National Park
Jason Beason	Special Monitoring and Projects Coordinator	Rocky Mountain Bird Observatory
Craig Hansen	Fish and Wildlife Biologist	United States Fish and Wildlife Service
Bev Baker	Wildlife Biologist	United States Forest Service

Steve Popovich	Botanist	United States Forest Service Arap Roosevelt, Botany
Dr. Carol A. Kearns	Senior Instructor	University of Colorado at Boulder
Dr. David Armstrong	Professor Emeritus, Ecology and Evolutionary Biology and Environmental Studies	University of Colorado at Boulder
Virginia Scott	Collection Manager, Entomology	University of Colorado at Boulder
Tim Hogan	Herbarium Collections Manager	University of Colorado at Boulder Herbarium
Dr. Rick Adams	Professor, Biological Sciences	University of Northern Colorado
Dr. Paul Opler	Professor, Bioagricultural Sciences and Pest Management	Colorado State University

APPENDIX D

ADDITIONAL SOURCES WILDLIFE RESOURCES SECTION

Listing Sources for the Boulder County Wildlife Species of Special Concern List

The Boulder County SSC list is a compilation of special status species identified by federal, state, and local government agencies, as well as non-governmental conservation organizations and conservation experts, as species that warrant protection in order to prevent the loss of habitat or populations. The following are the sources used in compiling the Boulder County SSC list.

Year	Source
1984	Boulder County Wildlife Species of Special Concern
1986	Boulder County Comprehensive Plan - Environmental Resources Element (1986 update)
1988	Dr. David Armstrong. 1988. Mammalian Fauna of Boulder County and Species of Special Concern. Center for Interdisciplinary Studies, University of Colorado, Boulder. Unpublished report for Boulder County Parks and Open Space.
1994	Boulder County Comprehensive Plan - Environmental Resources Element (1994 update)
2000	Partners In Flight - Colorado, Land Bird Conservation Plan
2004	National Park Service - Rocky Mountain National Park, Endangered and Threatened Animal Species
2005	Boulder County Wildlife Species of Special Concern (2005 update)
2007	National Audubon Society - WatchList 2007
2008	Colorado Natural Heritage Program - Survey of Critical Biological Resources in Boulder County Colorado
2009	Bureau of Land Management - Colorado State Director's Sensitive Species List
2010	Boulder County Nature Association - Boulder County Avian Species of Special Concern
2011	U.S. Forest Service - Region 2 Regional Forester's Sensitive Species , Supplement.
2012	Partners In Flight - Species Assessment Database (2012 Update)
2012	U.S. Fish & Wildlife Service - Endangered Species Program
2013	Colorado Parks and Wildlife - Species of Concern
2013	The International Union for Conservation of Nature -The IUCN Red List of Threatened Species
2013	NatureServe Explorer
2013	U.S. Forest Service - Region 2 Regional Forester's Sensitive Species
2013	U.S. Geological Survey - Dragonflies and Damselflies (Odonata) of the United States .
2013	The Xerces Society for Invertebrate Conservation - Red Lists

Taxonomic References Used in Review of the Wildlife Species of Special Concern List

These references were used to assess the pertinence of individual species to conservation efforts in Boulder County. That is, it was determined if a given species was expected to occur in Boulder County and, if so, whether or not that species warranted protection based on the best and most current local and regional information.

Mammals

Adams, R.A. 2003. Bats of the Rocky Mountain West: Natural history, ecology, and conservation. University Press of Colorado, Boulder, Colorado.

Armstrong, D.M., Fitzgerald, J.P., Meaney, C.A. 2011. Mammals of Colorado. University Press of Colorado, Boulder, Colorado. Second Edition.

[Colorado Parks & Wildlife \(CPW\)](#)

[IUCN Red List of Threatened Species](#)

[Natural Diversity Information Source \(NDIS\)](#)

[NatureServe](#)

[North American Mammals: Smithsonian National Museum of Natural History](#)

[USFS Species Conservation Assessments: Rocky Mountain Region](#)

[Wilson & Reeder's Mammal Species of the World: 3rd edition.](#)

Amphibians & Reptiles

[Colorado Herpetofaunal Atlas](#)

[Colorado Herpetological Society](#)

[Colorado Parks & Wildlife \(CPW\)](#)

Hammerson, G.A. 1999. Amphibians and reptiles in Colorado: A Colorado field guide. University Press of Colorado & Colorado Division of Wildlife, Boulder, Colorado. Second Edition.

[IUCN Red List of Threatened Species](#)

[Natural Diversity Information Source \(NDIS\)](#)

[NatureServe](#)

[Reptiles and Amphibians of Colorado](#)

[USFS Species Conservation Assessments: Rocky Mountain Region](#)

Birds

[BirdLife International \(BLA\)](#)

[Colorado Parks & Wildlife \(CPW\)](#)

[eBird](#) (Cornell lab of Ornithology and the National Audubon Society)

[IUCN Red List of Threatened Species](#)

Kingery, H.E. 1998. Colorado Breeding Bird Atlas. Colorado Bird Atlas Partnership

[Natural Diversity Information Source \(NDIS\)](#)

[NatureServe](#)

[The Birds of North America](#) - Online (BNA)

[USFS Species Conservation Assessments: Rocky Mountain Region](#)

Fish

[Colorado Parks & Wildlife \(CPW\)](#)
[IUCN Red List of Threatened Species](#)
[Natural Diversity Information Source \(NDIS\)](#)
[NatureServe](#)

Pocket Guide to native fish of Colorado's eastern plains. 2006. Colorado Division of Wildlife.

[USFS Species Conservation Assessments: Rocky Mountain Region](#)

Woodling, J. 1985. Colorado's Little Fishes: A guide to the minnows and other lesser known fishes in the State of Colorado. Colorado Division of Wildlife.

Insects

[Butterflies and Moths of North America \(BMNA\)](#)
[Butterflies of the Northern Colorado Front Range](#)

Chu & Jones. 2011. Butterflies of the Colorado Front Range. Boulder County Nature Association, Boulder, CO.

Chu, J. 2012. Butterfly inventories within Boulder County Open Space Properties

[Colorado Parks & Wildlife \(CPW\)](#)

[IUCN Red List of Threatened Species](#)

Kearns, C.A. 2012. Conservation status and population structure comparisons of abundant and declining bumblebee species. Department of Ecology and Evolutionary Biology, University of Colorado, Boulder.

[Natural Diversity Information Source \(NDIS\)](#)

[NatureServe](#)

[Odanata Central](#) (Dragonfly Society of America)

[The Xerces Society](#)

[USFS Species Conservation Assessments: Rocky Mountain Region](#)

Mollusks

[Colorado Parks & Wildlife \(CPW\)](#)

Harold, M.N., Guralnick, R.P. 2010. A field guide to the freshwater mollusks of Colorado. Colorado Division of Wildlife, Denver, CO.

[IUCN Red List of Threatened Species](#)

[Natural Diversity Information Source \(NDIS\)](#)

[NatureServe](#)

[USFS Species Conservation Assessments: Rocky Mountain Region](#)

Wu, S.K. 1989. Colorado freshwater mollusks. University of Colorado Museum, Boulder, CO. Natural History Inventory of Colorado, No. 11: 1-117.

APPENDIX E
ADDITIONAL SOURCES FOR
VEGETATION RESOURCES SECTION

Ackerfield, Jennifer. *In Press*. Flora of Colorado. Colorado State University Herbarium. Accessed, April 2013.

Biohabitats, Inc. and City of Boulder Planning and Development Services. April 2007. Wetland and Stream Buffers: A Review of the Science and Regulatory Approaches to Protection.

Boulder County and City of Boulder. 2010. Boulder Valley Comprehensive Plan (BVCP). Available http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=15831&Itemid=5169 (Accessed: April 15, 2013).

Boulder County Land Use Department. May 1999. Boulder County Comprehensive Plan (BCCP). Goals, Policies, and Maps Element. Second edition.

Boulder County Land Use Department. 1995. Boulder County Comprehensive Plan (BCCP). Environmental Resource Element (ERE). Text and Map ECAs, Rare Plant Sites, Significant Natural Communities.

Boulder County Land Use Department. 1994. Boulder County Comprehensive Plan (BCCP). Environmental Resource Element (ERE). Wetlands and Wildlife and Habitats and Natural Areas.

Boulder County Land Use Department. December 1986. Boulder County Comprehensive Plan (BCCP). Environmental Resources Element (ERE).

Boulder County Land Use Department. 1985. Boulder County Comprehensive Plan (BCCP). Environmental Resource Element (ERE). Proposed amendments to the ERE text and Map 4 (Wildlife and plant habitats, natural landmarks and natural areas) of the BCCP.

Boulder County Land Use Department. December 1978. Boulder County Comprehensive Plan (BCCP). Environmental Resources Element (ERE).

Boulder County Nature Association (BCNA). May 2005. Vascular Plant Species of Concern in Boulder County. Ecosystem Stewardship Initiative.

Boulder County Parks and Open Space Department (BCPOS). October 2012. Grassland and Shrubland Management Policy, Prairie Dog Habitat Element. Available <http://www.bouldercounty.org/doc/parks/grasslandmplan.pdf> (Accessed: March, 2013).

Boulder County Parks and Open Space Department (BCPOS), Boulder County Nature Association (BCNA). May 1988. A Survey of Riparian Vegetation in Boulder County, Colorado.

- Bureau of Reclamation (BOR). Technical Service Center. Remote Sensing and GIS Group. August 2005. Technical Memorandum 8260-05-02. Rocky Mountain National Park, Colorado. 2001-2005 Vegetation Classification and Mapping. Final Report.
- Carsey, K., D. Cooper, D. Culver, K. Decker, G. Kittel, et al. March 2003. Field Guide to the Wetland and Riparian Plant Associations of Colorado. Colorado State University. Colorado Natural Heritage Program. Fort Collins, Colorado.
- Castelle, A.J. et al. 1994. Wetland and Stream Buffer Size Requirements – A Review. Published in J. Environ. Qual. 23:878-882.
- City of Boulder. Open Space and Mountain Parks (OSMP). May 2010. Grassland Ecosystem Management Plan. Appendix B. Pages B1 – B13.
- City of Boulder. Open Space and Mountain Parks (OSMP). August 2009. West Trail Study Area: Natural Resource Inventory Report. Table 17 and Appendix B.
- Colorado Department of Transportation (CDOT), Colorado Parks and Wildlife (CPW). January 2003. Guidelines for Senate Bill 40 Wildlife Certification. Developed and Agreed Upon by the Colorado Division of Wildlife and the Colorado Department of Transportation. Senate Bill 40 (33-5-101-107, CRS 1973 as amended).
- Colorado Native Plant Society et al. September 2010. 7th Annual Colorado Rare Plant Symposium. http://www.cnhp.colostate.edu/download/documents/2010/RPTC_2010_G1.pdf (Accessed: April 12, 2013).
- Colorado Natural Heritage Program (CNHP). 2013. Rare Plant Master List. Colorado State University. Fort Collins, Colorado. Available <http://www.cnhp.colostate.edu/download/projects/rareplants/list.asp?list=master>. (Accessed: February 4, 2013).
- Colorado Natural Heritage Program (CNHP). 2013a. Conservation Status Handbook (Tracking Lists). Colorado State University. Fort Collins, Colorado. Available <http://www.cnhp.colostate.edu/download/list.asp>. (Accessed: February 4, 2013).
- Colorado Natural Heritage Program (CNHP). 2013b. Rare Plant Arapaho/Roosevelt National Forest and Pawnee National Grassland List. Colorado State University. Fort Collins, Colorado. Available http://www.cnhp.colostate.edu/download/projects/rareplants/usfs_list.asp?list=usfs_arp. (Accessed February 4, 2013).
- Colorado Natural Heritage Program. Colorado Wetland Information Center (CNHP). 2013c. Available <http://www.cnhp.colostate.edu/cwic/>. (Accessed June 26, 2013).
- Colorado Natural Heritage Program National Wetland Inventory [Provisional] (CNHP NWI). 2013d. Unpublished data at time of 2013 Comprehensive Plan Update.

- Colorado Natural Heritage Program. 2011. The State of Colorado's Biodiversity. Colorado State University. Fort Collins, Colorado. Available http://www.cnhp.colostate.edu/download/documents/2011/Scorecard_march1_2012_final.pdf (Accessed July 23, 2013).
- Colorado Natural Heritage Program (CNHP). February 2009. Survey of Critical Biological Resources in Boulder County, Colorado 2007-2008. Colorado State University. Table 2, p. 41-48 and Appendix C, p. 107-352. Fort Collins, Colorado. Available http://www.cnhp.colostate.edu/download/documents/2009/BoulderCoReportFINAL_6-26-2009.pdf. (Accessed February 2013).
- Colorado Parks and Wildlife. Colorado Natural Areas Program. April 2009. Articles of Designation: Boulder Mountain Park Natural Area. State of Colorado. Exhibit E.
- Colorado Natural Heritage Program (CNHP) and The Nature Conservancy. 2008. Landscape integrity in Colorado. GIS dataset. Colorado Natural Heritage Program, Colorado State University, Fort Collins, Colorado.
- Culver, Denise R., Joanna M. Lemly. March 2013. Field Guide to Colorado's Wetland Plants: Identification, Ecology and Conservation. Colorado Natural Heritage Program. Colorado State University.
- Ecological Society of America. 2013. VegBank: Vegetation Plot Database. University of North Carolina, Chapel Hill. Department of Biology. Available <http://vegbank.org/vegbank/index.jsp>. (Accessed June 25, 2013).
- Environmental Law Institute. March 2008. Planner's Guide to Wetland Buffers for Local Governments. Washington D.C. ELI Project No. 0627-01.
- Farrar, Donald R. Systematics of Western Moonworts, Botrychium Subgenus Botrychium. May 2005. Department of Botany, Iowa State University. Ames, Iowa.
- Geils, Brian W., Hummer, Kim E., Hunt, Richard S. 2010. White pines, *ribes*, and blister rust: a review and synthesis. Published in Forest Pathology 40:147-185.
- Gibson, K., Skov, K., Kegley, S., Jorgensen, C., Smith, S., Wicosky, J. September 2008. Mountain Pine Beetle Impacts in High-Elevation Five-Needle Pines: Current Trends and Challenges. R1-08-020. Forest Health Protection. USDA Forest Service. 32 p.
- Hallock, Dave et al. January 1986. Ecology, Status and Avifauna of Willow Carrs in Boulder County. Boulder County Nature Association Publication No. 4.
- Hirschfeld, Sue Ellen. Unique Geology and Biota of the Niwot/Somerset White Rocks on Boulder County Parks and Open Space. Professor Emerita. California State University.
- Hogan, Tim. 1993. A Floristic Survey of the Boulder Mountain Park, Boulder, Colorado. University of Colorado Museum. University of Colorado, Boulder.

- Kaye, M.W., D. Binkley, and T.J. Stohlgren. 2005. Effects of conifers and elk browsing on quaking aspen forests in the central Rocky Mountains, USA. *Ecological Applications* 15(4): 1284-1295.
- Nadeau, Tracie-Lynn and Mark Rains. February 2007. Hydrologic Connectivity Between Headwater Streams and Downstream Waters: How Science Can Inform Policy. *Journal of the American Water Resources Association*. Vol. 43, No. 1.
- National Oceanic and Atmospheric Administration (NOAA). National Climatic Data Center. International Tree Ring Databank (ITRD). Available <http://www.ncdc.noaa.gov/paleo/treering.html> (Accessed August 2013).
- National Park Service (NPS). December 2010. State Endangered, Threatened, and Rare Species for Rocky Mountain National Park. (Personal communication with Jeff Connor, Natural Resource Management Specialist with NPS on February 13, 2013.)
- National Park Service (NPS). April 2004. A List of Rare and Imperiled Plant Communities in Rocky Mountain National Park. (Personal communication with Jeff Connor, Natural Resource Management Specialist with NPS on February 13, 2013.)
- NatureServe Explorer. 2012. International Classification of Ecological Communities: Terrestrial Vegetation. Natural Heritage Central Databases. NatureServe, Arlington, VA. Available <http://www.natureserve.org/explorer/classeco.htm>. (Accessed: February 12, 2013).
- Marx, Ernie. 2013. Eastern Colorado Wildflowers. Available <http://www.easterncoloradowildflowers.com/>. (Accessed: February 12, 2013).
- Reynolds, Richard T.; Sánchez Meador, Andrew J.; Youtz, James A.; Nicolet, Tessa; Matonis, Megan S.; Jackson, Patrick L.; DeLorenzo, Donald G.; Graves, Andrew D. 2013. Restoring composition and structure in Southwestern frequent-fire forests: A science-based framework for improving ecosystem resiliency. Gen. Tech. Rep. RMRS-GTR-310. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 76 p.
- Shaw, Robert B. 2008. *Grasses of Colorado*. University Press of Colorado. Boulder, Colorado.
- Schoettle, A.W. 2004. Ecological roles of five-needle pines in Colorado: potential consequences of their loss. Pp. 124-135 in R.A. Sniezko, S. Samman, S.E. Schlarbaum, and H.B. Kriebel (eds.), *Proceedings of the Conference on Breeding and Genetic Resources of Five-Needle Pines: Growth, Adaptability and Pest Resistance*, 23-27 July 2001, Medford, OR.
- United States Army Corps of Engineers (USACE). Brinson, Mark. August 1993. A Hydrogeomorphic Classification for Wetlands. Wetlands Research Program Technical Report WRP-DE-4. Available <http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde4.pdf> (Accessed: June 24, 2013).
- United States Dept. of Agriculture, Natural Resource Conservation Service (USDA, NRCS). 2013. The PLANTS Database. National Plant Data Team. Greenboro, NC. Available <http://plants.usda.gov>. (Accessed: February 4, 2013).

United States Dept. of Agriculture, United States Forest Service (USFS). July 2005. Moonwort Workshop hosted by Steve Popovich, Forest Botanist, Arapaho-Roosevelt National Forest & Pawnee National Grassland.

United States Dept. of Agriculture, United States Forest Service (USFS), Region 2 - Rocky Mountain Region. June 10, 2011. Sensitive Species List. Available <http://www.fs.usda.gov/detail/r2/landmanagement/?cid=stelprdb5390116>. (Accessed: February 18, 2013).

United States Environmental Protection Agency (EPA). November 2008. The Ecological and Hydrological Significance of Ephemeral and Intermittent Streams in the Arid and Semi-Arid American Southwest. EPA/600/R-08/134. ARS/233046. Available http://www.epa.gov/esd/land-sci/pdf/EPHEMERAL_STREAMS_REPORT_Final_508-Kepner.pdf. (Accessed June 24, 2013).

United States Fish and Wildlife Service (USFWS). 2013. Endangered Species Program's Environmental Conservation Online System. Listings and Occurrences for Colorado. Available http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=CO. (Accessed: February 27, 2013).

United States National Vegetation Classification System (USNVCS). 2013. Hierarchy Explorer. North Carolina State University. Available <http://usnvc.org/explore-classification/>. (Accessed June 24, 2013).

University of Colorado at Boulder, Museum of Natural History. CU Herbarium. (COLO). Botany Database for Boulder County. Species list of Vascular Plants – Boulder. Available http://cumuseum-archive.colorado.edu/Research/Botany/Databases/county_list.php?county=Boulder. (Accessed February 5, 2013).

USDA, NRCS. 2013. The PLANTS Database. National Plant Data Team, Greensboro, NC. Available <http://plants.usda.gov>. (Accessed February 5, 2013).

Washington State, Dept. of Ecology. February 1992. Wetland Buffers: Use and Effectiveness. Publication #92-10.

Weber, W.A. and Ronald C. Wittmann. 2012. Colorado Flora, Eastern Slope: A Field Guide to the Vascular Plants. Fourth Edition. University Press of Colorado. Boulder, Colorado.

Weber, W. A. November 1995. Natural History Inventory of Colorado: Checklist of Vascular Plants of Boulder County, Colorado. University of Colorado Museum. Boulder, Colorado.

Worrall, J., Egeland, L., Eager, T., Mask, R., Johnson, E., Kemp, P., Shepperd, W. 2008. Sudden Aspen Decline in Southwest Colorado: Site and Stand Factors and a Hypothesis on Etiology. In: McWilliams, M. G., comp. 2008. Proceedings of the 55th Western International Forest Disease Work Conference; 2007 October 15-19; Sedona, AZ. Salem, OR: Oregon Department of Forestry.

Wright Water Engineers, Inc. December 1993. Wetland Identification and Inventory for Private Property in Unincorporated Boulder County. Prepared for Boulder County Parks and Open Space and Region VIII U.S. Environmental Protection Agency.

APPENDIX F

A BRIEF HISTORY OF RARE PLANT AREAS AND SIGNIFICANT NATURAL COMMUNITIES DESIGNATIONS

Boulder County recognized the importance and value of diverse vegetation and natural features in the first version of the BCCP in 1978 (1978 BCCP). This recognition resulted in the adoption of goals and policies in the BCCP intended to help protect these unique natural resources. The intentions of the 1978 BCCP were revisited and updated numerous times. The historical changes and information relevant to Rare Plant Areas and Significant Natural Communities are summarized below starting from the 1978 BCCP to the most current version that includes the Environmental Element that was last updated in 1999.

The 1978 BCCP preservation goals included plant communities and plants in the larger context of natural features and wildlife habitat. Boulder County plant communities were protected under the Environmental Management Section of the plan “Existing critical or unique stands of vegetation such as short grass prairies shall be preserved and conserved (BCCP 1978, Goal B.1: Policy 4.05).” The section that discusses wildlife habitat pointed out the concern of loss of irreplaceable habitat and the importance of protecting rare species and species diversity. The importance of reducing threats to species diversity was a guiding principle. To meet these goals and policies, land use planning was used to aggregate development and protect natural areas.

The 1985 revision to the BCCP added another Environmental goal that more directly protected plants and plant associations; “Critical plant associations and rare plant sites should be conserved and preserved to encourage a diversity of plant types within the County and to perpetuate the species (BCCP 1985).” The prior version of the plan only protected plants and plant communities in the broader context of habitat and natural features.

The 1986 update of the ERE defined Plant Communities as: “the interrelationship between the vegetation and the environment (climate, soils, water) as well as the animal populations utilizing the area (BCCP ERE 1986).” The distinction or difference between a Plant Community and a Plant Association was made in this ERE version. Plant Associations only included the plants and the abiotic conditions. Plant Associations do not include the wildlife interactions. “Plant associations are groups of plant species that typically grow together because of their common affinity for a particular climatic condition, soil type, moisture regime, disturbance pattern or combination of these (BCCP ERE 1986).”

The 1986 ERE update also brought in the ranking system and concepts used by the Natural Heritage Programs for ranking rare plants and rare plant communities (associations) to be included on a sensitivity list. The Natural Heritage Program ranking system used in 1986 was very similar to its current version. Using this system, the Colorado Department of Natural Resources, now Colorado Parks and Wildlife, and The Nature Conservancy completed a Colorado Natural Heritage Inventory (CNHI). At the

time of this inventory 113 rare or imperiled plant associations were found in Colorado, sixteen of those were present in Boulder County.

This ranking concept was applied locally at the County, and the following criteria were used to compile a list of Plant Associations of Concern (BCCP ERE 1986):

- 1) No or very small acreage representative of the pre-settlement condition of the association protected from alteration or loss. Generally this means protection in a natural area, park or possibly a wilderness area, where land uses that have altered the association on most other sites are excluded.
- 2) Significant percentage of known sites in the County are threatened with further alteration or possible loss if current land uses continue, or if projected land uses occur.
- 3) Uncommon or restricted distribution within Boulder County.
- 4) Few known sites remaining in condition resembling pre-settlement condition.

This version of the plan also included rare plant areas of species that at the time were consider plant species of concern in Colorado. The following species were known to be present in Boulder County and they were added to the Environmental Resources Map. The current ranking of these species also places them on the current SSC List.

- 1) American ground nut (*Apios americana*)
- 2) Annual Three-Awn Grass (*Aristida basiramea*)
- 3) Andrew's spleenwort (*Asplenium andrewsii*)
- 4) Bell's twinpod (*Physaria bellii*)
- 5) Icegrass (*Phippisia algida*)

The 1995 ERE update of the BCCP removed some plant communities, such as cattail and three square wetlands, from the map and added mesic tall grass prairies and a few other important plant communities. Additionally, the glossary was updated to include the following definitions of Rare Plant Areas and Significant Natural Communities:

Locally Significant Natural Community: A regionally rare, native ecosystem, as determined by Boulder County. Although the concept includes both flora and fauna, the classification is based upon plant associations. See Significant Natural Community (BCCP 1995).

Rare Plant Sites: An area of land that includes occurrences of scarce plant species. In some cases, the site boundary may include a buffer area (conservation zone) critical to the preservation of the species (BCCP 1995).

The last update of the BCCP ERE in 1999 changed the goals and policies to better protect the physical components of natural plant communities and rare plants as well as the functions of these areas. The Environmental Management Goal B.4 states,

Significant natural communities, including significant riparian communities and rare plant sites should be conserved and preserved to retain living examples of natural ecosystems, furnish a baseline of ecological processes and function, and enhance and maintain the biodiversity of the region (BCCP 1999).

Two new policies were also proposed and adopted in the 1999 update of the ERE, Policy 5.03 and Policy 5.04. In these two policies, the County made a commitment to working with public organizations, private organizations, and Land Use Proposal applicants to protect Rare Plant Areas and Significant Natural Communities. This commitment included adopting regional approaches, such as intergovernmental agreements and giving assistance to local municipalities in development of management plans to avoid loss of important resources (BCCP 1999). Policy 5.04 required the inclusion of an impact report with Land Use Proposals that may adversely impact Rare Plants and Communities. The report required a description of the potential impacts, mitigation measures, and monitoring plan that would help minimize impacts to rare plants and the plant community in question (BCCP 1999).

APPENDIX G

A BRIEF HISTORY OF WETLAND AND RIPARIAN AREA DESIGNATIONS

Beginning with the first version of Boulder County's comprehensive plan in 1978, wetlands and riparian areas information presented in each successive BCCP version from 1986 to 2013 has been cumulative. It has developed, in part, due to changes in our understanding of wetland science and in part, due to information learned from the various local wetland inventories used to inform the comprehensive plan as it has been updated over time.

In the 1978 BCCP, Boulder County began conservation of wetlands by including wetland specific Goals and Policies in the BCCP. For example, Goal B.4 stated that "wetlands which are important to maintaining the overall balance of ecological systems should be conserved (BCCP 1978)." The plan highlighted the inherent values of wetlands, their hydrologic importance for humans, and the important habitats wetlands provide for wildlife. The 1978 wetland Goals and Policies were further supported by a wetland inventory of Boulder County's plains conducted by Boulder County Parks and Open Space in 1976 using the U.S. Fish and Wildlife Service's *Wetlands of the United States* (1971), now known as National Wetlands Inventory, to identify nationally recognized wetland types (BCCP 1978).

The subsequent revision of the BCCP in 1986 built and improved upon wetland protections by refining the definitions of wetlands and riparian areas, designating particular wetlands as 'significant' and by adding Critical Plant Association and Rare Plant Area protective designations. Like the 1978 BCCP, the 1986 update included data from the plains wetland mapping inventory (1976) as well as data from Boulder County Natural Association's (BCNA's) *Ecology, Status and Avifauna of Willow Carrs in Boulder County* inventory (Hallock et al. 1985). The BCNA inventory identified important wetlands in the montane, subalpine and alpine portions of Boulder County. Most willow carrs described in the inventory were designated as Critical Wildlife Habitat sites (BCCP 1986).

The 1986 BCCP identified the following wetlands as 'significant':

- 1) Wetlands important for flood control, water quality and run off stabilization.
- 2) Wetlands designated as a Critical Wildlife Habitat.
- 3) Wetlands designated as a Critical Plant Association.
- 4) Wetlands designated as Natural Areas (in the upper montane, subalpine and alpine life zones).
- 5) Wetlands five acres in size or greater with three or more wetland types.
- 6) Wetlands 10 acres in size or greater.

Riparian areas included as 'significant' were those streams or reaches with an index value of 8 through 10 per the CPW's stream classification protocols (BCCP 1986).

The 1986 BCCP identified the following streams and reaches as 'significant':

- 1) North Fork of Middle Boulder Creek
- 2) Coney Creek

- 3) Roaring Creek
- 4) South St. Vrain, Middle St. Vrain, and North St. Vrain
- 5) Caribou Creek

Revisions made in the 1995 BCCP Environmental Resource Element (ERE) update included the following wetlands criteria:

- 1) The wetland performs at least three wetland functions²¹ to a high degree.
- 2) The wetland is significant in size, relative to other wetlands in the area, or in absolute terms.
- 3) The wetland contains a diverse array of wetland plant communities, hydrologic conditions, and features.
- 4) The wetland is unique or important for other reasons (e.g., educational value; unique hydrologic conditions; presence of endangered, threatened, or sensitive species, etc.).

The 1999 BCCP revision increased protections given to riparian plant communities through Goals and Policies not previously included. These Goals and Policies included ecological processes, protection and restoration on public and private lands, and stream flows and hydrologic processes of riparian systems and associated wetlands. Additionally, the 1999 BCCP included the Goals and Policies proposed in the 1995 ERE update, including “riparian ecosystems, which are important plant communities, wildlife habitat and movement corridors shall be protected (BCCP 1999).”

5)

The 1999 BCCP lists the following perennial streams reaches as ‘Significant Riparian Corridors’:

1. South Boulder Creek (west of Highway 93)
2. Boulder Creek (east of 63rd Street)
3. Coal Creek (two sections south of Highway 36, one section north of 95th Street)
4. Fourmile Canyon Creek (east of Diagonal Highway)
5. Lefthand Creek (east of Diagonal Highway)
6. St. Vrain Creek (east of 75th Street)

Other policies in the 1999 BCCP discuss protection and evaluation of other wetlands (those not identified as ‘significant’) and suggested amending the Boulder County Land Use Code to require a report and map of potential impacts to these areas before making development decisions.

²¹ Functions include groundwater recharge, groundwater discharge, flood storage, shoreline anchoring, sediment trapping, nutrient retention and removal, food chain support, habitat, active recreation, and passive recreation.

APPENDIX H

CRITICAL WILDLIFE AREA DESCRIPTIONS

Critical Wildlife Habitat #2

Year Revised: 2013

Year Established: 1994

Common Name: Copeland Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located at intersection of SH 7 and CR 115 inside Rocky Mountain National Park.

Designation Description: Copeland Willow Carr is a rare riparian shrubland community along North St. Vrain Creek, located on the Eastern edge of Rocky Mountain National Park. It is the largest willow carr on the Front Range. It supports possibly the highest density of breeding neotropical migratory birds in the Front Range. This site is part of a much larger natural area encompassing the entire North St. Vrain canyon — the only un-roaded large canyon system in the Front Range. American beaver are present and active on the site.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*).

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This site has residences, roads, NPS fee station/parking lot, trails, and heavy recreational hiking and equestrian use. Generic threats to American Beaver include trapping for sport or direct removal of dams or individuals.

Habitat Descriptions:

Habitat (General): Glaciated valley of Wild Basin within Rocky Mountain National Park. Wetland and riparian areas dominated by willows, alder, birch, sedges and grasses mixed with ponded water from beaver dams. Scattered conifers are present. North St. Vrain Creek flows through site.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Inter-Mountain West Aspen-Mixed Conifer Forest and Woodland Complex, Rocky Mountain Subalpine-Montane Riparian Woodland, Open Water, Rocky Mountain Alpine-Montane Wet Meadow, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Cliff and Canyon, Rocky Mountain Aspen Forest and Woodland.

Size: 432 acres

Elevation: 8282-8814 feet (Mean = 8398 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: NPS, City of Longmont, and private property.

Current Resource Protection and Management Designations:

See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #4

Year Revised: 2013

Year Established: 1983

Common Name: Deadman Gulch and South St. Vrain

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located along SH7 roughly between Coffintop Gulch and Deadman's Gulch intersections with South St. Vrain Creek.

Designation Description: Rock cliff ledge habitat along the South St. Vrain Canyon supporting several Golden Eagle nests. Rocky spires and steep, rolling terrain with ponderosa pine forest and riparian small riparian systems.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Beaver, Indigo Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Lake Darter, American Dipper, Hudsonian Emerald Dragonfly, Mottled Duskywing, Moss's Elfin, American Emerald, Peregrin Falcon, Prairie Falcon, Northern Flicker, Willow Flycatcher, Gray Fox, Chorus Frog, Northern Pocket Gopher, White-tailed Jackrabbit, Belted Kingfisher, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Western Small-footed Myotis, River Otter, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, American Redstart, Ringtail, Tiger Salamander, Western Scrub-Jay, Rocky Mountain Bighorn Sheep, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sage Thrasher, Plumbeous Vireo, Heather Vole, Virginia's Warbler, Wilson's Warbler, Cedar Waxwing, Rock Wren

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends.

Habitat Descriptions:

Habitat (General): Rock cliffs and ledges on granite walls of South St. Vrain Canyon. Rocky spires and steep, rolling terrain with ponderosa pine forest and riparian small riparian systems.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Invasive Perennial Grassland, Developed, Open Space - Low Intensity, Recently Mined or Quarried, Rocky Mountain Alpine-Montane Wet Meadow.

Size: 509 acres

Elevation: 5635-6811 feet (Mean = 6199 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #5

Year Revised: 2013

Year Established: 1983

Common Name: Steamboat Mountain

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Northwest of the town of Lyons, extending roughly from the Eagle Canyon subdivision northward nearly to the Boulder County line.

Designation Description: Sandstone cliff formations rising above the N St. Vrain Creek serving as habitat for several rare cliff nesting raptor species of special concern.

Key Species:

SSC Known Occurrence: Prairie Falcon (*Falco mexicanus*); Peregrine Falcon (*Falco peregrinus*); Golden Eagle (*Aquila chrysaetos*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Beaver, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Lake Darter, American Dipper, Hudsonian Emerald Dragonfly, Mottled Duskywing, American Emerald, Northern Flicker, Gray Fox, Chorus Frog, Northern Pocket Gopher, White-tailed Jackrabbit, Belted Kingfisher, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Western Small-footed Myotis, River Otter, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, Ringtail, Tiger Salamander, Western Scrub-Jay, Rocky Mountain Bighorn Sheep, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sage Thrasher, Plumbeous Vireo, Heather Vole, Virginia's Warbler, Wilson's Warbler, Rock Wren

Threats to Species or Habitat: Peregrine Falcon, Prairie Falcon and Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends.

Habitat Descriptions:

Habitat (General): Rocky cliffs and surrounding shrublands, adjacent to the North Saint Vrain Creek.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Ponderosa Pine Woodland, Western Great Plains Foothill and Piedmont Grassland, Recently Mined or Quarried, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Western Great Plains Riparian Woodland and Shrubland, Developed, Open Space - Low Intensity, Developed, Medium - High Intensity.

Size: 618 acres

Elevation: 5463-6566 feet (Mean = 6014 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space, private property and town of Lyons.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #7

Year Revised: 2013

Year Established: 1978

Common Name: St. Vrain Corridor

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration: X

Unique Biodiversity: X

Location (General): River channel and riparian habitat starting at Steamboat Mountain (N. St. Vrain) and Hall II (S. St. Vrain) and ending near N. 119th St., Longmont.

Designation Description: The Saint Vrain Creek and Riparian Corridor, including a short section of Lefthand Creek at the confluence with St. Vrain Creek. It is a well-developed complex cottonwood-willow gallery forest adjacent to rural agricultural lands. Adjacent lands include many reclaimed gravel pit ponds and well-developed riparian shrub habitats along ditches. Most important native small fish habitat in the Front Range--supporting one native fish under USFWS ESA review, one State Threatened species, and two State Special Concern species. Supports a known population of the threatened Preble's Meadow Jumping Mouse and a diversity of Eagle and Heron nesting sites. Golden Eagle nesting site.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*); Bald Eagle (*Haliaeetus leucocephalus*); Plains Topminnow (*Fundulus sciadicus*; ESA Rev.); Common Shiner (*Notropis cornutus*; CPW Threatened); Iowa Darter (*Etheostoma exile*; CPW SSC); Stonecat (*Noturus flavus*; CPW SSC); Great Blue Heron (*Ardea herodias*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); American Beaver (*Castor canadensis*); Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*)*

SSC Potential Occurrence (within habitat area): American Avocet, Hops Feeding Azure, American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Townsend's Big-eared Bat, Tricolored Bat, Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Bobolink, Indigo Bunting, Lark Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Hornyhead Chub, Long-billed Curlew, Johnny Darter, Mottled Duskywing, Great Egret, Moss's Elfin, Peregrine Falcon, Prairie Falcon, Chorus Frog, Northern Leopard Frog, Northern Harrier, Rough-legged Hawk, Black-crowned Night Heron, Brassy Minnow, Northern Mockingbird, Little Brown Myotis, River Otter, Ovenbird, Northern Pygmy Owl, Cylindrical Papershell, Banded Phyllis, North American Porcupine, American Redstart, Tiger Salamander, Bigmouth Shiner, Blacknose Shiner, Dwarf Shrew, Least Shrew, Common Garter Snake, Stonecat, Great Plains Toad, Plains Spadefoot Toad, Spiny Softshell Turtle, Cedar Waxwing.

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. Plains Topminnow, Common Shiner, Iowa Darter and Stonecat are native fishes sensitive to siltation, loss of streamside vegetation or backwater breeding habitat, low-flow conditions, reduced water quality or increased water temperature and competition from exotic species such as the western mosquitofish (*Gambusia affinis*). Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Generic threats to American Beaver include trapping for sport or direct removal of dams or individuals. Preble's Meadow Jumping Mouse are sensitive to riparian fragmentation and loss of structural diversity of the vegetation (e.g. shrubs). This area is highly developed with many on-channel ditch diversions, active grazing and agriculture, with roads and residences distributed throughout.

Habitat Descriptions:

Habitat (General): St. Vrain Creek stream corridor, cliff faces, cottonwood-willow riparian groves, adjacent reclaimed gravel ponds and grassland habitats.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Western Great Plains Riparian Woodland and Shrubland, Rocky Mountain Lower Montane-Foothill Shrubland, Developed, Open Space - Low Intensity, Open Water, Developed, Medium - High Intensity, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Alpine-Montane Wet Meadow, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Western Great Plains Shortgrass Prairie.

Size: 2059 acres

Elevation: 4914-5769 feet (Mean = 5235 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE, town of Lyons, city of Longmont.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #8

Year Revised: 2013

Year Established: 1978

Common Name: Rabbit Mountain

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Area located NE of the town of Lyons, roughly bounded by N 75th St. on the east, N 55th St. on the west, the Little Thompson River on the north and private land to the south.

Designation Description: Rare and intact shrubland community which is supporting relatively unfragmented and high-quality wildlife habitat. Long-documented nesting site of Golden Eagle, which are supported by adjacent prairie dog colony. Regionally important habitat for bird biodiversity, large mammal concentration, elk range, native reptile habitat and a source of native pollinators.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*); Elk (*Cervus elaphus*) concentration; Avian biodiversity; Short-eared owl (*Asio flammeus*); Black Tailed Prairie Dog (*Cynomys ludovicianus*)

SSC Potential Occurrence (within habitat area): Preble's Meadow Jumping Mouse

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Elk are sensitive to human development and encroachment as well as habitat degradation. Short-eared Owl are vulnerable to the loss of open grassland habitat of sufficient size for successful nesting, either by conversion to agriculture, overgrazing, recreation and development. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. This area contains significant human presence from developed recreation and trail use on open space, as well as industrial use and maintenance of the Carter Lake Canal. There are numerous residences and agricultural operations on the periphery of this area.

Habitat Descriptions:

Habitat (General): Ponderosa pine woodlands, shrublands, and grasslands; Hogback formations; grassland habitat; riparian corridor.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Agriculture, Western Great Plains Shortgrass Prairie, Rocky Mountain Ponderosa Pine Woodland, Western Great Plains Riparian Woodland and Shrubland, Developed, Open Space - Low Intensity, Developed, Medium - High Intensity, Western Great Plains Cliff and Outcrop, Western Great Plains Floodplain Herbaceous Wetland.

Size: 3380 acres

Elevation: 5197-6131 feet (Mean = 5559 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #10

Year Revised: 2013

Year Established: 1983

Common Name: Middle St. Vrain Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located at the intersection of SH7 and CR 92. Roughly bounded by USFS Camp Dick and Peaceful Valley.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site provides quality habitat for the American Beaver and its associated species. This area is within the county River Otter concentration area.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*); River Otter (*Lontra canadensis*) core habitat

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. Avian and small mammal biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. River Otter are sensitive to streamside and riparian habitat modification, water quality degradation leading to loss of prey, and direct trapping.

Habitat Descriptions:

Habitat (General): Willow carr vegetation dominated by willow shrubs, alder, birch, sedges and grasses. Middle St. Vrain Creek flows through the site with associated beaver ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Aspen Forest and Woodland, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland, Southern Rocky Mountain Montane-Subalpine Grassland.

Size: 236 acres

Elevation: 8513-9120 feet (Mean = 8717 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and private property. Note Camp Dick and Peaceful Valley campgrounds on site.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #11

Year Revised: 2013

Year Established: 1983

Common Name: Tumblesom Lake

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located at the intersection of SH7 and CR96J. Much of the area is owned and used by the Boy Scouts of America.

Designation Description: Includes the lake and willow carr habitats. The lake supports a recently re-discovered species of native fish in Colorado. Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Lake Chub (*Couesius plumbeus*); River Otter (*Lontra canadensis*) core habitat; American Beaver (*Castor canadensis*); Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Lake Chub are sensitive to direct mortality or loss of breeding habitat by dewatering or dredging of rocky shore and shoal habitat along lake margins, or blockage of open tributary streams used for breeding in early spring; introduction of invasive or exotic species such as crayfish which may consume eggs or fry; excessive stocking of predatory game fish which may deplete the adult population; contamination of water with organic waste which leads to reduced oxygen or water quality. Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. Avian and small mammal biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. River Otter are sensitive to streamside and riparian habitat modification, water quality degradation leading to loss of prey, and direct trapping. This area is dominated in summer by a regional Boy Scout camp, and contains the beginning of the South St. Vrain Trail (909).

Habitat Descriptions:

Habitat (General): Willow carr adjacent to Tumblesom Lake. Vegetation is dominated by willow shrubs, alder, birch, sedges and grasses. Active beaver ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Open Water, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Inter-Mountain West Aspen-Mixed Conifer Forest and Woodland Complex, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland.

Size: 184 acres

Elevation: 8746-9006 feet (Mean = 8874 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: Boy Scouts of America, private property and USFS.

Current Resource Protection and Management Designations:

See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #12

Year Revised: 2013

Year Established: 1983

Common Name: Marietta Canyon

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Two areas located north of Geer Canyon Drive in Heil Valley Ranch.

Designation Description: Includes rock cliffs and ledges serving as habitat for Golden Eagle and Prairie Falcon, small riparian areas, as well as prairie community types serving as rare butterfly habitat. Cougar production area.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*); Rare Butterfly concentration; Hops Feeding Azure (*Clestinia humulus*); Dusted Skipper (*Atrytonopsis hianna*); Moss's Elfin (*Callophrys mossii*); Prairie Falcon (*Falco mexicanus*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Beaver, Indigo Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Lake Darter, American Dipper, Hudsonian Emerald Dragonfly, Mottled Duskywing, Moss's Elfin, American Emerald, Peregrine Falcon, Northern Flicker, Willow Flycatcher, Gray Fox, Chorus Frog, Northern Pocket Gopher, White-tailed Jackrabbit, River Jewelwing, Belted Kingfisher, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Western Small-footed Myotis, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, American Redstart, Ringtail, Western Scrub-Jay, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sage Thrasher, Plumbeous Vireo, Heather Vole, Virginia's Warbler, Wilson's Warbler, Cedar Waxwing, Rock Wren.

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Hops Feeding Azure, Dusted Skipper and Moss's Elfin are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. Prairie Falcon are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends.

Habitat Descriptions:

Habitat (General): Rock cliffs and ledges; grasslands.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Agriculture, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lower Montane-Foothill Shrubland.

Size: 251 acres

Elevation: 6101-7047 feet (Mean = 6587 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #13

Year Revised: 2013

Year Established: 1983

Common Name: Lefthand Palisades

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located at the intersection of Lefthand Canyon Drive and Olde Stage Road.

Designation Description: Lefthand Palisades provides high-quality nesting habitat for a pair of Golden Eagles. This site was first described by Gale in in the 1880s, and has been monitored for over 30 years by BCNA volunteers and OSMP staff. The CWH boundaries generally follow OSMP seasonal wildlife closure boundaries.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Beaver, Lazuli Bunting, Bushtit, American Dipper, Hudsonian Emerald Dragonfly, Mottled Duskywing, Moss's Elfin, American Emerald, Peregrine Falcon, Prairie Falcon, Northern Flicker, Gray Fox, Chorus Frog, Northern Pocket Gopher, White-tailed Jackrabbit, River Jewelwing, Belted Kingfisher, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Western Small-footed Myotis, River Otter, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, Ringtail, Western Scrub-Jay, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sage Thrasher, Plumbeous Vireo, Heather Vole, Virginia's Warbler, Wilson's Warbler, Rock Wren.

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends.

Habitat Descriptions:

Habitat (General): West facing sandstone ledge on cliffs.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Invasive Perennial Grassland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Developed, Open Space - Low Intensity, Agriculture.

Size: 162 acres

Elevation: 5757-6328 feet (Mean = 6032 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder and private property.

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan. Raptor nesting sites are protected with seasonal closures (1 February – 31 July or until warranted).

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #14

Year Revised: 2013

Year Established: 1978

Common Name: Lefthand Creek Cottonwood Groves

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Two areas located between N 45th St. on the west and the intersection of Airport Road and SH119 on the west.

Designation Description: Creek, associated riparian habitat and adjacent well-developed riparian gallery forest of cottonwoods, willows, and shrub. This habitat is important to conserve native fish species of special concern. Aquatic habitat is essential for conservation of native fish species of special concern. Cottonwood, willow and shrub habitat is important for many sensitive riparian species.

Key Species:

SSC Known Occurrence: Johnny Darter (*Etheostoma exile*); Plains Topminnow (*Fundulus sciadicus*); Avian and Small Mammal biodiversity; Red-headed Woodpecker (*Melanerpes erythrocephalus*)

SSC Potential Occurrence (within habitat area): American Avocet, Big Brown Bat, Brazilian Free-tailed Bat, Eastern Red Bat, Hoary Bat, Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Indigo Bunting, Lark Bunting, Hornyhead Chub, Lake Darner, Iowa Darter, Wood Duck, Bald Eagle, Great Egret, Northern Flicker, Giant Floater, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Black-crowned Night Heron, Great Blue Heron, Horned Lark, Short Horned Lizard, Brassy Minnow, Northern Mockingbird, River Otter, Long-eared Owl, Cylindrical Papershell, Banded Physa, American Redstart, Tiger Salamander, Bigmouth Shiner, Blacknose Shiner, Common Shiner, Least Shrew, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Stonecat, Spiny Softshell Turtle.

Threats to Species or Habitat: Plains Topminnow and Johnny Darter are native fishes sensitive to siltation, loss of streamside vegetation or backwater breeding habitat, low-flow conditions, reduced water quality or increased water temperature and competition from exotic species such as the western mosquitofish (*Gambusia affinis*). Red-Headed Woodpecker are vulnerable to lack of cavity nesting habitat, competition by non-natives (i.e. European Starlings) for available cavities, lack of open forest stands for aerial foraging and lack of fruit bearing shrubs in understory. Avian and small mammal biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity.

Habitat Descriptions:

Habitat (General): Lefthand Creek and adjacent riparian habitat of cottonwoods and willows and associated shrubs

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Floodplain Herbaceous Wetland, Invasive Perennial Grassland, Developed, Open Space - Low Intensity.

Size: 433 acres

Elevation: 5022-5346 feet (Mean = 5135 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: Private property, Joint BCPOS and City of Boulder, BCPOS Open Space and CE.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #15

Year Revised: 2013

Year Established: 1983

Common Name: Lagerman Reservoir

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located at the intersection of Prospect Rd. and N 63rd St. Extends roughly from N 63rd St. to Lagerman Reservoir.

Designation Description: Reservoir, grassland, shoreline, wetland and creek habitats used by Burrowing Owl, Northern Harrier, Bald Eagle and other species of special concern for breeding and foraging.

Key Species:

SSC Known Occurrence: Burrowing Owl (*Athene cunicularia*); Northern Harrier (*Circus cyaneus*); Bald Eagle (*Haliaeetus leucocephalus*); American Bittern (*Botaurus lentiginosus*); Bobolink (*Dolichonyx aryzivorus*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); Short-eared owl (*Asio flammeus*); Horned Lark (*Eremophila alpestris*).

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Brazilian Free-tailed Bat, Yellow-headed Blackbird, Colorado Blue, Lark Bunting, Indigo Bunting, Lazuli Bunting, Hornyhead Chub, Double-crested Cormorant, Iowa Darter, Johnny Darter, Wood Duck, Mottled Duskywing, Great Egret, Prairie Falcon, Giant Floater, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Ferruginous Hawk, Rough-legged Hawk, Great Blue Heron, White-tailed Jackrabbit, Short Horned Lizard, Brassy Minnow, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Little Brown Myotis, Short-eared Owl, Cylindrical Papershell, Banded Physa, Ord's Kangaroo Rat, Tiger Salamander, Bigmouth Shiner, Blacknose Shiner, Common Shiner, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Cassin's Sparrow, Grasshopper Sparrow, Thirteen-lined Ground Squirrel, Stonecat, Plains Spadefoot Toad, Plain's Topminnow, Spiny Softshell Turtle, Meadow Vole

Threats to Species or Habitat: Northern Harrier is especially vulnerable due to nesting habitat declines in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are then consumed by the owls. Bobolink are affected by early cutting of hayfields during peak nesting periods and habitat loss due to land conversion (esp. meadows and prairies). Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. American Bittern suffer from loss of marsh and wetland foraging and breeding habitats due to habitat conversion or recreational use. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Short-eared Owl are vulnerable to the loss of open grassland habitat of sufficient size for successful nesting, either by conversion to agriculture, overgrazing, recreation and development. Horned Lark are a ground nesting species vulnerable to the conversion of shortgrass prairie to agriculture or development. This site contains active agricultural areas, livestock grazing, and a heavy recreational presence of trails, trailhead, and boating at Lagerman Reservoir open space, as well as busy Oxford Road.

Habitat Descriptions:

Habitat (General): Lagerman Reservoir and wetlands, wet meadow, salt meadows, creek and grassland.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Open Water, Invasive Perennial Grassland, Western Great Plains Shortgrass Prairie

Western Great Plains Floodplain Herbaceous Wetland, Developed, Medium - High Intensity, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Foothill and Piedmont Grassland, Developed, Open Space - Low Intensity

Size: 494 acres

Elevation: 5084-5174 feet (Mean = 5123 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #16

Year Revised: 2013

Year Established: 1983

Common Name: Gaynor Lakes

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Two areas located at the intersection of Oxford Rd. and N 95th St. in the Hillcrest Heights subdivision.

Designation Description: Lake, shore, marsh and wetland supporting a high diversity and density of avian species, including migrating waterfowl. Grassland habitat used as Burrowing Owl nesting habitat. One of only two natural playas in Boulder County (the other is Sombrero Marsh - CWH37).

Key Species:

SSC Known Occurrence: Burrowing Owl (*Athene cunicularia*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); American Bittern (*Botaurus lentiginosus*); Avian biodiversity

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Brazilian Free-tailed Bat, Eastern Red Bat, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Bobolink, Lark Bunting, Double-crested Cormorant, Iowa Darter, Johnny Darter, Wood Duck, Mottled Duskywing, Bald Eagle, Great Egret, Prairie Falcon, Giant Floater, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Eastern Grebe, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Black-crowned Night Heron, Great Blue Heron, Horned Lark, Short Horned Lizard, Brassy Minnow, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Fringed Myotis, River Otter, Short-eared Owl, Cylindrical Papershell, Banded Phylla, Mountain Plover, Ord's Kangaroo Rat, Tiger Salamander, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Cassin's Sparrow, Fox Sparrow, Grasshopper Sparrow, Spotted Ground Squirrel, Thirteen-lined Ground Squirrel, Stonecat, Plains Spadefoot Toad, Plain's Topminnow, Meadow Vole

Threats to Species or Habitat: Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are then consumed by the owls. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. American Avocet are sensitive to loss of habitat created by vernal flooding regimes as a result of agricultural water diversions of in-stream flows and urban flood control projects. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity.

Habitat Descriptions:

Habitat (General): Little Gaynor Lake is one of two naturally occurring playas in Boulder County (shallow with no outflow and fed primarily by drainage and groundwater); Includes wetland vegetation around perimeter. Second wetland 1/2 mile west of Little Gaynor Lake. Grasslands near lake.

Southwest Regional Gap Analysis Project Landcover Types: Open Water, Agriculture, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Riparian Woodland and Shrubland, Developed, Open Space - Low Intensity.

Size: 70 acres

Elevation: 5015-5056 feet (Mean = 5023 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #17

Year Revised: 2013

Year Established: 1978

Common Name: Panama Reservoir

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located near the intersection of Mineral Rd. and N 115th St. Includes reservoir and wooded corridor east of the reservoir.

Designation Description: Lake, riparian and associated cottonwood trees serving as habitat for Bald Eagle and Great Blue Heron nesting and foraging. Area supports the highest nesting concentration of Double-crested Cormorant in Boulder County, and a colony of Black Crowned Night Heron. American Pelican concentration area.

Key Species:

SSC Known Occurrence: Great Blue Heron (*Ardea herodias*); Bald Eagle (*Haliaeetus leucocephalus*); Double-crested Cormorant (*Phalacrocorax auritus*); Great Egret (*Ardea alba*); Black Crowned Night Heron (*Nycticorax nycticorax*)

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Brazilian Free-tailed Bat, Eastern Red Bat, Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Lark Bunting, Hornyhead Chub, Iowa Darter, Johnny Darter, Wood Duck, Mottled Duskywing, Prairie Falcon, Giant Floater, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Eastern Grebe, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Belted Kingfisher, Horned Lark, Brassy Minnow, Northern Mockingbird, Olive-back Pocket Mouse, Fringed Myotis, River Otter, Burrowing Owl, Short-eared Owl, Cylindrical Papershell, Banded Physa, Tiger Salamander, Bigmouth Shiner, Common Shiner, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Spotted Ground Squirrel, Thirteen-lined Ground Squirrel, Stonecat, Great Plains Toad, Plains Spadefoot Toad, Plain's Topminnow, Spiny Softshell Turtle, Meadow Vole

Threats to Species or Habitat: Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. Great Blue Heron are sensitive to the loss of nest site trees or human site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Black-crowned Night Herons are vulnerable to human disturbance at nesting colonies which tend to be grouped in restricted areas, and as top predators they are sensitive to the accumulation of toxins in their habitat which can be found in their prey. Double-crested Cormorant are vulnerable to loss of nesting habitat adjacent to aquatic habitat, and due to colonial breeding concentrations, are susceptible in high numbers to human encroachment. This area contains active agriculture, residences, and is subject to oil and gas maintenance and development.

Habitat Descriptions:

Habitat (General): Reservoir with surrounding riparian habitat of cottonwood trees, willow trees and shrubs.

Southwest Regional Gap Analysis Project Landcover Types: Open Water, Agriculture, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Riparian Woodland and Shrubland.

Size: 462 acres

Elevation: 4999-5058 feet (Mean = 5043 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: Private property and BCPOS Open Space and CE.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #19

Year Revised: 2013

Year Established: 1983

Common Name: City of Boulder Watershed

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located NW of the Rainbow Lakes Campground at the terminus of CR116. Includes set of connected lakes within the closed-to-public City of Boulder Watershed.

Designation Description: High-quality aquatic habitat with functional riparian habitat, protected habitat encompassing sub-alpine lakes, streams, wetlands, riparian areas and associated forest. The watershed supports Greenback Cutthroat Trout and potentially supports other rare aquatic species of concern. American Wolverine have been observed in this area.

Key Species:

SSC Known Occurrence: Greenback Cutthroat Trout (*Oncorhynchus clarki*)

SSC Potential Occurrence (within habitat area): Chorus Frog, Tiger Salamander, Boreal Toad, American Dipper, Belted Kingfisher, Golden-crowned Kinglet, Boreal Owl, Williamson's Sapsucker, Veery, Wilson's Warbler, American Three-toed woodpecker, Rocky Mountain Arctic Jutta, Beaver, Canada Lynx, American Marten, Long-eared Myotis, American Water Shrew, Pika, White-tailed Ptarmigan, Townsend's Big-eared Bat.

Threats to Species or Habitat: Greenback Cutthroat Trout are vulnerable to hybridization with and predation by other native and non-native salmonids; degradation of stream habitat quality by logging, livestock over-grazing, water diversions, organic and inorganic water pollution and high-intensity recreational use of streams. Due to recent evidence of hybridization with other salmonids, this species of trout is currently under review by the US Fish and Wildlife Service for re-assessment of its listing as a Threatened species under the Endangered Species Act. This area contains active agriculture, residences, and is subject to oil and gas maintenance and development.

Habitat Descriptions:

Habitat (General): Alpine lakes, reservoirs, streams, riparian areas and associated forest.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Open Water, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine-Montane Riparian Shrubland, Developed, Medium - High Intensity, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Aspen Forest and Woodland.

Size: 525 acres

Elevation: 10206-10860 feet (Mean = 10380 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: City of Boulder.

Current Resource Protection and Management Designations:

See relevant city of Boulder management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #20

Year Revised: 2013

Year Established: 1983

Common Name: Como Creek

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located west of the intersection of SH72 and Rainbow Lake Rd.

Designation Description: Isolated reach of sub-alpine stream uniquely supporting one of two originally-considered pure-strain Greenback Cutthroat Trout populations. The habitat configuration has the potential to influence future conservation efforts.

Key Species:

SSC Known Occurrence: Greenback Cutthroat Trout (*Oncorhynchus clarki*)

SSC Potential Occurrence (within habitat area): Chorus Frog, Tiger Salamander, Boreal Toad, American Dipper, Northern Goshawk, Belted Kingfisher, Golden-crowned Kinglet, Boreal Owl, Williamson's Sapsucker, Veery, Wilson's Warbler, American Three-toed woodpecker, Rocky Mountain Arctic Jutta, Beaver, Canada Lynx, American Marten, Long-eared Myotis, American Water Shrew, Common Garter Snake.

Threats to Species or Habitat: Greenback Cutthroat Trout are vulnerable to hybridization with and predation by other native and non-native salmonids; degradation of stream habitat quality by logging, livestock over-grazing, water diversions, organic and inorganic water pollution and high-intensity recreational use of streams. Due to recent evidence of hybridization with other salmonids, this species of trout is currently under review by the US Fish and Wildlife Service for re-assessment of its listing as a Threatened species under the Endangered Species Act. The University of Colorado Mountain Research Campus is adjacent to this stream within this area.

Habitat Descriptions:

Habitat (General): Subalpine stream and riparian habitat.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland.

Size: 275 acres

Elevation: 9254-10559 feet (Mean = 9955 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS and State of Colorado.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #21

Year Revised: 2013

Year Established: 1983

Common Name: Eagle Rock (Previously named Boulder Falls Area)

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located east of the intersection of North Boulder Creek with SH119.

Designation Description: Steep rock cliffs supporting long-documented nesting of Golden Eagle.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*)

SSC Potential Occurrence (within habitat area): Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Uinta Chipmunk, Hudsonian Emerald Dragonfly, Mottled Duskywing, American Emerald, Peregrine Falcon, Northern Flicker, Gray Fox, Chorus Frog, Northern Pocket Gopher, River Jewelwing, Northern Rock Mouse, Little Brown Myotis, Western Small-footed Myotis, Long-eared Owl, Northern Pygmy Owl, North American Porcupine, American Redstart, Western Scrub-Jay, Rocky Mountain Bighorn Sheep, Dwarf Shrew, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Fox Sparrow, Heather Vole, Virginia's Warbler, Wilson's Warbler, Rock Wren

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. This area is a busy climbing area in both summer and winter, affected by multiple potential nest sites.

Habitat Descriptions:

Habitat (General): Steep west and southwest facing rock cliffs.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Agriculture, Rocky Mountain Alpine-Montane Wet Meadow, Southern Rocky Mountain Montane-Subalpine Grassland.

Size: 299 acres

Elevation: 6386-7595 feet (Mean = 6910 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #23

Year Revised: 2013

Year Established: 1983

Common Name: Boulder Reservoir

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration:

Unique Biodiversity:

Location (General): Area mainly located on the western and northern perimeter of Boulder Reservoir.

Designation Description: Cattail marsh, emergent wetlands and associated grasslands support Burrowing Owl, Northern Harrier, Great Blue Heron and other species of special concern. Also includes Axelson Mitigation Ponds which provide habitat for the Plains Top Minnow, a species under ESA review by the USFWS.

Key Species:

SSC Known Occurrence: Burrowing Owl (*Athene cunicularia*); Northern Harrier (*Circus cyaneus*); American Bittern (*Botaurus lentiginosus*); Great Blue Heron (*Ardea herodias*); Black Tailed Prairie Dog (*Cynomys ludovicianus*)

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Brazilian Free-tailed Bat, Beaver, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Bobolink, Lark Bunting, Double-crested Cormorant, Iowa Darter, Johnny Darter, Wood Duck, Mottled Duskywing, Bald Eagle, Great Egret, Prairie Falcon, Giant Floater, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Plains Sharp-tailed Grouse, Ferruginous Hawk, Rough-legged Hawk, Black-crowned Night Heron, Belted Kingfisher, Horned Lark, Short Horned Lizard, Brassy Minnow, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Fringed Myotis, River Otter, Short-eared Owl, Cylindrical Papershell, Banded Physa, Mountain Plover, Ord's Kangaroo Rat, Tiger Salamander, Bigmouth Shiner, Common Shiner, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Cassin's Sparrow, Grasshopper Sparrow, Spotted Ground Squirrel, Thirteen-lined Ground Squirrel, Stonecat, Plains Spadefoot Toad, Plain's Topminnow, Spiny Softshell Turtle, Meadow Vole

Threats to Species or Habitat: Northern Harrier is especially vulnerable due to nesting habitat declines in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are then consumed by the owls. American Bittern suffer from loss of marsh and wetland foraging and breeding habitats due to habitat conversion or recreational use. Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Plains Topminnow are sensitive to siltation, loss of streamside vegetation or backwater breeding habitat, low-flow conditions, reduced water quality or increased water temperature and competition from exotic species such as the western mosquitofish (*Gambusia affinis*). This area contains significant trail mileage and sustains heavy recreational use, including organized events and competitions. It also contains a designated model airplane aerodrome. It is bisected by rural 55th Street.

Habitat Descriptions:

Habitat (General): Cattail marshes, emergent wetlands and grasslands; Isolated ponds.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Open Water, Invasive Perennial Grassland, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Shortgrass Prairie, Developed, Medium - High Intensity, North American Arid West Emergent Marsh.

Size: 538 acres

Elevation: 5172-5238 feet (Mean = 5197 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder and private property.

Current Resource Protection and Management Designations:

See relevant city of Boulder management plans. The Axelson Ponds are protected under a seasonal wildlife closure (for protection of nesting Osprey nearby) from March 15 to September 10.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #25

Year Revised: 2013

Year Established: 1978

Common Name: Walden and Sawhill Ponds

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located NW of the intersection of N 75th St. and Valmont Rd.

Designation Description: Cottonwood gallery forest along Boulder Creek and adjacent mature cottonwood, willows, shrubs, and emergent wetlands associated with reclaimed gravel ponds supporting Great Blue Heron, Black Crowned Night Heron, Wood Duck and other species of special concern.

Key Species:

SSC Known Occurrence: Great Blue Heron (*Ardea herodias*); Least Bittern (*Ixobrychus exilis*); Black-Crowned Night Heron (*Nycticorax nycticorax*); Wood Duck (*Aix sponsa*); American Avocet (*Recurvirostra americana*); Yellow-headed Black Bird (*Xanthocephalus xanthocephalus*)

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Brazilian Free-tailed Bat, Eastern Red Bat, Beaver, American Bittern, Yellow-headed Blackbird, Colorado Blue, Hornyhead Chub, Double-crested Cormorant, Iowa Darter, Johnny Darter, Bald Eagle, Great Egret, Prairie Falcon, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Eared Grebe, Northern Harrier, Belted Kingfisher, Brassy Minnow, Northern Mockingbird, River Otter, Cylindrical Papershell, Banded Physa, Tiger Salamander, Bigmouth Shiner, Blacknose Shiner, Common Shiner, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Simius Roadside Skipper, Common Garter Snake, Stonecat, Plains Spadefoot Toad, Plain's Topminnow, Spiny Softshell Turtle, Meadow Vole.

Threats to Species or Habitat: Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Least Bittern are vulnerable to the development and loss of dense wetland breeding/feeding habitat and human encroachment. Black-crowned Night Herons are vulnerable to human disturbance at nesting colonies which tend to be grouped in restricted areas, and as top predators they are sensitive to the accumulation of toxins in their habitat which can be found in their prey. Wood Ducks are sensitive to the removal of trees with suitable nesting cavities situated near vegetated water sources, such as adjacent to American Beaver dams (often removed due to concerns over water conveyance). American Avocet are sensitive to loss of habitat created by vernal flooding regimes as a result of agricultural water diversions of in-stream flows and urban flood control projects. Yellow-headed Blackbird are vulnerable to loss of nesting and foraging habitat in emergent vegetation of wetlands and lakesides due to water management drawdowns and drought conditions.

Habitat Descriptions:

Habitat (General): Reclaimed gravel ponds mixed with wetlands of emergent and shrub vegetation with scattered cottonwood trees.

Southwest Regional Gap Analysis Project Landcover Types: Open Water, Western Great Plains Riparian Woodland and Shrubland,, Agriculture, Western Great Plains Floodplain Herbaceous Wetland, Developed, Medium - High Intensity, Invasive Perennial Grassland, Developed, Open Space - Low Intensity.

Size: 365 acres

Elevation: 5117-5150 feet (Mean = 5129 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: State of Colorado, City of Boulder, BCPOS Open Space and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #26

Year Revised: 2013

Year Established: 1978

Common Name: White Rocks

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located between N 75th St. and N 95th St., north side of Boulder Creek.

Designation Description: This site is part of the White Rocks Natural Area. Rare geologic formation (Fox Hills Sandstone) which is particularly important to conserve several species of special concern, in particular Ants and Bees.

Key Species:

SSC Known Occurrence: Prairie Falcon (*Falco mexicanus*); Ants (*Aphaenogaster huachucanum*, *Formica laeviceps*, *Stigmatomma pallipes*, *Pheidole elecebra*); a Miner Bee (*Macrotera opuntiae*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Miner (*Perdita opuntiae*) Bee, Colorado Chipmunk, Uinta Chipmunk, Mottled Duskywing, Moss's Elfyn, Gray Fox, Regal Fritillary, Northern Pocket Gopher, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, White-tailed Jackrabbit, Horned Lark, Short Horned Lizard, Northern Grasshopper Mouse, Northern Rock Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Burrowing Owl, Short-eared Owl, Band-tailed Pigeon, Mountain Plover, North American Porcupine, Black-tailed Prairie Dog, Ord's Kangaroo Rat, Prairie Rattlesnake, American Redstart, Western Scrub-Jay, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoo Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Brewer's Sparrow, Cassin's Sparrow, Grasshopper Sparrow, Spotted Ground Squirrel, Thirteen-lined Ground Squirrel, Stonecat, Sage Thrasher, Plains Spadefoot Toad, Veery, Plumbeous Vireo, Heather Vole, Meadow Vole, Virginia's Warbler, Cedar Waxwing, Rock Wren

Threats to Species or Habitat: The ant species of special concern, such as *P. elecebra*, have complicated life histories and depend on multiple host plants and invertebrates; the application of pesticides or other actions which reduce regional invertebrate biodiversity are a direct threat to this group. Native pollinators, such as *M. opuntiae*, are highly susceptible to pesticides and common agricultural practices such as those used to reduce weed growth or plant crops or destruction of White Rock habitat. Prairie Falcon forage in this area on prey such as small mammals, and are vulnerable to human encroachment or development of this habitat.

Habitat Descriptions:

Habitat (General): Outcropping of Fox Hills Sandstone geologic formation (a.k.a. turtleback sandstone formation), surrounded by shortgrass prairie habitat and adjacent to Boulder Creek riparian corridor.

Southwest Regional Gap Analysis Project Landcover Types: Invasive Perennial Grassland, Western Great Plains Shortgrass Prairie, Western Great Plains Foothill and Piedmont Grassland, Western Great Plains Sandhill Shrubland, Agriculture, Western Great Plains Riparian Woodland and Shrubland.

Size: 64 acres

Elevation: 5087-5240 feet (Mean = 5171 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder and BCPOS CE.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. The Western Portion of the area is designated as a Habitat Conservation Area by the City of Boulder Open Space and Mountain Parks Department. The western area is closed to all public access from November 1- July 31 each year to protect nesting bald eagles. During the period from August 1- October 31, public access is

provided through staff led, guided hikes. The Eastern Portion of the area is currently managed privately, but following Oct 31, 2013, the area will also be designated as a Habitat Conservation area and likely managed in a manner consistent with the western portion.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #27

Year Revised: 2013

Year Established: 1978

Common Name: Lower Boulder Creek Riparian Area

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration: X

Unique Biodiversity:

Location (General): Located between N 75th St. and US287, including creek and riparian lands around Boulder Creek.

Designation Description: Riparian area with cottonwoods along Boulder Creek that provides nesting habitat for many avian species, including Bald Eagle nesting and foraging areas, and Great Blue Heron nesting east of 95th Street. This is only the second known heronry in the county, containing at least 200 nests historically (25 currently), and has been active for over 60 years. Historical Great Egret nesting. Breeding habitat for Northern Leopard Frog and confirmed presence of River Otter.

Key Species:

SSC Known Occurrence: Great Blue Heron (*Ardea herodias*); Great Egret (*Ardea alba*); Bald Eagle (*Haliaeetus leucocephalus*); Northern Leopard Frog (*Rana pipiens*); River Otter (*Lontra canadensis*); Tiger Salamander (*Ambystoma tigrinum*); Northern Harrier (*Circus cyaneus*); Common Garter Snake (*Thamnophis sirtalis*); Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*); Black Tailed Prairie Dog (*Cynomys ludovicianus*).

SSC Potential Occurrence (within habitat area): American Avocet, Hops Feeding Azure, American Badger, Brazilian Free-tailed Bat, Eastern Red Bat, American Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Bobolink, Indigo Bunting, Lark Bunting, Lazuli Bunting, Colorado Chipmunk, Hornyhead Chub, Double-crested Cormorant, Long-billed Curlew, Blue-ringed Dancer, Iowa Darter, Johnny Darter, American Dipper, Wood Duck, Ring-neck Duck, Bald Eagle, Prairie Falcon, Northern Flicker, Willow Flycatcher, Gray Fox, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Rough-legged Hawk, Belted Kingfisher, Brassy Minnow, Northern Mockingbird, Little Brown Myotis, Western Small-footed Myotis, River Otter, Long-eared Owl, Cylindrical Papershell, Banded Physa, North American Porcupine, American Redstart, Western Scrub-Jay, Bigmouth Shiner, Blacknose Shiner, Common Shiner, Dwarf Shrew, Least Shrew, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Milk Snake, Stonecat, Plain's Topminnow, Spiny Softshell Turtle, Heather Vole, Meadow Vole, Cedar Waxwing, Red-headed Woodpecker

Threats to Species or Habitat: Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Great Egret are sensitive to the loss of nest site trees, invasion of non-native tree cover or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. River Otter are vulnerable to reduction of water quality reducing prey availability, disturbance of vacated Beaver bank dens used as breeding sites, and excessive trapping. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production; endocrine and developmental disruption due to agricultural pesticides. Northern Harrier are a ground-nesting species vulnerable to loss of abundant, dense Vegetation used for nesting cover, especially in wetlands; urbanization which increases predation of nesting sites by domesticated and urban-adapted wildlife; habitat loss, which reduces native small mammals used as prey, caused by such land uses as large-scale agriculture and expanding urbanization. Common Garter Snake are sensitive to fragmentation or loss of wetland, riparian or lakeside habitats and reduction of vegetative cover; urbanization and recreational activities can exert direct mortality from vehicle strikes or predation by domestic animals; reduction of water quality in habitat lowers Availability of prey and reduces survivorship. Yellow-headed Blackbird are vulnerable to the loss of dense, emergent vegetation habitat, especially cattail marshes and wetlands; require open-

water nesting sites with specific water depths (1-2.5') which can be disrupted by such affects as drought or water managment practices. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses.

Habitat Descriptions:

Habitat (General): Creek and adjacent riparian area with cottonwoods; grasslands.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Floodplain Herbaceous Wetland, Open Water, Developed, Open Space - Low Intensity, Western Great Plains Shortgrass Prairie, Western Great Plains Foothill and Piedmont Grassland, Invasive Southwest Riparian Woodland and Shrubland, Western Great Plains Sandhill Shrubland, Invasive Perennial Grassland.

Size: 1175 acres

Elevation: 5011-5124 feet (Mean = 5073 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder, BCPOS CE and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. The Western Portion of the area is designated as a Habitat Conservation Area by the City of Boulder Open Space and Mountain Parks Department. The western area is closed to all public access from November 1- July 31 each year to protect nesting bald eagles. During the period from August 1- October 31, public access is provided through staff led, guided hikes. The Eastern Portion of the area is currently managed privately, but following Oct 31, 2013, the area will also be designated as a Habitat Conservation area and likely managed in a manner consistent with the western portion. The private property east of 95th Street is managed as a working cattle operation. Public access is not permitted.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #28

Year Revised: 2013

Year Established: 1983

Common Name: Diamond Lake Outlet

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located west of the terminus of Fourth of July Road, downstream of Diamond Lake.

Designation Description: Rare high-elevation waterfall area having suitable water quality and unique habitat configuration necessary for Black Swift nesting.

Key Species:

SSC Known Occurrence: Black Swift (*Cypseloides niger*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Black Swift are vulnerable to water management, forestry practices or recreational activities which reduce water quality and the production of aquatic insect prey needed for successful nesting.

Habitat Descriptions:

Habitat (General): High-elevation waterfall and adjacent granite rock ledges.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland.

Size: 13 acres

Elevation: 10235-10890 feet (Mean = 10557 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #29

Year Revised: 2013

Year Established: 1983

Common Name: Chittenden Meadows

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration: X

Unique Biodiversity: X

Location (General): Located west of Fourth of July Road, partially inside the Indian Peaks Wilderness, and adjacent to Chittenden Mountain.

Designation Description: Willow carr, adjacent old-growth spruce forest and tundra acting as a Montane Parkland supporting breeding, feeding and resting habitat for numerous species of special concern. Elk concentration area and hilltopping butterfly habitat.

Key Species:

SSC Known Occurrence: Rare Butterfly concentration; Avian and Small Mammal biodiversity; Elk (*Cervus elaphus*) concentration; White-tailed Ptarmigan (*Lagopus leucura*); White-winged Crossbill (*Loxia leucoptera*); Boreal Owl (*Aegolius funereus*); Brewer's Sparrow (*Spizella breweri*); Northern Flicker (*Colaptes auratus*); Northern Goshawk (*Accipiter gentilis*); Golden-crowned Kinglet (*Regulus satrapa*); Fox Sparrow (*Passerella iliaca*); Wilson's Warbler (*Cardellina pusilla*); American Three-toed Woodpecker (*Picoides dorsalis*); Rock Wren (*Salpinctes obsoletus*); Pika (*Ochotona princeps*); Uinta Chipmunk (*Neotamias umbrinus*); Northern Pocket Gopher (*Thomomys talpoides*)

SSC Potential Occurrence (within habitat area): American Marten (*Martes americana*); Canada Lynx (*Lynx canadensis*)

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. Elk are sensitive to human development and encroachment as well as habitat degradation. The listed butterflies are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. White-tailed Ptarmigan are vulnerable forestry and recreational activities which reduce breeding and wintering habitat, particularly in willow carr and road construction along stream corridors; anticipated effects of global climate change may increase this species vulnerabilities. White-winged Crossbill are vulnerable to forestry and recreational activities which may impact coniferous forest habitat used for breeding and foraging, and anticipated effects of global climate change may increase this species vulnerabilities. Boreal owl are sensitive to forestry and recreational activities which reduce mature and dead trees used for nesting sites. Brewer's Sparrow are vulnerable to alteration of high-elevation shrubland habitat. Northern Flicker are susceptible to habitat fragmentation which reduces the availability of their preferred terrestrial invertebrates and to practices which reduce the availability of trees with dead or diseased tree trunks for nesting. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers. Golden-crowned Kinglet are vulnerable to forestry practices and recreational activities which reduce boreal spruce-fir forests and other habitats needed for nesting. Fox Sparrow are vulnerable to grazing or other practices which impact willow carr and understory breeding sites. Wilson's Warbler are sensitive to forestry, agricultural or recreational activities which reduce or fragment riparian habitats used for breeding. American Three-toed Woodpecker are vulnerable to forestry or recreational activities which remove trees with suitable nesting cavities as well as fragment habitat. Rock Wren are sensitive to practices which increase habitat fragmentation leading to increased nest parasitism or predation. Pika are vulnerable to human disturbance to their habitats such as recreational activities and development which may be magnified by environmental stressors associated with global climate change, as pikas appear to have high thermal sensitivity, unique dietary and hibernation requirements and are more likely to exhibit stress or for populations to be extirpated at low elevations and latitudes due to increasing temperatures. Uinta Chipmunk are sensitive to practices which fragment habitat and it is further

vulnerable to a lack of source colonists from other populations because it is isolated. Northern Pocket Gopher are vulnerable to practices which fragment habitat. Avian and small mammal biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. This area contains significant trail mileage from USFS Trails 812 and 975, which parallels the riparian area.

Habitat Descriptions:

Habitat (General): Old-growth Engelmann spruce, subalpine fir forests and subalpine willow carr along with krummholz and alpine tundra.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Dry Tundra, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Alpine Fell-Field, Rocky Mountain Subalpine Mesic Meadow, Rocky Mountain Alpine-Montane Wet Meadow, Rocky Mountain Aspen Forest and Woodland.

Size: 1223 acres

Elevation: 10144-12060 feet (Mean = 10960 feet)

Life Zone: Subalpine

Ownership: (Private: Public: X)

Comments: USFS.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #30

Year Revised: 2013

Year Established: 1983

Common Name: Arapaho Ranch - Tucker Homestead

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration: X

Unique Biodiversity: X

Location (General): Area between Eldora and Nederland, north of the Eldora Ski Road, and south of Caribou Road, following a segment of Middle Boulder Creek.

Designation Description: Sub-alpine willow carr, riparian area, montane park, and old-growth forest supporting breeding, feeding and resting habitat for numerous species of special concern. Contains nearly 2 miles of Middle Boulder Creek.

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) concentration area; Brewer's Sparrow (*Spizella breweri*); White-tailed Ptarmigan (*Lagopus leucura*); White-winged Crossbill (*Loxia leucoptera*); Band-tailed Pigeon (*Patagioenas fasciata*); Northern Goshawk (*Accipiter gentilis*); Northern Harrier (*Circus cyaneus*); Pine Siskin (*Spinus pinus*); Rocky Mountain Arctic Jutta (*Oeneis jutta*); Ring-necked Duck (*Aythya collaris*); Golden-crowned Kinglet (*Regulus satrapa*); Fox Sparrow (*Passerella iliaca*); Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. Elk are sensitive to human development and encroachment as well as habitat degradation. Brewer's Sparrow are vulnerable to alteration of high-elevation shrubland habitat. White-tailed Ptarmigan are vulnerable forestry and recreational activities which reduce breeding and wintering habitat, particularly in willow carr and road construction along stream corridors; anticipated effects of global climate change may increase this species vulnerabilities. White-winged Crossbill are vulnerable to forestry and recreational activities which may impact coniferous forest habitat used for breeding and foraging, and anticipated effects of global climate change may increase this species vulnerabilities. Band-tailed Pigeon are vulnerable to overhunting and practices which increase habitat fragmentation. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers. Northern Harrier is especially vulnerable due to nesting habitat declines in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Pine Siskin are vulnerable to forestry or recreational practices which fragment habitat which may increase predation or parasitism of adults or young. The Rocky Mountain Arctic Jutta is dependent on open lodgepole pine stands and any alteration of the vegetational composition of these habitats could result in local extirpation. Ring-necked Duck are vulnerable to development or degradation of wetland habitat on their breeding grounds, wintering grounds, and migration routes; particularly vulnerable to consuming spent lead-shot found on the wetland bottoms where they feed. Golden-crowned Kinglet are vulnerable to forestry practices and recreational activities which reduce boreal spruce-fir forests and other habitats needed for nesting. Fox Sparrow are vulnerable to grazing or other practices which impact willow carr and understory breeding sites. Avian and small mammal biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity.

Habitat Descriptions:

Habitat (General): Montane parkland of glacial origin with mixed old-growth forest, sub-alpine willow carr, meadows, riparian woodlands and extensive wetlands. Middle Boulder Creek and North Beaver Creek run through the site.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky

Mountain Montane Mesic Mixed Conifer Forest and Woodland, Agriculture, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Alpine-Montane Wet Meadow, Inter-Mountain Basins Montane Sagebrush Steppe, Open Water, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Developed, Medium - High Intensity, Rocky Mountain Gambel Oak-Mixed Montane Shrubland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Southern Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland.

Size: 1193 acres

Elevation: 8336-9450 feet (Mean = 8637 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: Private property, USFS and Private CE.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #31

Year Revised: 2013

Year Established: 1983

Common Name: Boulder Mountain Parks - Eldorado Mountain

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration:

Unique Biodiversity:

Location (General): Habitat areas roughly follow the Flatirons formations starting at Mt. Sanitas in the north and running south to Eldorado Mtn. and the southern county border.

Designation Description: Tilted sandstone cliffs (Boulder Flatirons) that provide high-quality nesting habitat for several cliff nesting raptors, including Golden Eagle, Peregrine Falcon and Prairie Falcon. Caves and cracks in this area support breeding populations of several bat species of special concern, such as the Townsend's Big-eared Bat. The (proposed) CWH boundaries generally follow OSMP seasonal wildlife closure boundaries.

Key Species:

SSC Known Occurrence: Peregrine Falcon (*Falco peregrinus*); Prairie Falcon (*Falco mexicanus*); Golden Eagle (*Aquila chrysaetos*); Flammulated Owl (*Otus flammeus*); Townsend's Big Eared Bat (*Corynorhinus townsendii*); Fringed Myotis (*Myotis thysanodes*); Big Brown Bat (*Eptesicus fuscus*); Little Brown Myotis (*Myotis lucifugus*); Hops Feeding Azure (*Clestina humulus*); Three-toed Woodpecker (*Picoides dorsalis*); Ringtail (*Bassariscus astutus*); Virginia's Warbler (*Oreothlypis virginiae*); Plumbeous Vireo (*Vireo plumbeus*); Pine Siskin (*Spinus pinus*)

SSC Potential Occurrence (within habitat area): American Badger, Hoary Bat, Silver-haired Bat, Beaver, Indigo Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Lake Darnier, American Dipper, Hudsonian Emerald Dragonfly, Mottled Duskywing, Moss's Elfin, American Emerald, Northern Flicker, Willow Flycatcher, Gray Fox, Chorus Frog, Northern Pocket Gopher, White-tailed Jackrabbit, River Jewelwing, Belted Kingfisher, Northern Rock Mouse, Fringed Myotis, Western Small-footed Myotis, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, Prairie Rattlesnake, American Redstart, Tiger Salamander, Western Scrub-Jay, Rocky Mountain Bighorn Sheep, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sage Thrasher, Veery, Heather Vole, Wilson's Warbler, Cedar Waxwing, Rock Wren, Ovenbird

Threats to Species or Habitat: Peregrine Falcon, Prairie Falcon and Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. This area receives heavy climbing pressure, necessitating seasonal closures of crags and patrol during the nesting season. Flammulated Owl are vulnerable to forestry practices in old growth forest and pesticides use in the habitat can lead to nest failure. Townsend's Big Eared Bat, Fringed Myotis, Big Brown Bat and Little Brown Myotis are vulnerable to loss of roosting and breeding habitat by habitat fragmentation; increased recreational activities and development may increase the potential of human-transmitted White-Nosed Syndrome into winter colonies; bats accumulate toxins if found in prey near habitat. Hops Feeding Azure are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. American Three-toed Woodpecker are vulnerable to forestry or recreational activities which remove trees with suitable nesting cavities as well as fragment habitat. Ringtail and vulnerable to excessive or incidental trapping, fragmentation of habitat which reduce access to multiple den locations, mortality from automobile strike and insufficient knowledge of population levels. Virginia's Warbler are vulnerable to forestry practices which may lead to increased cowbird parasitism and reduction of breeding success. Plumbeous Vireo are sensitive to fragmentation of ponderosa pine habitats. Pine Siskin are vulnerable to forestry or recreational practices which fragment habitat which may increase predation or parasitism of adults or young.

Habitat Descriptions:

Habitat (General): Tilted sandstone cliffs and rock outcrops, commonly called the Flatirons that provide suitable ledges and crevices for nesting raptors.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Agriculture, Inter-Mountain Basins Montane Sagebrush Steppe, Inter-Mountain Basins Big Sagebrush Shrubland, Rocky Mountain Lodgepole Pine Forest, Invasive Perennial Grassland.

Size: 1474 acres

Elevation: 5597-8504 feet (Mean = 7032 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: City of Boulder, State of Colorado, NCAR and private property.

Current Resource Protection and Management Designations:

See relevant city of Boulder management plans. Raptor nesting sites are protected with seasonal closures (1 February – 31 July or until warranted). Bat roosts are either protected seasonally (April thru September / October) via closures or with gates.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #35

Year Revised: 2013

Year Established: 1983

Common Name: Lost Lake

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): West of the town of Eldora, on US Forest Service Land, situated 1.5mi from the Hesse Trailhead.

Designation Description: Sub-alpine lake and associated wetlands known to support Rocky Mountain Capshell and likely supporting other lake-associated species of special concern.

Key Species:

SSC Known Occurrence: Rocky Mountain Capshell (*Acroloxus coloradensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Rocky Mountain Capshell are only known in Colorado from Boulder County (based on re-discovery in the county) and are vulnerable to commercial and recreational development surrounding aquatic habitats which decrease water quality; remaining habitats are known to be polluted and in areas of rapid urbanization and population growth; habitats on private land are not protected and inaccessible to population assessment; commercial drawdown of water levels for recreational use may cause local extirpation; salting of roads around the habitat may increase lake pollution and threat to the species.

Habitat Descriptions:

Habitat (General): Subalpine lake with perimeter wetlands and bordered by subalpine forests.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland.

Size: 53 acres

Elevation: 9688-10051 feet (Mean = 9820 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #36

Year Revised: 2013

Year Established: 1983

Common Name: Carolyn Holmberg Preserve at Rock Creek Farm

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): A fenced area inside the Rock Creek Farm, Boulder County Open Space property. Located north of Rock Creek between S 104th St. and US287.

Designation Description: Long-documented burrowing owl nesting habitat within a designated conservation area in Rock Creek Farm; rare grassland habitat within heavily developed region of county.

Key Species:

SSC Known Occurrence: Burrowing Owl (*Athene cunicularia*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); Ord's Kangaroo Rat (*Dipodomys ordii*)

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Townsend's Big-eared Bat, Tricolored Bat, Colorado Blue, Colorado Chipmunk, Mottled Duskywing, Golden Eagle, Regal Fritillary, Northern Pocket Gopher, Ferruginous Hawk, Rough-legged Hawk, Horned Lark, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Short-eared Owl, Dwarf Shrew, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Milk Snake, Cassin's Sparrow, Grasshopper Sparrow, Thirteen-lined Ground Squirrel

Threats to Species or Habitat: Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are then consumed by the owls. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Ord's Kangaroo Rat is vulnerable to the habitat fragmentation and loss of restricted habitat.

Habitat Descriptions:

Habitat (General): Prairie Dog colony and associated grassland.

Southwest Regional Gap Analysis Project Landcover Types: Invasive Perennial Grassland, Agriculture, Developed, Open Space - Low Intensity.

Size: 41 acres

Elevation: 5261-5286 feet (Mean = 5274 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #37

Year Revised: 2013

Year Established: 1983

Common Name: Sombrero Marsh

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located south of the intersection between SH7 and N 63rd St.

Designation Description: One of two natural playas in Boulder County (the other is Gaynor Lake - CWH16) with emergent wetlands supporting Great Blue Heron and Black-crowned Night Heron as well as amphibian species of special concern. This naturally-occurring, perennially-open water body also provides nesting and resting habitat for substantial numbers of waterfowl and shorebirds.

Key Species:

SSC Known Occurrence: Black-Crowned Night Heron (*Nycticorax nycticorax*); Great Blue Heron (*Ardea herodias*); Chorus Frog (*Pseudacris triseriata*); Yellow-headed Black Bird (*Xanthocephalus xanthocephalus*)

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Brazilian Free-tailed Bat, Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Bobolink, Lark Bunting, Double-crested Cormorant, Wood Duck, Mottled Duskywing, Bald Eagle, Great Egret, Prairie Falcon, Giant Floater, Regal Fritillary, Northern Leopard Frog, Eared Grebe; Northern Pocket Gopher, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Belted Kingfisher, Horned Lark, Short Horned Lizard, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Burrowing Owl, Short-eared Owl, Cylindrical Papershell, Banded Physa, Black-tailed Prairie Dog, Ord's Kangaroo Rat, Tiger Salamander, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Cassin's Sparrow, Grasshopper Sparrow, Spotted Ground Squirrel, Thirteen-lined Ground Squirrel, Stonecat, Plains Spadefoot Toad, Plain's Topminnow, Spiny Softshell Turtle, Meadow Vole

Threats to Species or Habitat: Black-crowned Night Herons are vulnerable to human disturbance at nesting colonies which tend to be grouped in restricted areas, and as top predators they are sensitive to the accumulation of toxins in their habitat which can be found in their prey. Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Chorus Frog are sensitive to agricultural practices which use pesticides, herbicides or fertilizers in the habitat, and vulnerable to loss of aquatic habitat quality. This area is also the site of the Thorne Ecological Institute which conducts educational field trips, birding tours, and bird banding within the site.

Habitat Descriptions:

Habitat (General): Sombrero Marsh is one of two naturally occurring playas in Boulder County (shallow with no outflow and fed primarily by drainage and groundwater); Includes wetland vegetation around perimeter.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Developed, Invasive Perennial Grassland, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Floodplain Herbaceous Wetland.

Size: 29 acres

Elevation: 5232-5254 feet (Mean = 5239 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder, Boulder County Open Space and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. Sombrero Marsh is managed as a Habitat Conservation Area (no off-trail travel without a permit). While a trail serves the eastern side of the marsh, off-trail access is limited to staff and researchers.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #38

Year Revised: 2013

Year Established: 1994

Common Name: Lazy H. Ranch Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located NE of Allenspark, near the intersection of SH7 and Rock Creek.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals.

Habitat Descriptions:

Habitat (General): Montane willow carr. Vegetation is dominated by willow shrubs, alder, birch, sedges and grasses. Rock Creek flows through site. Active beaver colony and associated ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Southern Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine-Montane Riparian Woodland, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Lower Montane-Foothill Shrubland, Invasive Perennial Grassland

Size: 159 acres

Elevation: 7959-8368 feet (Mean = 8164 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #39

Year Revised: 2013

Year Established: 1994

Common Name: Coney Flats Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located in the Indian Peaks Wilderness Area along Coney Creek west of Peaceful Valley and Camp Dick. CR96J moves through the eastern side of the habitat.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area is bisected by the Beaver Creek Trail (USFS 911) and the Coney Lake Trail (USFS 914), which parallel the creek in much of the area.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. Coney Creek flows through site.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Alpine Bedrock and Scree.

Size: 350 acres

Elevation: 9692-10292 feet (Mean = 9893 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #40

Year Revised: 2013

Year Established: 1994

Common Name: Mitchell Lake Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside the Indian Peaks Wilderness Area, NW of the Pawnee Campground at Brainerd Lake Recreation Area.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area is bisected by the very busy Mitchell Lake Trail (USFS 912).

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Aspen Forest and Woodland.

Size: 378 acres

Elevation: 10493-11479 feet (Mean = 10825 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #41

Year Revised: 2013

Year Established: 1994

Common Name: Coney Lake Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located in the Indian Peaks Wilderness Area and occupies an area roughly between the Upper Coney Lake and Coney Lake, near the Continental Divide (within 1/2 mile).

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area is accessed by the Coney Lake Trail (USFS 914).

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. This willow carr is situated between 2 lakes - Coney Lake and Upper Coney Lake.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Alpine Fell-Field, Rocky Mountain Dry Tundra.

Size: 345 acres

Elevation: 10438-11334 feet (Mean = 10819 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #42

Year Revised: 2013

Year Established: 1994

Common Name: Long Lake Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside the Indian Peaks Wilderness Area between Brainard Lake and Lake Isabelle along South St. Vrain Creek.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area is subject to perhaps the highest recreational hiking pressure in the Indian Peaks Wilderness (Pawnee Pass Trail - USFS 907). Long Lake is completely encircled by trail.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. The willow carr are situated between Long Lake and Lake Isabelle and northeast of Long Lake.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Dry Tundra, Rocky Mountain Lodgepole Pine Forest.

Size: 827 acres

Elevation: 10355-11267 feet (Mean = 10693 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #43

Year Revised: 2013

Year Established: 1994

Common Name: South St. Vrain Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located north of the intersection between CR104 and Brainard Lake Drive, near the city of Ward.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area is bisected by both the Wapiti Trail (USFS 816) and the Sourdough Trail (USFS 835).

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland.

Size: 280 acres

Elevation: 9534-10088 feet (Mean = 9834 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and BCPOS.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #44

Year Revised: 2013

Year Established: 1994

Common Name: Lefthand Reservoir Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located along the west side of Left Hand Valley Reservoir No. 2, at the end of CR104. Near the Brainard Lake recreation area

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. Lefthand Valley Reservoir is reached by 4WD road (CR 104) and subject to fishing and general recreation presence.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. Willow carr is on southwest border of Left Hand Park Reservoir.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Aspen Forest and Woodland.

Size: 249 acres

Elevation: 10645-10862 feet (Mean = 10704 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #45

Year Revised: 2013

Year Established: 1994

Common Name: Boulder Watershed Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located north of the intersection between Rainbow Lakes Rd. and North Boulder Creek. North of the Rainbow Lakes Campground

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area has perhaps the most restricted access in Boulder County.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. North Boulder Creek flows through area.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Cliff and Canyon, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland.

Size: 511 acres

Elevation: 9824-10365 feet (Mean = 10091 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: City of Boulder and USFS.

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #46

Year Revised: 2013

Year Established: 1994

Common Name: Lake Albion Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located between the City of Boulder Watershed and Niwot Ridge, and occurs over a stretch of North Boulder Creek.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area has perhaps the most restricted access in Boulder County.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. Small ponds exist within willow carr and North Boulder Creek flows through.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Cliff and Canyon, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Lodgepole Pine Forest.

Size: 231 acres

Elevation: 10596-11096 feet (Mean = 10810 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: City of Boulder and USFS.

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #47

Year Revised: 2013

Year Established: 1994

Common Name: Triple Lakes Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the west side of the City of Boulder Watershed, south of Mt. Albion and less than a mile from the Continental Divide.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. This area is perhaps the most difficult area to access in Boulder County.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. Willow carr is on north, west and south sides of Triple Lakes.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Open Water, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Dry Tundra, Rocky Mountain Alpine Fell-Field, Rocky Mountain Cliff and Canyon.

Size: 216 acres

Elevation: 10561-11599 feet (Mean = 10851 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: City of Boulder

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #53

Year Revised: 2013

Year Established: 1994

Common Name: Woodland Flats Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside the Indian Peaks Wilderness Area due south of Chittenden Mt, west of Eldora, along a portion of N Fork Middle Boulder Creek.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. The creek is bounded on each side by the Devil's Thumb and Devil's Thumb Bypass Trails (USFS 902 & 902.1).

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. Site contains active beaver colony and associated ponds. Jasper Creek flows through site.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Southern Rocky Mountain Montane-Subalpine Grassland.

Size: 203 acres

Elevation: 9612-9987 feet (Mean = 9717 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #54

Year Revised: 2013

Year Established: 1994

Common Name: Buckeye Basin Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the southern Boulder County boarder due south of the town of Eldora, and east of the Eldora Ski resort area.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with reedgrass, sedges and grass. Site contains active beaver colony and associated ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Inter-Mountain West, Aspen-Mixed Conifer Forest and Woodland Complex, Rocky Mountain Cliff and Canyon.

Size: 126 acres

Elevation: 9171-9642 feet (Mean = 9388 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: Private property.

Current Resource Protection and Management Designations:

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #55

Year Revised: 2013

Year Established: 1994

Common Name: Los Lagos Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located near the southern Boulder County border south of the town of Nederland, due west of the Kelly Dahl Campground area off of SH119.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. This area is bisected by Coal Creek Drive (CO72) and the Peak-to-Peak Highway (CO119).

Habitat Descriptions:

Habitat (General): Montane willow carr. Vegetation is dominated by willow, birch and alder shrubs along with sedges and grasses. Beaver Creek flows through site. Site contains active beaver colony and associated ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Agriculture, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland

Size: 268 acres

Elevation: 8357-8682 feet (Mean = 8520 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: Private property, BCPOS CE and USFS.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #56

Year Revised: 2013

Year Established: 1994

Common Name: Roaring Fork Willow Carr

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located near the northern Boulder County border, NW of Meeker Park, near the intersection of Cabin Creek and SH7.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. There are several homes and driveways in this area.

Habitat Descriptions:

Habitat (General): Montane willow carr. Vegetation is dominated by willow, birch and alder shrubs along with sedges and grasses. Roaring Fork Creek flows through the site. Site contains active beaver colony and associated ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Aspen Forest and Woodland.

Size: 192 acres

Elevation: 8643-9067 feet (Mean = 8857 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: NPS, BCPOS CE and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans. See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #57

Year Revised: 2013

Year Established: 1994

Common Name: Peterson Lake

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located due south of the town of Eldora, directly adjacent to Spencer Mt and bordered on the northern edge by the Eldora Ski Rd.

Designation Description: Includes the sub-alpine lake and associated wetland. This site supports a freshwater mussel (Rocky Mountain Capshell), which is a USFS sensitive species and CPW species of special concern. Endemic to high mountain lakes, this site represents one of very few documented locations of collection.

Key Species:

SSC Known Occurrence: Rocky Mountain Capshell (*Acroloxus coloradensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Rocky Mountain Capshell are only known in Colorado from Boulder County (based on re-discovery in the county) and are vulnerable to commercial and recreational development surrounding aquatic habitats which decrease water quality; remaining habitats are known to be polluted and in areas of rapid urbanization and population growth; habitats on private land are not protected and inaccessible to population assessment; commercial drawdown of water levels for recreational use may cause local extirpation; salting of the Eldora Ski Road around the habitat may increase lake pollution and threat to the species.

Habitat Descriptions:

Habitat (General): Sub-alpine lake with wetland on west end, county road on north side and coniferous forest on south side.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Lodgepole Pine Forest, Southern Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland.

Size: 99 acres

Elevation: 9164-9534 feet (Mean = 9290 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: Private property and USFS.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #58

Year Revised: 2013

Year Established: 1994

Common Name: Hunters Creek

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside Rocky Mountain National Park, SW of Meeker Park, and west of Lookout Mt. Habitat occurs over stretch of Hunters Creek above its confluence with N St. Vrain Creek.

Designation Description: Sub-alpine stream supporting a protected segment of native Greenback Cutthroat Trout habitat inside Rocky Mountain National Park. The configuration of the creek, including an obstruction in the downstream segment, allows this habitat to support a native population of trout.

Key Species:

SSC Known Occurrence: Greenback Cutthroat Trout (*Oncorhynchus clarki*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Greenback Cutthroat Trout are vulnerable to hybridization with and predation by other native and non-native salmonids; degradation of stream habitat quality by logging, livestock over-grazing, water diversions, organic and inorganic water pollution and high-intensity recreational use of streams. Due to recent evidence of hybridization with other salmonids, this species of trout is currently under review by the US Fish and Wildlife Service for re-assessment of its listing as a Threatened species under the Endangered Species Act. The Sandbeach Lake Trail parallels Hunter's Creek and is also subject to catch-and-release fishing pressure.

Habitat Descriptions:

Habitat (General): Sub-alpine stream.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland.

Size: 178 acres

Elevation: 9418-10229 feet (Mean = 9826 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: NPS.

Current Resource Protection and Management Designations:

See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #59

Year Revised: New
Year Established: 2013

Common Name: Geer Canyon

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside Heil Valley Ranch Open Space, along the north side of the terminus of Geer Canyon Drive.

Designation Description: Cliff-nesting habitat for Prairie Falcon and Ponderosa pine woodland habitat supporting Fringed Myotis maternity roosts and foraging habitat.

Key Species:

SSC Known Occurrence: Prairie Falcon (*Falco mexicanus*); Fringed Myotis (*Myotis thysanodes*, maternity and foraging habitat); Western Small-footed Myotis (*Myotis ciliolabrum*, maternity habitat)

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Prairie Tiger Beetle, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, White-winged Crossbill, Hudsonian Emerald Dragonfly, Mottled Duskywing, Golden Eagle, Moss's Elfin, American Emerald, Peregrine Falcon, Northern Flicker, Gray Fox, Regal Fritillary, Chorus Frog, Northern Pocket Gopher, Northern Goshawk, Northern Harrier, White-tailed Jackrabbit, Western Scrub Jay, River Jewelwing, American Marten, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Long-eared Myotis, Long-legged Myotis, Western Small-footed Myotis, Flammulated Owl, Long-eared Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, Ringtail, Williamson's Sapsucker, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Pine Siskin, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Garter Snake, Milk Snake, Fox Sparrow, Plumbeous Vireo, Heather Vole, Meadow Vole, Virginia's Warbler, Wilson's Warbler, Red-headed Woodpecker, Rock Wren

Threats to Species or Habitat: Prairie Falcon are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Fringed Myotis and Western Small-footed Myotis are vulnerable to loss or disturbance of roosting and breeding habitat by habitat fragmentation; increased recreational activities and development may increase the potential of human-transmitted White-Nosed Syndrome into winter colonies; bats accumulate toxins if found in prey near habitat

Habitat Descriptions:

Habitat (General): Cliff faces and Ponderosa pine woodland.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Agriculture.

Size: 108 acres

Elevation: 5906-6683 feet (Mean = 6230 feet)

Life Zone: Lower Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #60

Year Revised: New
Year Established: 2013

Common Name: Caribou Ranch Montane Parkland

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X
Wildlife Concentration: X
Unique Biodiversity: X

Location (General): Located NW of Nederland, in a shape outlined generally as west of SH72, south of Rainbow Lake Rd., and north of Caribou Rd. The western boundary nears the Indian Peaks Wilderness Area.

Designation Description: One of the highest biodiversity regions in the county montane life zone. Includes Caribou willow carr, montane meadows, Delonde, Como and other creeks and Mud Lake. Vital habitat for several rare species of special concern, such as bats and native trout, and represents a critical movement and concentration area for the Winiger Ridge elk herd. This area includes and supercedes the former CWH 51 (Delonde Creek Willow Carr) and CWH52 (Caribou Ranch Willow Carr).

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) calving, winter and transitional range; Bat maternity roosts and hibernaculum (multiple species); American Beaver (*Castor canadensis*); White-tailed Ptarmigan (*Lagopus leucura*); Boreal Owl (*Aegolius funereus*); White-winged Crossbill (*Loxia leucoptera*); Band-tailed Pigeon (*Patagioenas fasciata*); Northern Goshawk (*Accipiter gentilis*); Northern Harrier (*Circus cyaneus*); Pine Siskin (*Spinus pinus*); Rocky Mountain Arctic Jutta (*Oeneis jutta*); Avian and Small Mammal biodiversity

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Western Bumblebee, American Bittern, Lazuli Bunting, Bushtit, Uinta Chipmunk, Lake Darner, American Dipper, Hudsonian Emerald Dragonfly, Ring-necked Duck, Golden Eagle, Moss's Elfin, American Emerald, Peregrine Falcon, Northern Flicker, Olive-sided Flycatcher, Willow Flycatcher, Regal Fritillary, Chorus Frog, Barrow's Goldeneye, Northern Pocket Gopher, Eared Grebe, Northern Harrier, Great Blue Heron, White-tailed Jackrabbit, River Jewelwing, Rocky Mountain Arctic Jutta, Belted Kingfisher, Golden-crowned Kinglet, Canada Lynx, American Marten, Little Brown Myotis, Long-legged Myotis, River Otter, Flammulated Owl, Long-eared Owl, Northern Pygmy Owl, North American Porcupine, Tiger Salamander, Williamson's Sapsucker, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Veery, Plumbeous Vireo, Heather Vole, Wilson's Warbler, American Three-toed Woodpecker, Lewis's Woodpecker, Rock Wren.

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. Elk are sensitive to human development and encroachment as well as habitat degradation. Bats are vulnerable to loss or disturbance of roosting and breeding habitat by habitat fragmentation; increased recreational activities and development may increase the potential of human-transmitted White-Nosed Syndrome into winter colonies; bats accumulate toxins if found in prey near habitat. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. White-tailed Ptarmigan are vulnerable forestry and recreational activities which reduce breeding and wintering habitat, particularly in willow carr and road construction along stream corridors; anticipated effects of global climate change may increase this species vulnerabilities. Boreal owl are sensitive to forestry and recreational activities which reduce mature and dead trees used for nesting sites. White-winged Crossbill are vulnerable to forestry and recreational activities which may impact coniferous forest habitat used for breeding and foraging, and anticipated effects of global climate change may increase this species vulnerabilities. Band-tailed Pigeon are vulnerable to overhunting and practices which increase habitat fragmentation. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers. Northern Harrier is especially vulnerable due to nesting habitat

declines and foraging habitat in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Pine Siskin are vulnerable to forestry or recreational practices which fragment habitat which may increase predation or parasitism of adults or young. The Rocky Mountain Arctic Jutta is dependent on open lodgepole pine stands and any alteration of the vegetational composition of these habitats could result in local extirpation. Avian and small mammal biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. This large area contains portions of the Peak-to-Peak Highway (CO72) as well as the entire BCPOS trail system and trailheads of the Caribou Ranch and Mud Lake open space properties.

Habitat Descriptions:

Habitat (General): Montane willow carr vegetation is dominated by willow, birch and alder shrubs along with sedges and grasses. Montane meadows, Lodgepole pine forest and Ponderosa Pine woodland, Spruce-Fir Forest and woodlands. North Boulder, Delonde and Como Creeks flow through the site with associated riparian shrubland. Several montane lakes. Site contains active beaver colony and associated ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Agriculture, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Alpine-Montane Wet Meadow, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Southern Rocky Mountain Montane-Subalpine Grassland, Inter-Mountain West Aspen-Mixed Conifer Forest and Woodland Complex, Rocky Mountain Subalpine Mesic Meadow.

Size: 5138 acres

Elevation: 8055-10255 feet (Mean = 8959 feet)

Life Zone: subalpine, upper montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE, USFS, City of Boulder, town of Nederland and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #61

Year Revised: New
Year Established: 2013

Common Name: Barker Reservoir

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located adjacent to the town of Nederland.

Designation Description: One of three known locations of the Lake Chub in the county, which was considered extirpated from Colorado in 1904 until re-discovery in Boulder County in 1989. The re-discovery team potentially attributed this rediscovery as a released specimen from an upstream reservoir, such type as Barker Reservoir represents. Thus, this reservoir and Beaver reservoir may be contributing to the survivorship of Lake Chub in the county, and represent a source of natural repopulation of Lake Chub into downstream creeks if stream conditions allow or are improved.

Key Species:

SSC Known Occurrence: Lake Chub (*Couesius plumbeus*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Lake Chub are sensitive to direct mortality or loss of breeding habitat by dewatering or dredging of rocky shore and shoal habitat along lake margins, or blockage of open tributary streams used for breeding in early spring; introduction of invasive or exotic species such as crayfish which may consume eggs or fry; excessive stocking of predatory game fish which may deplete the adult population; contamination of water with organic waste which leads to reduced oxygen or water quality. The Town of Nederland wastewater treatment plant is immediately adjacent to the Reservoir.

Habitat Descriptions:

Habitat (General): High elevation, montane reservoir and small, intermittent tributaries. North Beaver Creek and Middle Boulder Creek flow through the site.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lodgepole Pine Forest, Southern Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Inter-Mountain Basins, Montane Sagebrush Steppe, Inter-Mountain Basins Big Sagebrush Shrubland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Lower Montane-Foothill Shrubland, Agriculture, Rocky Mountain Cliff and Canyon.

Size: 415 acres

Elevation: 8031-8409 feet (Mean = 8219 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: City of Boulder, city of Nederland and BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #62

Year Revised: New
Year Established: 2013

Common Name: Beaver Reservoir

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located west of the city of Jamestown, south of the Peaceful Valley Campground area, at the terminus of the Beaver Reservoir Rd (CR96).

Designation Description: One of three known locations of the Lake Chub in the county, which was considered extirpated from Colorado in 1904 until re-discovery in Boulder County in 1989. The re-discovery team potentially attributed this rediscovery as a released specimen from an upstream reservoir, such type as Beaver Reservoir represents. Thus, this reservoir and Barker reservoir may be contributing to the survivorship of Lake Chub in the county, and represent a source of natural repopulation of Lake Chub into downstream creeks if stream conditions allow or are improved. This site also supports a county River Otter concentration and a functional American Beaver colony and associated species.

Key Species:

SSC Known Occurrence: Lake Chub (*Coesius plumbeus*); River Otter (*Lontra canadensis*) core habitat; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Lake Chub are sensitive to direct mortality or loss of breeding habitat by dewatering or dredging of rocky shore and shoal habitat along lake margins, or blockage of open tributary streams used for breeding in early spring; introduction of invasive or exotic species such as crayfish which may consume eggs or fry; excessive stocking of predatory game fish which may deplete the adult population; contamination of water with organic waste which leads to reduced oxygen or water quality. River Otter are sensitive to streamside and riparian habitat modification, water quality degradation leading to loss of prey, and direct trapping. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals.

Habitat Descriptions:

Habitat (General): High elevation, sub-alpine reservoir. Beaver Creek flows through site.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Ponderosa Pine Woodland, Southern Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Cliff and Canyon, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Recently Burned.

Size: 265 acres

Elevation: 9105-9346 feet (Mean = 9185 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: Private property and USFS.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #63

Year Revised: New
Year Established: 2013

Common Name: Goose Pond

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located at the intersection of US287 and the Northwest Parkway inside the Maple Grove subdivision in the town of Lafayette. North of Rock Creek Farm.

Designation Description: Ponds and associated wetlands and drainages which serve as vital breeding habitat for the Northern Leopard Frog. The adjacent grass habitats are necessary for upland terrestrial foraging.

Key Species:

SSC Known Occurrence: Northern Leopard Frog (*Rana pipiens*)

SSC Potential Occurrence (within habitat area): American Avocet, Brazilian Free-tailed Bat, Eastern Red Bat, Chorus Frog, Black-crowned Night Heron, Great Blue Heron, Horned Lark, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Little Brown Myotis, Ord's Kangaroo Rat, Tiger Salamander, Dwarf Shrew, Least Shrew, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake

Threats to Species or Habitat: Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. This area is subject to both residential and agricultural permanent presence.

Habitat Descriptions:

Habitat (General): Ponds, associated wetlands and drainages, as well adjacent agricultural areas.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Developed, Medium - High Intensity, Invasive Perennial Grassland, Western Great Plains Riparian Woodland and Shrubland.

Size: 17 acres

Elevation: 5212-5227 feet (Mean = 5217 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Lafayette and private property.

Current Resource Protection and Management Designations:

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #64

Year Revised: New
Year Established: 2013

Common Name: Southern Grasslands

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X
Wildlife Concentration: X
Unique Biodiversity:

Location (General): Located west of the town of Superior, east of SH93, north of SH128, and covers a section of Coal Creek.

Designation Description: The largest, relatively contiguous block of mixed grass prairie and associated habitats in the county supporting a wide variety of vital habitats for numerous species of concern, including the Northern Leopard Frog, Burrowing Owl, and foraging or breeding raptors. The area is bisected by the Coal Creek riparian corridor which supports a wide variety of riparian and creek-associated species of concern. Resident elk calving grounds adjacent to Coal Creek.

Key Species:

SSC Known Occurrence: Bald Eagle (*Haliaeetus leucocephalus*); Northern Leopard Frog (*Rana pipiens*); Chorus Frog (*Pseudacris triseriata*); Burrowing Owl (*Athene cunicularia*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); Regal Fritillary (*Speyeria idalia*); Grasshopper Sparrow (*Ammodramus savannarum*); American Badger (*Taxidea taxus*); Golden Eagle (*Aquila chrysaetos*); Ferruginous Hawk (*Buteo regalis*); Tiger Salamander (*Ambystoma tigrinum*); American Badger (*Taxidea taxus*); Short-horned lizard (*Phrynosoma hernandesi*)

SSC Potential Occurrence (within habitat area): Big Brown Bat, Brazilian Free-tailed Bat, Tricolored Bat, Plains Tiger Beetle, Colorado Blue, Lazuli Bunting, Colorado Chipmunk, Mottled Duskywing, Northern Flicker, Regal Fritillary, Northern Pocket Gopher, Rough-legged Hawk, White-tailed Jackrabbit, Belted Kingfish, Horned Lark, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Western Small-footed Myotis, Short-eared Owl, Mountain Plover, Ord's Kangaroo Rat, Dwarf Shrew, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Milk Snake, Cassin's Sparrow, Thirteen-lined Ground Squirrel, Meadow Vole, Preble's Meadow Jumping Mouse.

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. Chorus Frog are sensitive to agricultural practices which use pesticides, herbicides or fertilizers in the habitat, and vulnerable to loss of aquatic habitat quality. Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are then consumed by the owls. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Regal Fritillary are sensitive to conversion of tallgrass prairie to hayfields or heavily grazed lands, certain reforestation practices, gypsy moth spraying, and certain controlled burn practices (avoid burning too frequently). Grasshopper Sparrow is vulnerable to conversion of pastureland to cropland, mowing practices that are unprotective of nesting areas, and urban development leading to predation by domestic animals. American Badger are sensitive to conversion of grasslands to agriculture, urbanization leading to road development and automobile mortality. Ferruginous Hawk are vulnerable to conversion of prairie grassland to cropland and urban development, as well as impacts from increased recreational use; loss of prairie dog colonies due to pest control programs or impact of widespread sylvatic plague mortality. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production;

endocrine and developmental disruption due to agricultural pesticides. American Badger are sensitive to conversion of grasslands to agriculture, urbanization leading to road development and automobile mortality. Short Horned Lizard are sensitive to the loss of native ant species which are the preferred prey; collection by hobbyists; urbanization and conversion of native shrubland to dense grasses. This area contains multiple trails and trailhead areas that access city and county open space, and receives heavy recreation pressure.

Habitat Descriptions:

Habitat (General): Mixedgrass prairie. Coal Creek and associated riparian corridor flows through site. Several ponds and intermittent streams.

Southwest Regional Gap Analysis Project Landcover Types: Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Western Great Plains Shortgrass Prairie, Western Great Plains Riparian Woodland and Shrubland, Agriculture, Western Great Plains Cliff and Outcrop, Inter-Mountain Basins Mixed Salt Desert Scrub.

Size: 2729 acres

Elevation: 5553-5965 feet (Mean = 5758 feet)

Life Zone:

Ownership: (Private: Public:)

Comments: City of Boulder, BCPOS Open Space and CE and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. Most of the City of Boulder Open Space and Mountain Parks properties are designated as Habitat Conservation Areas, requiring a permit for off-trail travel. Large area surrounding Coal Creek is closed to all access from Nov 1- July 31 each year to protect nesting bald eagles. A smaller area is closed from March 15- Oct 15 each year to protect nesting burrowing owls and an area on the western side is closed from May 1- July 31 each year to off-trail travel to protect ground nesting grassland birds. The Coal Creek riparian area is fenced to exclude grazing and is closed to all public access. The area on City of Boulder Open Space and Mountain Parks properties is designated a Grassland Preserve related to management of Black-tailed Prairie Dogs.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #65

Year Revised: New
Year Established: 2013

Common Name: Kenosha Wetlands

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity: X

Location (General): Located near the eastern Boulder County border, near the intersection of Kenosha Rd. and East County Line Rd. North of the town of Erie.

Designation Description: Unique region of expansive man-made wetlands in eastern County. Contains vital habitat for several species of special concern, particularly waterfowl. Northern Harrier and many wading and wetland-associated species of special concern forage in the area.

Key Species:

SSC Known Occurrence: Yellow-headed Black Bird (*Xanthocephalus xanthocephalus*); American Avocet (*Recurvirostra americana*); American Bittern (*Botaurus lentiginosus*); Bald Eagle (*Haliaeetus leucocephalus*); Black-Crowned Night Heron (*Nycticorax nycticorax*); Double-crested Cormorant (*Phalacrocorax auritus*); Golden Eagle (*Aquila chrysaetos*); Great Blue Heron (*Ardea herodias*); Northern Harrier (*Circus cyaneus*); Ring-Necked Duck (*Aythya collaris*); Wood Duck (*Aix sponsa*); Avian biodiversity.

SSC Potential Occurrence (within habitat area): American Avocet, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Lark Bunting, Double-crested Cormorant, Iowa Darter, Johnny Darter, Wood Duck, Mottled Duskywing, Bald Eagle, Great Egret, Prairie Falcon, Giant Floater, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Eastern Grebe, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Black-crowned Night Heron, Great Blue Heron, Belted Kingfisher, Brassy Minnow, River Otter, Cylindrical Papershell, Banded Phyllis, Tiger Salamander, Bigmouth Shiner, Common Shiner, Least Shrew, Merriam's Shrew, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Stonecat, Plain's Topminnow, Spiny Softshell Turtle, Meadow Vole

Threats to Species or Habitat: Yellow-headed Blackbird are vulnerable to loss of nesting and foraging habitat in emergent vegetation of wetlands and lakesides due to water management drawdowns and drought conditions. American Avocet are sensitive to loss of habitat created by vernal flooding regimes as a result of agricultural water diversions of in-stream flows and urban flood control projects. Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. American Bittern suffer from loss of marsh and wetland foraging and breeding habitats due to habitat conversion or recreational use. Black-crowned Night Herons are vulnerable to human disturbance at nesting colonies which tend to be grouped in restricted areas, and as top predators they are sensitive to the accumulation of toxins in their habitat which can be found in their prey. Double-crested Cormorant are vulnerable to loss of nesting habitat adjacent to aquatic habitats, and human encroachment due to concentration into breeding colonies. Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. Northern Harrier is especially vulnerable due to nesting habitat declines and foraging habitat in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Ring-necked Duck are vulnerable to development or degradation of wetland habitat on their breeding grounds, wintering grounds, and migration routes; particularly vulnerable to consuming spent lead-shot found on the wetland bottoms where they feed. Wood Ducks are sensitive to cutting of dead and decaying trees used as nesting sites, and the loss of wetlands to development and agriculture. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. This area is subject to ongoing oil and gas maintenance and possible future development.

Habitat Descriptions:

Habitat (General): Rare, large, man-made wetland in eastern County, including riparian and shoreline habitats.

Southwest Regional Gap Analysis Project Landcover Types: Western Great Plains Riparian Woodland and Shrubland.

Size: 51 acres

Elevation: 4963-4972 feet (Mean = 4969 feet)

Life Zone: Plains

Ownership: (Private: Public: X)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #66

Year Revised: New
Year Established: 2013

Common Name: Two Creeks

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the eastern Boulder County border, south of the intersection of SH7 and the County Line. East side of the town of Lafayette.

Designation Description: Area of long-term and established Burrowing Owl nesting within a Black Tailed Prairie Dog Grassland Complex.

Key Species:

SSC Known Occurrence: Burrowing Owl (*Athene cunicularia*); Black Tailed Prairie Dog (*Cynomys ludovicianus*)

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Tricolored Bat, Colorado Blue, Colorado Chipmunk, Golden Eagle, Regal Fritillary, Northern Pocket Gopher, Ferruginous Hawk, Rough-legged Hawk, Horned Lark, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Western Small-footed Myotis, Short-eared Owl, Ord's Kangaroo Rat, Dwarf Shrew, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Milk Snake, Grasshopper Sparrow, Thirteen-lined Ground Squirrel

Threats to Species or Habitat: Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are then consumed by the owls. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. The Two Creeks Regional Trail bisects this area. The area is subject to ongoing maintenance and possible future oil and gas development.

Habitat Descriptions:

Habitat (General): Shortgrass and mixed grass prairie habitat and several intermittent streams.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Invasive Perennial Grassland, Western Great Plains Shortgrass Prairie.

Size: 206 acres

Elevation: 5121-5238 feet (Mean = 5171 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space and city of Lafayette.

Current Resource Protection and Management Designations:

See relevant city of Boulder management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #67

Year Revised: New
Year Established: 2013

Common Name: Cony Creek

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside Rocky Mountain National Park, due west of the town of Allenspark. SE of Copeland Mt. and within 1 mile of the Continental Divide.

Designation Description: Area includes Cony Creek, Hutcheson Lakes, Pear Reservoir and Finch Lake within Rocky Mountain National Park. Sub-alpine stream and lakes supporting a protected segment of native Greenback Cutthroat Trout habitat inside Rocky Mountain National Park. This site also supports a freshwater mussel (Rocky Mountain Capshell), which is a USFS sensitive species and CPW species of special concern. Endemic to high mountain lakes, this site represents one of very few documented locations of collection.

Key Species:

SSC Known Occurrence: Greenback Cutthroat Trout (*Oncorhynchus clarki*); Rocky Mountain Capshell (*Acroloxus coloradensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Greenback Cutthroat Trout are vulnerable to hybridization with and predation by other native and non-native salmonids; degradation of stream habitat quality by logging, livestock over-grazing, water diversions, organic and inorganic water pollution and high-intensity recreational use of streams. Due to recent evidence of hybridization with other salmonids, this species of trout is currently under review by the US Fish and Wildlife Service for re-assessment of its listing as a Threatened species under the Endangered Species Act. Rocky Mountain Capshell are only known in Colorado from Boulder County (based on re-discovery in the county) and are vulnerable to commercial and recreational development surrounding aquatic habitats which decrease water quality; remaining habitats are known to be polluted and in areas of rapid urbanization and population growth; habitats on private land are not protected and inaccessible to population assessment; commercial drawdown of water levels for recreational use may cause local extirpation; salting of roads around the habitat may increase lake pollution and threat to the species. Portions of Cony Creek, Pear Lake, and Finch Lake are adjacent to the Pear Lake Trail.

Habitat Descriptions:

Habitat (General): Alpine Cony Creek, and associated lakes and reservoirs.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Dry Tundra, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Alpine Fell-Field.

Size: 711 acres

Elevation: 9372-11537 feet (Mean = 10483 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: NPS.

Current Resource Protection and Management Designations:

See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #68

Year Revised: New
Year Established: 2013

Common Name: Ouzel Creek

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside Rocky Mountain National Park, due west of the town of Allenspark. Due north of Copeland Mt. and lies at the intersection of Ouzel Creek and N St. Vrain Creek.

Designation Description: Area includes Ouzel Creek, Ouzel Lake and Chickadee Pond within Rocky Mountain National Park. Sub-alpine stream and lakes supporting a protected segment of native Greenback Cutthroat Trout habitat inside Rocky Mountain National Park. This site also supports a breeding location of Black Swift, which requires a very specialized habitat configuration and quality.

Key Species:

SSC Known Occurrence: Greenback Cutthroat Trout (*Oncorhynchus clarki*); Black Swift (*Cypseloides niger*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Greenback Cutthroat Trout are vulnerable to hybridization with and predation by other native and non-native salmonids; degradation of stream habitat quality by logging, livestock over-grazing, water diversions, organic and inorganic water pollution and high-intensity recreational use of streams. Due to recent evidence of hybridization with other salmonids, this species of trout is currently under review by the US Fish and Wildlife Service for re-assessment of its listing as a Threatened species under the Endangered Species Act. Black Swift are vulnerable to water management, forestry practices or recreational activities which reduce water quality and the production of aquatic insect prey needed for successful nesting. Ouzel Falls is a popular destination hike and the Bluebird Lake Trail bisects a significant length of the area.

Habitat Descriptions:

Habitat (General): Alpine creek and associated lake and pond.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Southern,, Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Lodgepole Pine Forest, Rocky, Mountain Cliff and Canyon, Recently Logged Areas, Rocky Mountain Alpine Bedrock and Scree, Rocky Mountain Subalpine-Montane Riparian Woodland.

Size: 392 acres

Elevation: 9167-10704 feet (Mean = 9951 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: NPS.

Current Resource Protection and Management Designations:

See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #69

Year Revised: New
Year Established: 2013

Common Name: Sandbeach Creek

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located inside Rocky Mountain National Park, west of the town of Allenspark. Occurs at the intersection of Sandbeach Creek and N St. Vrain Creek.

Designation Description: Area includes Sandbeach Creek and Sandbeach Lake within Rocky Mountain National Park. Sub-alpine stream and lake supporting a protected segment of native Greenback Cutthroat Trout habitat inside Rocky Mountain National Park. The configuration of the creek, including an obstruction in the downstream segment, allows this habitat to support a native population of trout.

Key Species:

SSC Known Occurrence: Greenback Cutthroat Trout (*Oncorhynchus clarki*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Greenback Cutthroat Trout are vulnerable to hybridization with and predation by other native and non-native salmonids; degradation of stream habitat quality by logging, livestock over-grazing, water diversions, organic and inorganic water pollution and high-intensity recreational use of streams. Due to recent evidence of hybridization with other salmonids, this species of trout is currently under review by the US Fish and Wildlife Service for re-assessment of its listing as a Threatened species under the Endangered Species Act. The Sandbeach Lake Trail provides visitor access to Sandbeach Lake.

Habitat Descriptions:

Habitat (General): High-elevation mountain stream flowing through mixed conifer forests of subalpine and upper montane. Old-growth Limber pine.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Aspen Forest and Woodland, Open Water, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Alpine Bedrock and Scree, Inter-Mountain West Aspen-Mixed Conifer Forest and Woodland Complex.

Size: 322 acres

Elevation: 8675-10411 feet (Mean = 9808 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: NPS.

Current Resource Protection and Management Designations:

See the Rocky Mountain National Park management plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #70

Year Revised: New

Year Established: 2013

Common Name: Peewink Mountain

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located NE of Nederland, near the intersection of Sugarloaf Rd. and CR124W.

Designation Description: Habitat which supports a rare Front Range location of Townsend's Big-eared bat maternity roost.

Key Species:

SSC Known Occurrence: Townsend's Big-eared Bat (*Corynorhinus townsendii*) maternity roost

SSC Potential Occurrence (within habitat area): Big Brown Bat, Hoary Bat, Silver-haired Bat, Beaver, Little Brown Myotis, Western Small-footed Myotis, Long legged myotis.

Threats to Species or Habitat: Townsend's Big Eared Bat are vulnerable to loss of roosting and breeding habitat by habitat fragmentation; increased recreational activities and development may increase the potential of human-transmitted White-Nosed Syndrome into winter colonies; bats accumulate toxins if found in prey near habitat.

Habitat Descriptions:

Habitat (General): Accessible mine shafts, Ponderosa pine woodland and Lodgepole pine forest.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Agriculture, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Southern Rocky Mountain Montane-Subalpine Grassland, Rocky Mountain Subalpine-Montane Riparian Woodland, Inter-Mountain Basins Montane Sagebrush Steppe, Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Alpine-Montane Wet Meadow, Rocky Mountain Cliff and Canyon, Rocky Mountain Aspen Forest and Woodland.

Size: 83 acres

Elevation: 7592-8289 feet (Mean = 7908 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #71

Year Revised: New
Year Established: 2013

Common Name: Red Hill Gulch

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:
Wildlife Concentration:
Unique Biodiversity:

Location (General): Located on the east side of Heil Valley Ranch, due south of the town of Lyons.

Designation Description: High-quality habitat area which supports a diversity of avian and butterfly species. Ponderosa woodland habitat supporting Goshawk.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*); Long-eared Owl (*Asia otus*); Northern Goshawk (*Accipter gentilis*); Rare Butterfly concentration; Avian biodiversity

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Colorado Blue, Indigo Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Mottled Duskywing, Moss's Elfyn, Peregrine Falcon, Prairie Falcon, Northern Flicker, Gray Fox, Chorus Frog, Regal Fritillary, Northern Pocket Gopher, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, White-tailed Jackrabbit, Western Scrub Jay, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Fringed Myotis, Little Brown Myotis, Long-eared Myotis, Long-legged Myotis, Western Small-footed Myotis, Burrowing Owl, Flammulated Owl, Northern Pygmy Owl, Short-eared Owl, Band-tailed Pigeon, North American Porcupine, Ord's Kangaroo Rat, Western Scrub-Jay, Loggerhead Shrike, Pine Siskin, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Two-spotted Skipper, Common Garter Snake, Lined Snake, Milk Snake, Fox Sparrow, Grasshopper Sparrow, Thirteen-lined Ground Squirrel, Sage Thrasher, Plumbeous Vireo, Heather Vole, Meadow Vole, Virginia's Warbler, Wilson's Warbler, Rock Wren

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. The Picture Rock Trail is designated on-trail only during the nesting season. Long-eared Owl is vulnerable to loss of breeding habitat, such as trees adjacent to grasslands and shrublands. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers. The listed butterflies are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity.

Habitat Descriptions:

Habitat (General): Cliff faces, shrublands, wet meadow, intermittent streams and grasslands.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Alpine-Montane Wet Meadow, Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Developed, Open Space - Low Intensity, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland.

Size: 625 acres

Elevation: 5510-6578 feet (Mean = 6066 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #72

Year Revised: New
Year Established: 2013

Common Name: Antelope Park

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on Hall Ranch, due west of the town of Lyons.

Designation Description: Area which supports a high elevation prairie dog colony and serves as a critical foraging area for several species of raptor, such as the Golden Eagle.

Key Species:

SSC Known Occurrence: Black Tailed Prairie Dog (*Cynomys ludovicianus*; highest elevation colony and critical raptor foraging area)

SSC Potential Occurrence (within habitat area): American Badger, Golden Eagle, Prairie Falcon, Gray Fox, Northern Pocket Gopher, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, White-tailed Jackrabbit, Western Scrub Jay, Horned Lark, Short Horned Lizard, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Little Brown Myotis, Western Small-footed Myotis, Ovenbird, Burrowing Owl, Short-eared Owl, Band-tailed Pigeon, Mountain Plover, North American Porcupine, Ord's Kangaroo Rat, Western Scrub-Jay, Merriam's Shrew, Loggerhead Shrike, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Milk Snake, Brewer's Sparrow, Cassin's Sparrow, Grasshopper Sparrow, Thirteen-lined Ground Squirrel, Sage Thrasher, Rock Wren

Threats to Species or Habitat: Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Portions of the Nighthawk, Bitterbrush, and Nelson Loop Trails are all within the area.

Habitat Descriptions:

Habitat (General): Grasslands.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Rocky Mountain Alpine-Montane Wet Meadow, Agriculture, Rocky Mountain Ponderosa Pine Woodland.

Size: 83 acres

Elevation: 6037-6187 feet (Mean = 6103 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #73

Year Revised: New
Year Established: 2013

Common Name: North Saint Vrain Canyon

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X
Wildlife Concentration: X
Unique Biodiversity: X

Location (General): Located near the northern Boulder County border, NE of the town of Allenspark and west of the Buttonrock Reservoir. Occurs over wilderness-like area of the N St. Vrain Creek.

Designation Description: This area represents the last, best example of a large, relatively undisturbed foothills watershed in the Front Range and the largest known expanse of endemic shrubland including bitterbrush/mountain muhly and old growth ponderosa pine. Varied, steep terrain, including many cliff faces and the riparian areas of St. Vrain Creek, Rock Creek, and Roaring Fork Creek enable this region to support a sweeping variety of vital habitat for species of special concern, particularly for promoting the habitat needs of Rocky Mountain Bighorn Sheep. The US Forest Service Management of this region is directed towards managing the natural system and promoting the conditions necessary to sustain highly effective habitat and a functional watershed.

Key Species:

SSC Known Occurrence: Rocky Mountain Bighorn Sheep (*Ovis canadensis canadensis*) concentration area; Golden Eagle (*Aquila chrysaetos*); Lake Chub (*Coesius plumbeus*; CO re-discovery); Bald Eagle (*Haliaeetus leucocephalus*); Prairie Falcon (*Falco mexicanus*); Olive-sided Flycatcher (*Contopus cooperi*); Northern Goshawk (*Accipiter gentilis*); Northern Harrier (*Circus cyaneus*); Flammulated Owl (*Otus flammeolus*); American Three-toed Woodpecker (*Picoides dorsalis*); North American Porcupine (*Erethizon dorsatum*); Golden-crowned Kinglet (*Regulus satrapa*); American Beaver (*Castor canadensis*); Lazuli Bunting (*Passerina amoena*); American Dipper (*Cinclus mexicanus*); Belted Kingfisher (*Megaceryle alcyon*); Virginia's Warbler (*Oreothlypis virginiae*); Wilson's Warbler (*Cardellina pusilla*); Northern Pocket Gopher (*Thomomys talpoides*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Tricolored Bat, Beaver, Prairie Tiger Beetle, American Bittern, Lazuli Bunting, Bushtit, Rocky Mountain Capshell, Colorado Chipmunk, Uinta Chipmunk, White-winged Crossbill, Northern Redbelly Dace, Lake Darner, American Dipper, Hudsonian Emerald Dragonfly, Ring-necked Duck, Mottled Duskywing, Moss's Elfin, American Emerald, Peregrine Falcon, Northern Flicker, Olive-sided Flycatcher, Willow Flycatcher, Gray Fox, Regal Fritillary, Chorus Frog, Barrow's Goldeneye, Northern Pocket Gopher, Northern Goshawk, Eared Grebe, Northern Harrier, Great Blue Heron, White-tailed Jackrabbit, River Jewelwing, Rocky Mountain Arctic Jutta, Belted Kingfisher, Golden-crowned Kinglet, Canada Lynx, American Marten, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Long-legged Myotis, Western Small-footed Myotis, River Otter, Boreal Owl, Flammulated Owl, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, American Redstart, Ringtail, Tiger Salamander, Williamson's Sapsucker, Bigmouth Shiner, Common Shiner, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Pine Siskin, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sharp Sprite, Umbilicate Sprite, Stonecat, Sage Thrasher, Greenback Cutthroat Trout, Veery, Plumbeous Vireo, Heather Vole, Virginia's Warbler, Wilson's Warbler, Cedar Waxwing, American Three-toed Woodpecker, Lewis's Woodpecker, Rock Wren

Threats to Species or Habitat: Rocky Mountain Bighorn Sheep are vulnerable to habitat loss, particularly breeding ground and migratory areas, from human encroachment, forestry practices or recreational activities; contact with domestic sheep can transfer disease; overhunting; invasive weeds can displace native vegetation needed as forage. Prairie Falcon and Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Lake Chub are sensitive to direct mortality or loss of breeding habitat by dewatering or dredging of rocky shore and shoal habitat along lake margins, or blockage of open tributary streams used for breeding in early spring; introduction of invasive or exotic species such as crayfish which may consume eggs or fry; excessive stocking of predatory game fish which may deplete the adult population; contamination of water with organic waste

which leads to reduced oxygen or water quality. Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. Olive-sided Flycatcher are vulnerable to loss of tree snags for nesting and mature forest stands, forest management practices can cause "ecological traps" which reduce breeding success. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers. Northern Harrier is especially vulnerable due to nesting habitat declines and foraging habitat in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Flammulated Owl are vulnerable to forestry practices in old growth forest and pesticides use in the habitat can lead to nest failure. American Three-toed Woodpecker are vulnerable to forestry or recreational activities which remove trees with suitable nesting cavities as well as fragment habitat. North American Porcupine are vulnerable to habitat fragmentation and urbanization which increases predation by domestic animals. Golden-crowned Kinglet are vulnerable to forestry practices and recreational activities which reduce boreal spruce-fir forests and other habitats needed for nesting. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. Lazuli Bunting is sensitive to removal or disturbance of shrubland breeding habitats. American Dipper are vulnerable to development or degradation of stream and bankside vegetation used for foraging and breeding; reduction of water quality leads to loss of invertebrate prey. Belted Kingfisher is sensitive to changes in water quality and prey availability in stream courses; urban development and recreational activities strongly affect kingfisher behavior and breeding success; nesting sites are limited to earthen banks which may be altered by riparian and stream corridor management. Virginia's Warbler are vulnerable to forestry practices which may lead to increased cowbird parasitism and reduction of breeding success. Wilson's Warbler are sensitive to forestry, agricultural or recreational activities which reduce or fragment riparian habitats used for breeding. Northern Pocket Gopher are vulnerable to practices which fragment habitat.

Habitat Descriptions:

Habitat (General): Varied, rugged terrain with multiple cliff faces and other rocky habitat features. Expansive, functional Foothills watershed. Rock Creek, North Saint Vrain Creek, Coulson Gulch and several other perennial and intermittent streams flow through the site, with associated riparian, wet meadow and shrubland habitat. Active beaver ponds. Endemic shrubland including bitterbrush, mountain muhly and old growth ponderosa pine. Large, unfragmented expanses of Ponderosa pine woodlands, Lodgepole pine forest and other mixed conifer forest.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Southern Rocky Mountain Montane-Subalpine Grassland, Inter-Mountain Basins Montane Sagebrush Steppe, Agriculture, Rocky Mountain Cliff and Canyon, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Alpine-Montane Wet Meadow, Recently Mined or Quarried, Rocky Mountain Gambel Oak-Mixed Montane Shrubland, Western Great Plains Foothill and Piedmont Grassland, Inter-Mountain Basins Active and Stabilized Dune, Rocky Mountain Lower Montane Riparian Woodland and Shrubland.

Size: 4958 acres

Elevation: 6740-8804 feet (Mean = 7867 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS and city of Longmont.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan. See the USFS Establishment Record for the North St. Vrain Natural Area within Arapaho-Roosevelt National Forests and Pawnee Grassland, Boulder County, Colorado.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #74

Year Revised: New

Year Established: 2013

Common Name: Hat Rock

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on Hall Ranch, west of the town of Lyons, encompassing a portion of Indian Lookout Mt.

Designation Description: Cliff face which provides vital nesting habitat for the Prairie Falcon.

Key Species:

SSC Known Occurrence: Prairie Falcon (*Falco mexicanus*)

SSC Potential Occurrence (within habitat area): Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Lazuli Bunting, Bushtit, Colorado Chipmunk, Mottled Duskywing, Golden Eagle, Peregrine Falcon, Gray Fox, Northern Pocket Gopher, White-tailed Jackrabbit, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Western Small-footed Myotis, Ringtail, Western Scrub-Jay, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Brewer's Sparrow, Sage Thrasher, Rock Wren

Threats to Species or Habitat: Prairie Falcon are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing. However, the area is closed to public access; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends.

Habitat Descriptions:

Habitat (General): Rocky cliff faces.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Ponderosa Pine Woodland.

Size: 180 acres

Elevation: 5547-6494 feet (Mean = 5896 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #75

Year Revised: New
Year Established: 2013

Common Name: Ingersoll Quarry

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on a central portion of Heil Valley Ranch, SW of the town of Lyons.

Designation Description: This quarry is a dependable regional water source that is uniquely high in calcium, a trait that is vital to successful rearing of young for many bat species. Several other types of native wildlife use the quarry and surrounding habitat for breeding, drinking and resting.

Key Species:

SSC Known Occurrence: Long-legged Myotis (*Myotis volans*, critical water source); Tiger Salamander (*Ambystoma tigrinum*); Northern Goshawk (*Accipter gentilis*); Long-eared Myotis (*Myotis evotis*, critical water source, maternity colonies); Tiger Salamander (*Ambystoma tigrinum*); Townsend's Big-eared Bat (*Corynorhinus townsendii*); Fringed Myotis (*Myotis thysanodes*), Western Small-footed Myotis (*Myotis ciliolabrum*), Hoary Bat (*Lasiurus cinereus*), Silver-haired bat (*Lasionycteris noctivagans*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Long-legged Myotis, Long-eared Myotis, Townsend's Big-eared Bat, Fringed Myotis, Western Small-footed Myotis, Hoary Bat, and Silver-haired are vulnerable to loss of roosting and breeding habitat by habitat fragmentation, which may also increase the risk of white-nose syndrome; bats accumulate toxins if found in prey near habitat; improper mine closures without survey reduce habitat availability; Ingersoll Quarry offers a critical and rare, calcium-rich water source for breeding colonies. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production; endocrine and developmental disruption due to agricultural pesticides. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production; endocrine and developmental disruption due to agricultural pesticides. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers.

Habitat Descriptions:

Habitat (General): Montane quarry pond.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland.

Size: 86 acres

Elevation: 6605-6962 feet (Mean = 6806 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and USFS.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #76

Year Revised: New
Year Established: 2013

Common Name: South Draw

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration: X

Unique Biodiversity:

Location (General): Located SW of the town of Eldorado Springs, between two areas of Eldorado Canyon State Park, on the south Boulder County border.

Designation Description: Relatively unfragmented and wilderness-like region which is highly productive for wildlife and closely situated to human settlement. Ruggedness and complexity of the area supports the unique habitat requirements for Northern Goshawk nesting, as well as rare owl and butterfly habitats.

Key Species:

SSC Known Occurrence: Golden Eagle (*Aquila chrysaetos*); Northern Goshawk (*Accipiter gentilis*); Flammulated Owl (*Otus flammeus*); Mottled Duskywing (*Erynnis martialis*)

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Beaver, Lazuli Bunting, Bushtit, Colorado Chipmunk, Lake Darner, American Dipper, Hudsonian Emerald Dragonfly, Moss's Elfin, American Emerald, Peregrine Falcon, Prairie Falcon, Northern Flicker, Olive-sided Flycatcher, Gray Fox, Chorus Frog, Northern Pocket Gopher, River Jewelwing, Belted Kingfisher, American Marten, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Long-legged Myotis, River Otter, Flammulated Owl, Long-eared Owl, Northern Pygmy Owl, North American Porcupine, Ringtail, Tiger Salamander, Williamson's Sapsucker, American Water Shrew, Dwarf Shrew, Merriam's Shrew, Pine Siskin, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Milk Snake, Fox Sparrow, Sage Thrasher, Plumbeous Vireo, Heather Vole, Wilson's Warbler, Cedar Waxwing, Lewis's Woodpecker, Preble's Meadow Jumping Mouse.

Threats to Species or Habitat: Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Primary threats to Northern Goshawk populations are alteration of its preferred habitat by forestry management practices including modification or destruction of nesting. Additionally, increased fragmentation of habitat by roads, trails and development degrades goshawk habitat value; susceptible to collection by falconers. Flammulated Owl are vulnerable to forestry practices in old growth forest and pesticides use in the habitat can lead to nest failure. Mottled Duskywing are negatively affected by the fragmentation of scrubby hilltop areas used by breeding males, the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. This area is subject to daily heavy coal train traffic in the southeast portion of the area.

Habitat Descriptions:

Habitat (General): Juxtaposition of several productive habitat types, unfragmented and wilderness-like region. Rocky cliff faces and old growth forest covered with Ponderosa Pine woodland and mixed conifer forest. Includes portions of South Boulder Creek, as well as perennial Johnson Gulch and South Draw streams.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Lodgepole Pine Forest.

Size: 907 acres

Elevation: 6150-7649 feet (Mean = 6933 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space, city and county of Denver, BLM, State of Colorado and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #77

Year Revised: New
Year Established: 2013

Common Name: Hodgson-Harris Reservoir

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the NE side of the town of Superior, near the intersection of Rock Creek Pkwy and S 88th St.

Designation Description: Small reservoir area containing mudflats and adjacent low-emergent vegetation used as vital breeding habitat for the Northern Leopard Frog.

Key Species:

SSC Known Occurrence: Northern Leopard Frog (*Rana pipiens*); American Avocet (*Recurvirostra americana*)

SSC Potential Occurrence (within habitat area): Double-crested Cormorant, Bald Eagle, Great Egret, Chorus Frog, Rough-legged Hawk, Great Blue Heron, Tiger Salamander, Common Garter Snake, Eared Grebe.

Threats to Species or Habitat: Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. American Avocet are sensitive to loss of habitat created by vernal flooding regimes as a result of agricultural water diversions of in-stream flows and urban flood control projects. This site will be subject to reservoir and dam reconstruction in 2014, and also is subject to recreational trespass as a de-facto neighborhood park.

Habitat Descriptions:

Habitat (General): Small reservoir with mudflats and adjacent low-emergent vegetation.

Southwest Regional Gap Analysis Project Landcover Types: Open Water, Invasive Perennial Grassland.

Size: 12 acres

Elevation: 5412-5421 feet (Mean = 5416 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space and town of Superior.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #78

Year Revised: New
Year Established: 2013

Common Name: Buffalo Gulch and Rock Creek

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the SW section of Rock Creek Farm, along portions of Rock Creek and Buffalo Gulch. Area located roughly between Brainard Dr. and US287.

Designation Description: Dispersed area of low emergent vegetation within Rock Creek and adjacent riparian habitat which serves as vital movement corridor for Northern Leopard Frog. Critical breeding habitat for Northern Leopard Frog within Buffalo Gulch.

Key Species:

SSC Known Occurrence: Northern Leopard Frog (*Rana pipiens*)

SSC Potential Occurrence (within habitat area): American Avocet, American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Eastern Red Bat, Tricolored Bat, Yellow-headed Blackbird, Colorado Blue, Indigo Bunting, Lark Bunting, Colorado Chipmunk, Great Egret, Peregrine Falcon, Prairie Falcon, Northern Flicker, Regal Fritillary, Chorus Frog, Northern Pocket Gopher, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Black-crowned Night Heron, Great Blue Heron, Belted Kingfisher, Horned Lark, Northern Grasshopper Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Little Brown Myotis, Burrowing Owl, Black-tailed Prairie Dog, Ord's Kangaroo Rat, Tiger Salamander, Western Scrub-Jay, Dwarf Shrew, Least Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Cassin's Sparrow, Grasshopper Sparrow, Thirteen-lined Ground Squirrel

Threats to Species or Habitat: Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. This area is subject to active farming and livestock grazing, although portions of the stream are protected by fencing. The Cradleboard Trail parallels much of Buffalo Gulch and portions of Rock Creek.

Habitat Descriptions:

Habitat (General): Perennial Rock Creek and Buffalo Gulch Creek and adjacent riparian habitat containing dispersed areas of low emergent vegetation and shrubs, as well as grassland areas around creeks.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Western Great Plains Riparian Woodland and Shrubland, Invasive Perennial Grassland, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Foothill and Piedmont Grassland, Western Great Plains Shortgrass Prairie.

Size: 221 acres

Elevation: 5250-5361 feet (Mean = 5284 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #79

Year Revised: New
Year Established: 2013

Common Name: Bear and Aspen Canyons

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located west of the city of Boulder, near Bear Peak.

Designation Description: Foothills drainage area which supports old growth Ponderosa forest and high concentration Flammulated Owl. Habitat also supports a high diversity of native forest birds.

Key Species:

SSC Known Occurrence: Flammulated Owl (*Otus flammeus*); Plumbeous Vireo (*Vireo plumbeus*); Pine Siskin (*Spinus pinus*); Virginia's Warbler (*Oreothlypis virginiae*); Rock Wren (*Salpinctes absoletus*)

SSC Potential Occurrence (within habitat area): Williamson's Sapsucker

Threats to Species or Habitat: Flammulated Owl are vulnerable to high-severity wildfire which can negatively impact habitat and incompatible forest thinning practices such as removing trees from ridgetops (preferred trees from which Flammulated Owls sing). Plumbeous Vireo are sensitive to fragmentation of ponderosa pine habitats. Pine Siskin are vulnerable to forestry or recreational practices which fragment habitat which may increase predation or parasitism of adults or young. Virginia's Warbler are vulnerable to forestry practices which may lead to increased cowbird parasitism and reduction of breeding success. Rock Wren are sensitive to practices which increase habitat fragmentation leading to increased nest parasitism or predation.

Habitat Descriptions:

Habitat (General): Foothills drainage adjacent to Bear Canyon Creek containing mixed conifer forest and woodland.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Subalpine-Montane Riparian Woodland.

Size: 320 acres

Elevation: 6838-7685 feet (Mean = 7285 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: City of Boulder, Boulder municipal property authority and private property.

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan. This area was designated in OSMP's Visitor Master Plan (2005) as a Habitat Conservation Area, where visitors require a permit to walk off-trail and dogs need to be leashed.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #80

Year Revised: New
Year Established: 2013

Common Name: Giggey Lake

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located SE of the town of Nederland, due west of the intersection of Magnolia Dr. and CR 97.

Designation Description: Lake and associated wetland which supports a unique concentration of wetland and grassland associated avian species. The lake serves as vital habitat for imperiled species of mollusk, and productive habitat for amphibians.

Key Species:

SSC Known Occurrence: Sharp Sprite (*Promenetus exacuus*); Umbilicate Sprite (*Promenetus umbilicatellus*); Chorus Frog (*Pseudacris triseriata*); Tiger Salamander (*Ambystoma tigrinum*); Avian biodiversity; Historical occurrence of Boreal Toad (*Anaxyrus boreas*)

SSC Potential Occurrence (within habitat area): Hudsonian Emerald Dragonfly, American Emerald, River Jewelwing, Lake Darner, Two-banded Checkered Skipper, Northern Pocket Gopher, Dwarf Shrew, Heather Vole, Ring-necked Duck, Hoary Bat, Little Brown Myotis, Western Small-footed Myotis.

Threats to Species or Habitat: Sharp Sprite are vulnerable due to loss or modification of lakes, ponds and wetlands with the greatest densities of cattail. Umbilicate Sprite are vulnerable to degraded water quality in high-altitude lakes, creeks, ditches and wetlands where it occurs; difficulty in identification with the Sharp Sprite coupled with failure of discovery of either species during recent surveys increases the possibility of state extirpation and therefore population sensitivity to habitat disturbance. Chorus Frog are sensitive to agricultural practices which use pesticides, herbicides or fertilizers in the habitat, and vulnerable to loss of aquatic habitat quality. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production; endocrine and developmental disruption due to agricultural pesticides. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. This area is subject to summer livestock grazing, but has a protective riparian pasture fence.

Habitat Descriptions:

Habitat (General): Montane lake, riparian shrubland and wet meadow.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Alpine-Montane Wet Meadow, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lodgepole Pine Forest.

Size: 13 acres

Elevation: 8466-8511 feet (Mean = 8493 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #81

Year Revised: New
Year Established: 2013

Common Name: Hall II

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration:

Unique Biodiversity: X

Location (General): Located on Hall II, SW of the town of Lyons, and both areas closely intersect SH7.

Designation Description: Lower Montane shrub habitat which is mixed with ponderosa pine, juniper and several fruiting shrubs. The habitat follows intermittent streams and contains a diversity of geographic features, which has contributed to the development of a high diversity of native avian species of special concern. These areas also support vital habitat for amphibians and butterflies.

Key Species:

SSC Known Occurrence: Moss's Elfin (*Callophrys mossii*); Lazuli Bunting (*Passerina amoena*); Northern Flicker (*Colaptes auratus*); Plumbeous Vireo (*Vireo plumbeus*); Rock Wren (*Salpinctes obsoletus*); Virginia's Warbler (*Oreothlypis virginiae*); Wilson's Warbler (*Cardellina pusilla*); Northern Leopard Frog (*Rana pipiens*); Tiger Salamander (*Ambystoma tigrinum*); Avian biodiversity; Brewer's Sparrow (*Spizella breweri*); Small-footed Myotis (*Myotis ciliolabrum*); large mammal biodiversity

SSC Potential Occurrence (within habitat area): Hops Feeding Azure, American Badger, Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Beaver, Indigo Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Mottled Duskywing, Golden Eagle, American Emerald, Peregrine Falcon, Prairie Falcon, Northern Flicker, Olive-sided Flycatcher, Willow Flycatcher, Gray Fox, Regal Fritillary, Chorus Frog, Northern Pocket Gopher, Northern Goshawk, Northern Harrier, White-tailed Jackrabbit, Horned Lark, Northern Mockingbird, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Long-eared Myotis, Long-legged Myotis, Ovenbird, Flammulated Owl, Long-eared Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, American Redstart, Ringtail, Dwarf Shrew, Least Shrew, Merriam's Shrew, Northern Shrike, Pine Siskin, Two-banded Checkered Skipper, Two-spotted Skipper, Common Garter Snake, Milk Snake, Fox Sparrow, 13-lined Ground Squirrel, Plumbeous Vireo, Heather Vole, Meadow Vole, Virginia's Warbler, Wilson's Warbler, Cedar Waxwing, Rock Wren.

Threats to Species or Habitat: Moss's Elfin are negatively affected by habitat fragmentation, human encroachment and recreational activities in gulch areas, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. Lazuli Bunting is sensitive to removal or disturbance of shrubland breeding habitats. Northern Flicker are susceptible to habitat fragmentation which reduces the availability of their preferred terrestrial invertebrates and to practices which reduce the availability of trees with dead or diseased tree trunks for nesting. Plumbeous Vireo are sensitive to fragmentation of ponderosa pine habitats. Rock Wren are sensitive to practices which increase habitat fragmentation leading to increased nest parasitism or predation. Virginia's Warbler are vulnerable to forestry practices which may lead to increased cowbird parasitism and reduction of breeding success. Wilson's Warbler are sensitive to forestry, agricultural or recreational activities which reduce or fragment riparian habitats used for breeding. Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production; endocrine and developmental disruption due to agricultural pesticides. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. Brewer's Sparrow are vulnerable to alteration of high-elevation shrubland habitat. Small-footed Myotis are vulnerable to loss of roosting and breeding habitat by habitat fragmentation; increased recreational activities and development may increase the potential of human-transmitted White-Nosed Syndrome into winter colonies; bats accumulate toxins if found in prey near habitat. Large mammals are sensitive to human development and encroachment as well as habitat degradation. This site will be subjected to long-term heavy equipment presence and disturbance in the impending surface mine reclamation of the former quarry site between the two habitat areas.

Habitat Descriptions:

Habitat (General): Diverse and rugged montane shrub habitat and Ponderosa pine woodland following two drainages containing juniper and several fruiting shrubs.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Ponderosa Pine Woodland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland, Western Great Plains Riparian Woodland and Shrubland, Rocky Mountain Lower Montane Riparian Woodland and Shrubland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland.

Size: 214 acres

Elevation: 5518-6393 feet (Mean = 5882 feet)

Life Zone: Montane

Ownership: (Private: Public: X)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #82

Year Revised: New
Year Established: 2013

Common Name: B.L.I.P. and Lappin Pond

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located north of the city of Boulder, near the terminus of N 26th St.

Designation Description: Water sources (Boulder Land, Irrigation and Power ponds) which are supporting an introduced and monitored population of Plains Topminnow, a native fish species in decline and under ESA review by the USFWS.

Key Species:

SSC Known Occurrence: Plains Topminnow (*Fundulus sciadicus*)

SSC Potential Occurrence (within habitat area): American Avocet, Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Double-crested Cormorant, Iowa Darter, Wood Duck, Bald Eagle, Great Egret, Giant Floater, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Harrier, Black-crowned Night Heron, Great Blue Heron, Belted Kingfisher, River Otter, Cylindrical Papershell, Tiger Salamander, Least Shrew, Common Garter Snake, Great Plains Toad, Spiny Softshell Turtle, Meadow Vole

Threats to Species or Habitat: Plains Topminnow are sensitive to siltation, loss of streamside vegetation or backwater breeding habitat, low-flow conditions, reduced water quality or increased water temperature and competition from exotic species such as the western mosquitofish (*Gambusia affinis*).

Habitat Descriptions:

Habitat (General): Two man-made ponds, both fed by separate intermittent streams; includes surrounding riparian and shrubland areas.

Southwest Regional Gap Analysis Project Landcover Types: Open Water, Agriculture, Western Great Plains Riparian Woodland and Shrubland, Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Invasive Perennial Grassland.

Size: 12 acres

Elevation: 5315-5424 feet (Mean = 5347 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder.

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan. BLIP was designated in OSMP's Visitor Master Plan (2005) as a Passive Recreation Area, where visitors can walk off-trail without a permit. Lappin was purchased in 2010 and is closed to the public until a management plan is complete.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #83

Year Revised: New
Year Established: 2013

Common Name: Geer Meadows

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on Heil Valley Ranch, due west of the terminus of Geer Canyon Dr.

Designation Description: Open meadows interspersed with Ponderosa Pine pockets and water sources supporting a unique concentration of Elk and Elk rutting. The meadows also support a diversity of butterflies, including the Dusted Skipper. American Marten are known to occur in this area.

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) concentration; Dusted Skipper (*Atrytonopsis hianna*); American Marten (*Martes americana*); Butterfly concentration

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Tricolored Bat, Prairie Tiger Beetle, Indigo Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Mottled Duskywing, Golden Eagle, Moss's Elfin, American Emerald, Peregrine Falcon, Prairie Falcon, Northern Flicker, Olive-sided Flycatcher, Willow Flycatcher, Gray Fox, Regal Fritillary, Chorus Frog, Northern Leopard Frog, Northern Pocket Gopher, Northern Goshawk, Northern Harrier, White-tailed Jackrabbit, Rocky Mountain Arctic Jutta, Golden-crowned Kinglet, Short Horned Lizard, American Marten, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Long-legged Myotis, Western Small-footed Myotis, Flammulated Owl, Long-eared Owl, Mexican Spotted Owl, Northern Pygmy Owl, Band-tailed Pigeon, North American Porcupine, American Redstart, Williamson's Sapsucker, Western Scrub-Jay, American Water Shrew, Dwarf Shrew, Least Shrew, Merriam's Shrew, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Common Garter Snake, Milk Snake, Brewer's Sparrow, Fox Sparrow, Sage Thrasher, Plumbeous Vireo, Heather Vole, Meadow Vole, Virginia's Warbler, Wilson's Warbler, Cedar Waxwing, American Three-toed Woodpecker, Lewis's Woodpecker, Red-headed Woodpecker

Threats to Species or Habitat: Elk are sensitive to human development and encroachment as well as habitat degradation. Dusted Skipper and other butterflies are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. American Marten are vulnerable to loss of subnivean sites, such as coarse woody debris piles, used as winter habitat; removal of standing or fallen snags or hallow trees; responds negatively to fluctuations in small mammal prey (i.e. voles) which can be influenced by forest management practices or recreational activities which increase fragmentation. This area contains an access road to several residences adjacent to the area.

Habitat Descriptions:

Habitat (General): Ponderosa woodland with open meadows, grassland areas and shrublands.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Western Great Plains Foothill and Piedmont Grassland, Agriculture, Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland.

Size: 193 acres

Elevation: 6126-6616 feet (Mean = 6370 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and USFS.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #84

Year Revised: New
Year Established: 2013

Common Name: Red Hill

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:
Wildlife Concentration:
Unique Biodiversity:

Location (General): Located along east side of Heil Valley Ranch, roughly within an area from Highland Dr. on the north to Nelson Rd. on the south. Encompasses portions of Red Hill and Loukonen-Dairy Farm.

Designation Description: This area represents foothills transition zone habitats with extensive shrub communities, including riparian corridors. This region serves as critical elk foraging and wintering grounds and supports an overall diversity of large mammals. It includes Preble's Meadow Jumping Mouse habitat, areas of rare butterfly concentration and high avian biodiversity.

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) concentration; Large Mammal biodiversity; High Avian biodiversity; Rare Butterfly concentration; Arogos Skipper (*Atrytone arogos*); Dusted Skipper (*Atrytonopsis hianna*); Horned Lark (*Eremophila alpestris*); Western Scrub-Jay (*Aphelocoma californica*); Lazuli Bunting (*Passerina amoena*)

SSC Potential Occurrence (within habitat area): Prairie Falcon, Northern Harrier, Ferruginous Hawk, Rough-legged Hawk, Short-eared Owl, Loggerhead Shrike, Cassin's Sparrow, Grasshopper Sparrow, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, American Badger, Brazilian Free-tailed Bat, Northern Grasshopper Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Black-tailed Prairie Dog, Ord's Kangaroo Rat, Thirteen-lined Ground Squirrel, Lined Snake, Milk Snake

Threats to Species or Habitat: Elk and other large mammals are sensitive to human development and encroachment as well as habitat degradation. Avian biodiversity is sensitive to fragmentation, loss of structural diversity or reduced habitat productivity. Arogos Skipper and Dusted Skipper and other butterflies are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire; Arogos Skipper is especially threatened by chemicals used to control leafy spurge, Canada thistle and grasshoppers. Horned Lark are a ground nesting species vulnerable to the conversion of shortgrass prairie to agriculture or development. Western Scrub-jay are vulnerable to loss of shrublands such as Scrub-oak and mountain mahogany or dense stands of pinyon pine. Lazuli Bunting is sensitive to removal or disturbance of shrubland breeding habitats. The area is bisected by US36 which presents both a barrier and mortality source for elk and other large mammals (bears, cougars). The eastern portions of the property contains several residences, and active agriculture and ditches.

Habitat Descriptions:

Habitat (General): Large, contiguous shrub communities, shortgrass prairie, and Ponderosa pine woodlands. Several intermittent streams and riparian corridors.

Southwest Regional Gap Analysis Project Landcover Types: Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Ponderosa Pine Woodland, Agriculture, Western Great Plains Shortgrass Prairie, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Floodplain Herbaceous Wetland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland.

Size: 3999 acres

Elevation: 5279-6567 feet (Mean = 5748 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #85

Year Revised: New
Year Established: 2013

Common Name: Coffintop Mountain

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on Coffintop Mt. west of Hall Ranch on US Forest Service Core Habitat Area, east of Riverside Ranch.

Designation Description: Rocky outcrops within ponderosa pine that support Townsend's Big-eared Bat maternity roosts.

Key Species:

SSC Known Occurrence: Townsend's Big Eared Bat (*Corynorhinus townsendii*, maternity site)

SSC Potential Occurrence (within habitat area): Big Brown Bat, Hoary Bat, Silver-haired Bat, Lazuli Bunting, Lake Darter, Moss's Elf, American Emerald, Northern Flicker, Northern Goshawk, American Marten, Northern Rock Mouse, Little Brown Myotis, Western Small-footed Myotis, Flammulated Owl, Long-eared Owl, Northern Pygmy Owl, North American Porcupine, Pine Siskin, Snow's Skipper, Two-banded Checkered Skipper, Two-spotted Skipper, Plumbeous Vireo, Virginia's Warbler, Rock Wren

Threats to Species or Habitat: Townsend's Big Eared Bat are vulnerable to loss of roosting and breeding habitat by habitat fragmentation and by human disturbance of roost sites; increased recreational activities and development may increase the potential of human-transmitted White-Nosed Syndrome into winter colonies; bats accumulate toxins if found in prey near habitat.

Habitat Descriptions:

Habitat (General): Ponderosa pine woodlands and rocky outcroppings.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Montane Mesic Mixed Conifer Forest and Woodland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland.

Size: 256 acres

Elevation: 7237-8044 feet (Mean = 7568 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #86

Year Revised: New
Year Established: 2013

Common Name: Powers Marsh

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the east side of the town of Lafayette near the eastern Boulder County border, at the intersection of SH7 and East County Line Rd.

Designation Description: This site is the largest remaining, naturally occurring wetland in the east side of the county. Supports nesting of rare wetland-associated avians species such as Northern Harrier and Least Bittern. The size and location of this habitat represents a vital habitat source for wetland-associated amphibian and reptile species in the plains region of the county.

Key Species:

SSC Known Occurrence: Northern Harrier (*Circus cyaneus*); Least Bittern (*Ixobrychus exilis*)

SSC Potential Occurrence (within habitat area): Chorus Frog, Northern Leopard Frog, Great Plains Toad, American Avocet, American Bittern, Yellow-headed Blackbird, Great Egret, Black-crowned Night Heron, Great Blue Heron, Regal Fritillary, Least Shrew, Meadow Vole, Common Garter Snake

Threats to Species or Habitat: Northern Harrier is especially vulnerable due to nesting habitat declines and foraging habitat in and around wetlands due to land conversion and recreational use; this is a candidate for the most imperiled avian species in Boulder County. Least Bittern are vulnerable to the development and loss of dense wetland breeding/feeding habitat and human encroachment.

Habitat Descriptions:

Habitat (General): Large wetland embedded in agricultural area. Water source (apparently) via un-named channel connecting to Coal Creek.

Southwest Regional Gap Analysis Project Landcover Types: Western Great Plains Floodplain Herbaceous Wetland, Agriculture, Western Great Plains Riparian, Woodland and Shrubland, Open Water.

Size: 64 acres

Elevation: 5093-5117 feet (Mean = 5106 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: Private property.

Current Resource Protection and Management Designations:

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #87

Year Revised: New
Year Established: 2013

Common Name: Quicksilver

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located on the east side of the town of Longmont near the eastern Boulder County border, at the intersection of N 119th St. and Quicksilver Rd.

Designation Description: Riparian corridor of large cottonwoods and adjacent prairie dog colony supporting Bald Eagle nesting.

Key Species:

SSC Known Occurrence: Bald Eagle (*Haliaeetus leucocephalus*); Black Tailed Prairie Dog (*Cynomys ludovicianus*)

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Eastern Red Bat, Hoary Bat, Tricolored Bat, Beaver, Indigo Bunting, Lark Bunting, Iowa Darter, Prairie Falcon, Northern Flicker, Chorus Frog, Northern Pocket Gopher, Northern Harrier, Rough-legged Hawk, Great Blue Heron, Belted Kingfisher, Horned Lark, Northern Grasshopper Mouse, Plains Harvest Mouse, Little Brown Myotis, River Otter, Burrowing Owl, Long-eared Owl, Ord's Kangaroo Rat, American Redstart, Dwarf Shrew, Many-lined Skink, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Thirteen-lined Ground Squirrel, Cedar Waxwing, Red-headed Woodpecker

Threats to Species or Habitat: Bald Eagle are vulnerable to nest site encroachment and destruction of nesting trees, contamination of prey from pesticides and loss of prey base due to large-scale pest control programs. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. This area is subject to livestock grazing and also contains a residence along Quicksilver Road.

Habitat Descriptions:

Habitat (General): Riparian zone along St. Vrain Creek consisting of large cottonwoods; grassland and horse pasture.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture Agriculture, Invasive Perennial Grassland, Western Great Plains Shortgrass Prairie, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Foothill and Piedmont Grassland, Western Great Plains Riparian Woodland and Shrubland, Western Great Plains Floodplain Herbaceous Wetland..

Size: 182 acres

Elevation: 4893-4915 feet (Mean = 4904 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: BCPOS Open Space, city of Longmont and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #88

Year Revised: New
Year Established: 2013

Common Name: Gunbarrel Hill

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located NE of the city of Boulder, at the intersection of Lookout Rd. and N 75th St.

Designation Description: A region of restored, mixed grass prairie habitat supporting Black Tailed Prairie Dogs and their associated species, including nesting Burrowing Owl and predacious raptors such as Golden Eagle and Ferruginous Hawk.

Key Species:

SSC Known Occurrence: Grasshopper Sparrow (*Ammodramus savannarum*); Burrowing Owl (*Athene cunicularia*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); Ferruginous Hawk (*Buteo regalis*); Golden Eagle (*Aquila chrysaetos*)

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Tricolored Bat, Colorado Blue, Colorado Chipmunk, Northern Flicker, Northern Pocket Gopher, Rough-legged Hawk, Horned Lark, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Short-eared Owl, Ord's Kangaroo Rat, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Milk Snake, Cassin's Sparrow, Thirteen-lined Ground Squirrel.

Threats to Species or Habitat: Grasshopper Sparrow is vulnerable to conversion of pastureland to cropland, mowing practices that are unprotective of nesting areas, and urban development leading to predation by domestic animals. Burrowing Owl nesting is sensitive to the loss of nesting sites due to prairie dog declines, disturbance due to urbanization or recreational use of nesting areas, and pesticide use to control pest species which are consumed by the owls. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Ferruginous Hawk are vulnerable to conversion of prairie grassland to cropland and urban development, as well as impacts from increased recreational use; loss of prairie dog colonies due to pest control programs or impact of widespread sylvatic plague mortality. Golden Eagle are vulnerable to human encroachment near their nests sites during the breeding season, such as from climbing; disturbances can result in nest abandonment and negatively impact recruitment rates and population trends. Portions of this area are subject to heavy recreational pressure, on and off-trail, on an extensive neighborhood trail system. Potential disturbance from oil and gas facilities.

Habitat Descriptions:

Habitat (General): Restored shortgrass prairie intermixed with agriculture.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Invasive Perennial Grassland, Western Great Plains Shortgrass Prairie, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Sandhill Shrubland..

Size: 1140 acres

Elevation: 5194-5421 feet (Mean = 5337 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder and BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. Portions of the area are closed between March 15- Oct 15 to protect nesting burrowing owls. The area on City of Boulder Open Space and Mountain Parks properties is designated a Grassland Preserve related to management of Black-tailed Prairie Dogs.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #89

Year Revised: New
Year Established: 2013

Common Name: South Boulder Creek Floodplain and Terrace

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located SE of the city of Boulder, generally encompassing an area of South Boulder Creek located between Baseline Road and Eldorado Springs.

Designation Description: Riparian corridor, wet meadow and creek habitat which supports nesting, feeding and resting areas for several imperiled species of special concern including the Northern Leopard Frog and Plains Topminnow. Federally designated Critical Habitat for the Preble's Meadow Jumping Mouse.

Key Species:

SSC Known Occurrence: Bobolink (*Dolichonyx oryzivorus*); Northern Leopard Frog (*Rana pipiens*); Chorus frog (*Pseudacris triseriata*); Tiger Salamander (*Ambystoma tigrinum*); Two-spotted Skipper (*Euphyes bimacula*); Plains Topminnow (*Fundulus sciadicus*); Northern Harrier (*Circus cyaneus*); Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*)*

SSC Potential Occurrence (within habitat area): American Avocet, Hops Feeding Azure, American Beaver; American Badger, Brazilian Free-tailed Bat, Townsend's Big-eared Bat, Beaver, American Bittern, Least Bittern, Yellow-headed Blackbird, Colorado Blue, Indigo Bunting, Lark Bunting, Lazuli Bunting, Bushtit, Colorado Chipmunk, Uinta Chipmunk, Hornyhead Chub, Iowa Darter, Johnny Darter, Mottled Duskywing, Golden Eagle, Great Egret, Moss's Elfin, Prairie Falcon, Peregrine Falcon, Northern Flicker, Giant Floater, Willow Flycatcher, Gray Fox, Regal Fritillary, Northern Pocket Gopher, Ferruginous Hawk, Rough-legged Hawk, Black-crowned Night Heron, Great Blue Heron, White-tailed Jackrabbit, Belted Kingfisher, Horned Lark, Short Horned Lizard, Brassy Minnow, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Fringed Myotis, Little Brown Myotis, Western Small-footed Myotis, River Otter, Burrowing Owl, Short-eared Owl, Cylindrical Papershell, Banded Physa, Band-tailed Pigeon, North American Porcupine, Black-tailed Prairie Dog, Ord's Kangaroo Rat, American Redstart, Western Scrub-Jay, Bigmouth Shiner, Common Shiner, Dwarf Shrew, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Arogos Skipper, Cross-line Skipper, Dusted Skipper, Ottoe Skipper, Rhesus Skipper, Simius Roadside Skipper, Common Garter Snake, Lined Snake, Milk Snake, Brewer's Sparrow, Cassin's Sparrow, Grasshopper Sparrow, Spotted Ground Squirrel, Thirteen-lined Ground Squirrel, Stonecat, Sage Thrasher, Great Plains Toad, Plains Spadefoot Toad, Plain's Topminnow, Spiny Softshell Turtle, Veery, Plumbeous Vireo, Heather Vole, Meadow Vole, Virginia's Warbler, Cedar Waxwing, Blue-winged Dancer, Wood Duck, Bald Eagle, Belted Kingfisher, American Redstart, Red-headed Woodpecker, Big Brown Bat, Eastern Red Bat, Hoary Bat, Tricolored Bat

Threats to Species or Habitat: Bobolink are affected by early cutting of hayfields during peak nesting periods and habitat loss due to land conversion (esp. meadows and prairies). Northern Leopard Frog are vulnerable to destruction of wetland habitats, the invasion of bullfrogs due to habitat disturbance and subsequent predation or mortality from disease. Chorus Frog are sensitive to agricultural practices which use pesticides, herbicides or fertilizers in the habitat, and vulnerable to loss of aquatic habitat quality. Tiger Salamander are vulnerable to stocking or invasion of fish into previously fishless waterbodies; modification or destruction of wetland, seasonal or semipermanent aquatic habitats; conversion of terrestrial uplands adjacent to wetlands, which serve as burrowing substrate for juveniles, into urban development or agriculture production; endocrine and developmental disruption due to agricultural pesticides. Two-spotted Skipper are extremely sensitive to human encroachment and are negatively affected by the reduction of marsh habitat size, conversion to wet pasture or the effects of fragmentation; loss of tall stalks in open sedge marshes, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. Plains Topminnow are sensitive to siltation, loss of streamside vegetation or backwater breeding habitat, low-flow conditions, reduced water quality or increased water temperature and

competition from exotic species such as the western mosquitofish (*Gambusia affinis*). Northern Harrier are a ground-nesting species vulnerable to loss of abundant, dense vegetation used for nesting cover, especially in wetlands; urbanization which increases predation of nesting sites by domesticated and urban-adapted wildlife; habitat loss, which reduces native small mammals used as prey, caused by such land uses as large-scale agriculture and expanding urbanization. Preble's Meadow Jumping Mouse are sensitive to riparian fragmentation and loss of structural diversity of the vegetation (e.g. shrubs). South Boulder Creek is paralleled by open space trail and is also subject to fishing pressure.

Habitat Descriptions:

Habitat (General): South Boulder Creek, including riparian habitat of cottonwood and willows, adjacent wet meadows, small ponds, irrigated flood terrace hayfields and vegetated ditches.

Southwest Regional Gap Analysis Project Landcover Types: Agriculture, Western Great Plains Floodplain Herbaceous Wetland, Western Great Plains Riparian Woodland and Shrubland, Developed, Open Space - Low Intensity, Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Open Water, Developed, Medium - High Intensity, Rocky Mountain Lower Montane-Foothill Shrubland.

Size: 1270 acres

Elevation: 5252-5531 feet (Mean = 5387 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder and private property.

Current Resource Protection and Management Designations:

See the relevant city of Boulder management plan. Portions of the riparian area are fenced and closed to public access, other portions have controlled access. Dogs not allowed in section from South Boulder Road to Hwy 93. Entire stretch designated federally as Critical Habitat for Preble's meadow jumping mouse out to 140 m from stream. Designated as future Habitat Conservation Area under City of Boulder Open Space and Mountain Parks Visitor Master Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #90

Year Revised: New
Year Established: 2013

Common Name: North Boulder Grasslands

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X

Wildlife Concentration:

Unique Biodiversity: X

Location (General): Located north of the city of Boulder, at the intersection of US36 and Longhorn Rd.

Designation Description: The North Boulder Grasslands consist of a series of hogbacks and drainages that flatten out into mixed grass prairie habitat supporting a variety of species of concern. Very high quality habitat supports a concentration of several rare butterfly species, such as the Ottoe Skipper.

Key Species:

SSC Known Occurrence: Grasshopper Sparrow (*Ammodramus savannarum*); Black Tailed Prairie Dog (*Cynomys ludovicianus*); Ottoe Skipper (*Hesperia otteo*); Arogos Skipper (*Atrytone aragos*); Cross-line Skipper (*Polites origenes*); Dusted Skipper (*Atrytonopsis hianna*); Rock Wren (*Salpinctes absoletus*); Indigo Bunting (*Passerina cyenea*); Lazuli Bunting (*Passerina amoena*); Milk Snake (*Lampropeltis triangulum*)

SSC Potential Occurrence (within habitat area): American Badger, Big Brown Bat, Brazilian Free-tailed Bat, Townsend's Big-eared Bat, Tricolored Bat, Colorado Blue, Colorado Chipmunk, Mottled Duskywing, Golden Eagle, Regal Fritillary, Northern Pocket Gopher, Ferruginous Hawk, Rough-legged Hawk, Western Scrub-jay, Horned Lark, Northern Mockingbird, Northern Grasshopper Mouse, Olive-back Pocket Mouse, Plains Harvest Mouse, Plains Pocket Mouse, Silky Pocket Mouse, Fringed Myotis, Western Small-footed Myotis, Burrowing Owl, Short-eared Owl, Ord's Kangaroo Rat, Common Garter Snake, Dwarf Shrew, Least Shrew, Merriam's Shrew, Loggerhead Shrike, Rhesus Skipper, Simius Roadside Skipper, Lined Snake, Cassin's Sparrow, Thirteen-lined Ground Squirrel, Rock Wren, Northern Rock Mouse.

Threats to Species or Habitat: Grasshopper Sparrow is vulnerable to conversion of pastureland to cropland, mowing practices that are unprotective of nesting areas, and urban development leading to predation by domestic animals. Black Tailed Prairie Dogs are vulnerable to direct population declines from large-scale pest control programs and outbreaks of sylvatic plague, as well as conversion of prairie habitat to agriculture, urban development or recreational uses. Ferruginous Hawk are vulnerable to conversion of prairie grassland to cropland and urban development, as well as impacts from increased recreational use; loss of prairie dog colonies due to pest control programs or impact of widespread sylvatic plague mortality. Ottoe Skipper, Arogos Skipper, Cross-line Skipper and Dusted Skipper are negatively affected by the reduction of prairie habitat size and fragmentation, weed encroachment into host plant habitats, diversion or modification of water courses and associated host plant communities, and the potentially disruptive effects of some methods of prescribed fire. Rock Wren are sensitive to practices which increase habitat fragmentation leading to increased nest parasitism or predation. Indigo Bunting are vulnerable to fragmentation or loss of riparian forest, shrub meadows, and edge of agricultural fields; specific threats include intensive agricultural practices, mowing of roadsides and fields, increased urbanization, construction of transmission towers which cause substantial mortality during migration, and vehicle collisions along roadside where breeding and singing occur. Lazuli Bunting is sensitive to removal or disturbance of shrubland breeding habitats. Milk Snake are vulnerable to direct mortality from human persecution due to mistaking it for the venomous massasauga rattlesnake due to its colour and tendency to vibrate its tail when disturbed; habitat loss due to urbanization, road construction and conversion of natural areas to agricultural uses.

Habitat Descriptions:

Habitat (General): Mixedgrass prairie, adjacent hogbacks and intermittent stream drainages.

Southwest Regional Gap Analysis Project Landcover Types: Western Great Plains Foothill and Piedmont Grassland, Invasive Perennial Grassland, Rocky Mountain Lower Montane-Foothill Shrubland, Rocky Mountain Ponderosa Pine Woodland, Western Great Plains Shortgrass Prairie, Western Great Plains Cliff and Outcrop.

Size: 1087 acres

Elevation: 5473-6681 feet (Mean = 5953 feet)

Life Zone: Plains

Ownership: (Private: Public:)

Comments: City of Boulder and BCPOS Open Space and CE.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. This area was designated in OSMP's Visitor Master Plan (2005) as a Habitat Conservation Area, where visitors require a permit to walk off-trail and dogs need to be leashed.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #91

Year Revised: New
Year Established: 2013

Common Name: Bummer's Gulch

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located west of the city of Boulder, NE of the intersection between Boulder Canyon Dr. and Sugarloaf Rd.

Designation Description: Ponderosa Pine Forest and Woodland mixed with Montane-Foothill Shrubland supporting a concentration of Grey Fox and a rare type of Fence Lizard which may be endemic to this gulch.

Key Species:

SSC Known Occurrence: Fence Lizard (*Sceloporus undulatus*; rare type); Grey Fox (*Urocyon cinereoargenteus*) concentration area

SSC Potential Occurrence (within habitat area): Big Brown Bat, Hoary Bat, Silver-haired Bat, Townsend's Big-eared Bat, Lazuli Bunting, Bushtit, Colorado Chipmunk, Mottled Duskywing, American Emerald, Peregrine Falcon, Northern Flicker, Northern Pocket Gopher, Northern Goshawk, Northern Rock Mouse, Fringed Myotis, Little Brown Myotis, Long-legged Myotis, Flammulated Owl, Long-eared Owl, Northern Pygmy Owl, North American Porcupine, Merriam's Shrew, Pine Siskin, Milk Snake, Plumbeous Vireo.

Threats to Species or Habitat: Fence Lizard are vulnerable to fragmentation of rocky habitats or the surrounding forest which increases the occurrence of predatory species; reduction of the habitat configuration in Bummer's Gulch may eliminate the conditions which created and maintain the rare phenotype of this population of this species. Grey Fox are sensitive to forest management, urbanization or recreational activities which reduce the distribution or quantity of its prey, particularly small mammals such as voles, mice or rabbits; Bummer's Gulch is a productive habitat for Grey Fox and land use decisions should consider impacts on habitat quality. This area contains the Bummer's Rock Trail and a portion of the access road to the water treatment plant.

Habitat Descriptions:

Habitat (General): South facing aspect interspersed with rocky outcrops, Ponderosa pine and shrublands.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Ponderosa Pine Woodland, Rocky Mountain Lower Montane-Foothill Shrubland, Western Great Plains Foothill and Piedmont Grassland, Rocky Mountain Montane Dry-Mesic Mixed Conifer Forest and Woodland.

Size: 116 acres

Elevation: 5907-6647 feet (Mean = 6318 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE and city of Boulder.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #92

Year Revised: New
Year Established: 2013

Common Name: Kenosha Heronry

Critical Wildlife Habitat Criteria:

Vital SSC Habitat: X
Wildlife Concentration: X
Unique Biodiversity:

Location (General): Located north of the town of Erie, near the corner of N 115th St. and Kenosha Rd.

Designation Description: Cottonwood gallery forest along Boulder Creek which acts with a limited number of other sites to support Great Blue Heron nesting, and likely other herons, in the county.

Key Species:

SSC Known Occurrence: Great Blue Heron (*Ardea herodias*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Great Blue Heron are sensitive to the loss of nest site trees or excessive site encroachment, and survival of adults and young depend on prey from nearby high quality aquatic habitats producing fish and amphibians. The site is subject to nearby ongoing oil and gas maintenance and possible future development. It also contains an active farming residence. The site will be subjected to protracted heavy equipment presence and construction in the upcoming Army Corps of Engineers stream redevelopment project (2014-2015).

Habitat Descriptions:

Habitat (General): Riparian woodland and shrubland along Boulder Creek.

Southwest Regional Gap Analysis Project Landcover Types: Western Great Plains Riparian Woodland and Shrubland.

Size: 7 acres

Elevation: 4984-4991 feet (Mean = 4989 feet)

Life Zone:

Ownership: (Private: Public:)

Comments: BCPOS Open Space.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #93

Year Revised: New
Year Established: 2013

Common Name: Upper Caribou Park Willow Carr Complex

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located NW of the town of Nederland, occurring at the terminus of CR128 at Caribou Hill.

Designation Description: Willow carrs are important avian habitats comprising about 1% of the mountain landscape in Boulder County, having 2-3 times the breeding bird density as compared to adjacent habitats and supporting several avian and mammal species which are restricted to this habitat type. This site supports an active American Beaver colony and associated species. This new area combines and supercedes the old willow carr CWH's 48, 49, and 50 (Horseshoe Creek, Caribou Park, and Upper Caribou Park).

Key Species:

SSC Known Occurrence: Avian and Small Mammal biodiversity; American Beaver (*Castor canadensis*)

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Willow carrs are rare and sensitive habitats which are vulnerable to activities such as development, domestic animal grazing, and recreational activities such as OHV use, campgrounds or hiking trails placed inside the habitat, as well as construction of reservoirs, peat extraction and road construction. American Beaver are vulnerable to trapping for sport or direct removal of dams or individuals. This area is bisected by several roads, trails, and spurs, providing recreational (hiking and OHV) access: CR116J, CR128J, and USFS505.

Habitat Descriptions:

Habitat (General): Subalpine willow carr. Vegetation is dominated by willow and birch shrubs along with sedges and grasses. Site contains active beaver colony and associated ponds. An unnamed perennial stream flows through all willow carrs in this area, and site contains numerous small ponds.

Southwest Regional Gap Analysis Project Landcover Types: Rocky Mountain Aspen Forest and Woodland, Rocky Mountain Cliff and Canyon, Rocky Mountain Lodgepole Pine Forest, Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Meadow, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine-Montane Riparian Woodland, Southern Rocky Mountain Montane-Subalpine Grassland.

Size: 1002 acres

Elevation: 9703-10664 feet (Mean = 9979 feet)

Life Zone: Subalpine

Ownership: (Private: Public:)

Comments: USFS and private property.

Current Resource Protection and Management Designations:

See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #94

Year Revised: New
Year Established: 2013

Common Name: North Foothills Elk Herd

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located north of Jamestown, generally occurring between Beaver Res. And Geer Canyon Drive.

Designation Description: One of three regions of known elk migration in the county. This corridor in the mountainous north side of the county connects the sub-alpine area near Beaver Reservoir to the lower montane elk habitats in the area of Geer Canyon.

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) and other migratory species

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Elk and other large mammals are sensitive to human development, forestry practices and recreational activities such as trail building, especially along known and well-established migration routes. Designated and protected migration routes are critical for migratory mammals to move in response to seasonal weather change or to complete breeding activities. The degradation of areas within the migration corridors, by such activities as building fences of excessive height, dense urban development, or high-use recreational trail establishment, will likely reduce the viability of elk herds in the county and could lead to greater wildlife conflict with existing mountain developments as elk may seek alternative and lower-quality routes in response to fragmentation of corridor habitat. This corridor contains several small mountain subdivisions and summer recreation camps. The western end is bisected by the Peak-to-Peak Highway (CO72), which serves as both a barrier and mortality source.

Habitat Descriptions:

Habitat (General):

Southwest Regional Gap Analysis Project Landcover Types: .

Size: 9132 acres

Elevation: 6022-9363 feet (Mean = 8170 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS, BCPOS Open Space and CE, state of Colorado and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #95

Year Revised: New
Year Established: 2013

Common Name: Winiger Ridge Elk Herd

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located south of the town of Nederland, generally occurring between Eldora Ski Resort and Twin Sisters Pk.

Designation Description: One of three regions of known elk migration in the county. This corridor connects sub-alpine habitats near the Lake Eldora Ski Resort to lower montane elk habitats in the area of Winiger Ridge/Walker Ranch.

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) and other migratory species

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Elk and other large mammals are sensitive to human development, forestry practices and recreational activities such as trail building, especially along known and well-established migration routes. Designated and protected migration routes are critical for migratory mammals to move in response to seasonal weather change or to complete breeding activities. The degradation of areas within the migration corridors, by such activities as building fences of excessive height, dense urban development, or high-use recreational trail establishment, will likely reduce the viability of elk herds in the county and could lead to greater wildlife conflict with existing mountain developments as elk may seek alternative and lower-quality routes in response to fragmentation of corridor habitat. The area contains numerous residences, several designated and undesignated USFS trails (including the very busy West Mag TH), and the very busy Magnolia Road (CR132) and Peak-to-Peak Highway (CO72).

Habitat Descriptions:

Habitat (General):

Southwest Regional Gap Analysis Project Landcover Types: .

Size: 7053 acres

Elevation: 7281-9459 feet (Mean = 8325 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: USFS, BCPOS Open Space and CE, city of Nederland, state of Colorado, city and county of Denver and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

Critical Wildlife Habitat #96

Year Revised: New
Year Established: 2013

Common Name: Peewink Mountain Elk Herd

Critical Wildlife Habitat Criteria:

Vital SSC Habitat:

Wildlife Concentration:

Unique Biodiversity:

Location (General): Located north of the town of Nederland, generally occurring between Caribou Ranch to Sugarloaf Mountain.

Designation Description: One of three regions of known elk migration in the county. This corridor connects sub-alpine and upper montane summer habitats near Caribou Ranch to lower montane wintering grounds in the area of Boulder Creek.

Key Species:

SSC Known Occurrence: Elk (*Cervus elaphus*) and other migratory species

SSC Potential Occurrence (within habitat area):

Threats to Species or Habitat: Elk and other large mammals are sensitive to human development, forestry practices and recreational activities such as trail building, especially along known and well-established migration routes. Designated and protected migration routes are critical for migratory mammals to move in response to seasonal weather change or to complete breeding activities. The degradation of areas within the migration corridors, by such activities as building fences of excessive height, dense urban development, or high-use recreational trail establishment, will likely reduce the viability of elk herds in the county and could lead to greater wildlife conflict with existing mountain developments as elk may seek alternative and lower-quality routes in response to fragmentation of corridor habitat. The area contains numerous residences, as well as the very busy Sugarloaf Road (CR122) and the Peak-to-Peak Highway (CO72).

Habitat Descriptions:

Habitat (General):

Southwest Regional Gap Analysis Project Landcover Types: .

Size: 5947 acres

Elevation: 7355-8876 feet (Mean = 8167 feet)

Life Zone: Montane

Ownership: (Private: Public:)

Comments: BCPOS Open Space and CE, USFS, city of Boulder and private property.

Current Resource Protection and Management Designations:

See relevant BCPOS and city of Boulder management plans. See the Arapaho and Roosevelt National Forests Land and Resource Management Plan.

Information Sources and References: Contact Boulder County Parks and Open Space Resource Management staff for a list of information sources and references compiled to create this Critical Wildlife Habitat description.

APPENDIX I
*ENVIRONMENTAL CONSERVATION AREA
DESCRIPTIONS*

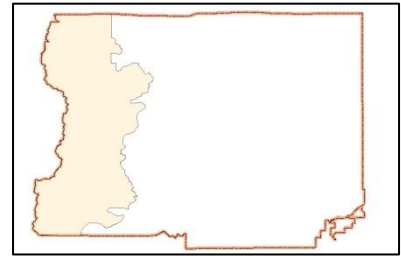
Environmental Conservation Area #1

Common Name: Indian Peaks

Location (General): East of the Continental Divide, bounded by the county line to the north and south, west of SH72 and SH7

Size: 112,344 acres

Life Zones: Upper Montane, Sub-alpine, Alpine.



Indian Peaks ECA location within Boulder County.

Rationale and Background:

The largest of the Environmental Conservation Areas (ECAs) is centered on the Indian Peaks Wilderness and Rocky Mountain National Park. At 112,344 acres, it represents just over 20% of Boulder County. It is our connection to the Continental Divide, the spine of the Southern Rocky Mountains, and the greater Rocky Mountain National Park ecosystem. It represents the most likely habitat for Lynx and Wolverine in the county. This is the summer home of most of our elk herds and bighorn sheep. Old growth forests, willow carrs, boreal toads, black swifts, twayblades, ice grass, and several species of moonwort are present. For some animals, this is probably their population source area.

Conservation efforts in this area have focused on protecting key ecological components at the lower edge of the ECA: montane parklands and habitat connectors to lower elevations. In the mid-1980s, Lee and Virginia Evans donated a conservation easement on the 650-acre Arapaho Ranch, a montane parkland with important wetlands, grasslands, and transitional elk range, to Colorado Open Lands. BCNA worked with the City of Longmont and Rocky Mountain National Park to help secure greater protection of the Copeland Willow Carr (at 77 acres, it is the largest montane willow carr in the Front Range). The site became designated as a State Natural Area. Boulder County, City of Boulder, and GOCO funds were used to acquire easements or fee title to much of Caribou Ranch, another significant montane parkland. Near where the South St. Vrain Creek crosses the peak-to-Peak Highway, a group of property owners (Benedict, Welch, Goodnow, McKenna, Schmoll, and others) have donated conservation easements to the Nature Conservancy and Boulder County to protect this important parkland and habitat connectors between the Indian Peaks, South St. Vrain, and Walker Mountain ECAs.

In the late 1980s, Boulder County Nature Association supported, both financially and with volunteers, a study of the movements of the Winiger Ridge elk herd. One of the outcomes of the study was the recognition of the importance of Reynolds Ranch and surrounding lands along Magnolia Road to animal movement between Winiger Ridge and the Arapaho Ranch and Indian Peaks. Boulder County has acquired Reynolds Ranch and some of the surrounding lands in part to better conserve this wildlife movement corridor.

Caribou Flats and Park have long been recognized as significant sites for a number of rare plants and butterflies. It also contains some large subalpine willow carrs. A cooperative management effort between the US Forest Service City, the city of Boulder Utilities, and several recreation groups have helped to reduce damage from off-road vehicles.

Naturalness: Largest roadless area in the county. Most is designated Wilderness Area. Contains Copeland Willow Carr Natural Area.

Quality and Uniqueness: Largest quantity of old-growth forests. Tundra. Montane parklands. High number of significant wetlands. Habitat for Greenback Cutthroat Trout. Summer Elk concentration areas. Several Elk-calving areas. Important movement corridors for large-mammals in both east/west and north/south directions.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

Boulder County Designations	Count
Critical Wildlife Habitats:	33
Rare Plant Areas:	61
High Biodiversity Areas:	30
Natural Areas (B1-B3):	Yes
Natural Landmarks:	Yes

USFS Designations	Acres
Backcountry Recreation	13,552
Intermix	8,780
Dispersed Recreation	5,163
Wilderness	4,416
Forested Flora and Fauna Habitats	4,317
Backcountry Recreation-Motorized	3,482
Scenery	3,236
Developed Recreation Complexes	2,622
Special Interest Areas-Emphasizing Use or Interpretation	1,061
Ski-Based Resorts	386

Other Designations

City of Boulder Watershed
 Wild Basin Area, Rocky Mountain National Park, National Park Service
 Niwot Ridge, Long Term Ecological Research Station, CU Boulder
 Peak-to-Peak Scenic and Historic Byway, State of Colorado, DOT

Year Established: 1995

Year Revised: 2013

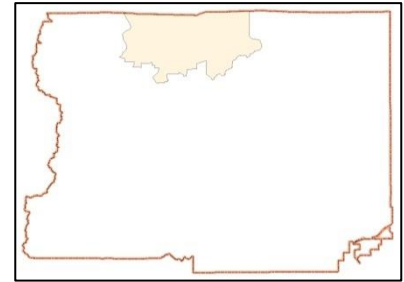
Environmental Conservation Area #2

Common Name: North Saint Vrain

Location (General): West of the town of Lyons, south of the Boulder County border, north of South St. Vrain Dr., east of SH7

Size (acres): 38,133 acres

Life Zones: Lower Montane, Upper Montane, Sub-alpine.



North Saint Vrain ECA location within Boulder County.

Rationale and Background:

The largest foothills to montane ECAs are centered on the North St. Vrain and South St. Vrain Canyons. This ECA represents some of the best roadless foothill habitat along the Front Range. This area contains old-growth ponderosa pine forests, elk winter concentration areas, golden eagle nest sites, and good habitat for mountain lion and black bear. The North St. Vrain is a bighorn sheep concentration area, a designated Wild Trout Stream, and contains a sizeable population of the rare plant Larimer aletes. This ECA also contains imperiled plant communities comprised of foothill grass and shrub species that have been degraded over much of the West.

During the mid-1980s conservation efforts were focused on preserving this area from additional degradation. A proposal to place a dam and reservoir along the North St. Vrain between North and South Sheep Mountains spearheaded an effort, largely through the work of BCNA's Mike Figgs, to recognize the ecological importance of the canyon and to stop the potential of any new main stem dams on the creek. Local citizens and conservation groups worked to conserve private lands within these areas. The Nature Conservancy purchased Sheep Mountain Ranch, located in the heart of the North St. Vrain Canyon, until federal funds were available as a Forest Service acquisition. The 700-acre Riverside Ranch, located west of Coffintop Mountain, was deeded to Boulder County Open Space after the property owner transferred the development rights to a more acceptable receiving area. The Boulder County Land Trust was actively talking with a number of the large ranch owners in both of the canyons. Boulder County has purchased Open Space and conservation easements on many of these lands. Conservation easements were purchased on the Trevarton Ranch, located west of North Foothills Highway, and the Lillian Trevarton Ranch east of Meeker Park. The final large county acquisitions were the purchases of the Hall Ranch and Heil Valley Ranch. With these acquisitions, the lower portions of the North St. Vrain and South St. Vrain ECAs have been conserved.

The update of the Arapaho and Roosevelt National Forest Plan helped increase the protection of these areas. Much of the North St. Vrain ECA was designated as a Research Natural Area. This designation has increased the level of conservation placed on the canyons of north-central Boulder County.

Naturalness: Largest foothills/montane roadless area in county.

Quality and Uniqueness: Largest stands of old-growth Ponderosa pine/Douglas fir. Golden Eagle nest sites. Wild trout stream. Elk critical winter range, winter concentration areas and calving areas. Bighorn Sheep concentration area. Area is considered good habitat for Mountain Lion and Black Bear due to montane/foothills habitat, size and high degree of naturalness. Excellent riparian habitat along North St. Vrain Creek. Important east/west large mammal movement corridor. Prairie Dog colony.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>
Critical Wildlife Habitats:	7
Rare Plant Areas:	14
High Biodiversity Areas (B1-B3):	4
Natural Areas:	Yes
Natural Landmarks:	Yes

<u>USFS Designations</u>	<u>Acres</u>
Forested Flora and Fauna Habitats	11203
Core Habitat Area	5584
Research Natural Area	5277
Dispersed Recreation	3595
Intermix	2981
Scenery	2112
Core Habitat Area	733

Other Designations:

Button Rock Preserve and Ralph Price Reservoir, City of Longmont
Wild Trout Water, Colorado Parks and Wildlife

Year Established: 1995

Year Revised: 2013

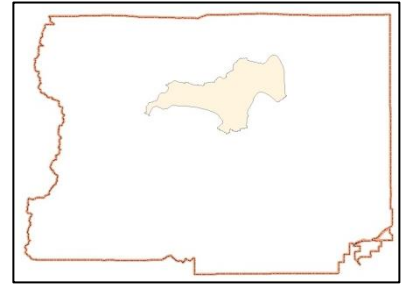
Environmental Conservation Area #3

Common Name: South Saint Vrain and Foothills

Location (General): West of N 51st St., south of South St. Vrain Dr., North of Lefthand Canyon Dr.

Size (acres): 25,929 acres

Life Zones: Plains, Lower Montane, Upper Montane.



South Saint Vrain and Foothills ECA location within Boulder County.

Rationale and Background:

The largest foothills to montane ECAs are centered on the North St. Vrain and South St. Vrain Canyons. This ECA represents some of the best roadless foothill habitat along the Front Range. This area contains old-growth ponderosa pine forests, elk winter concentration areas, golden eagle nest sites, and good habitat for mountain lion and black bear. This ECA contains imperiled plant communities comprised of foothill grass and shrub species that have been degraded over much of the West. Local citizens and conservation groups worked towards protection of private lands within this area. Boulder County has acquired conservation easements and Open Space on this area which has increased the conservation of its outstanding ecological values.

The update of the Arapaho and Roosevelt National Forest Plan helped increase the protection of these areas. The Central Gulch portion of the South St. Vrain was designated as Core Area. This designation has increased the level of conservation placed on the canyons of north-central Boulder County.

Naturalness: Roadless areas exist in Central Gulch and South St. Vrain Canyon.

Quality and Uniqueness: Elk critical winter range, winter concentration areas and calving areas. Golden Eagle nest sites. Small areas of old-growth ponderosa pine/Douglas fir. Area is considered good habitat for Mountain Lion and Black Bear due to montane/foothills habitat, size and high degree of naturalness. Important east/west large-mammal movement corridor. Prairie Dog colony.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

Boulder County Designations	Count
Critical Wildlife Habitats:	16
Rare Plant Areas:	44
High Biodiversity Area (B1-B3)s:	6
Natural Areas:	Yes
Natural Landmarks:	Yes

<u>USFS Designations</u>	<u>Acres</u>
Core Habitat Area	5397
Forested Flora and Fauna Habitats	3637
Scenery	2633
Dispersed Recreation	2347
Intermix	2297

Other Designations:

None

Year Established: 1995

Year Revised: 2013

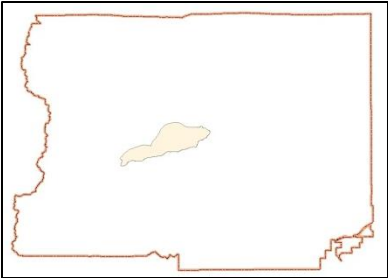
Environmental Conservation Area #4

Common Name: Walker Mountain

Location (General): West of James Canyon Dr., south of Jamestown, North of Lefthand Canyon Dr., east of the town of Ward

Size (acres): 9234 acres

Life Zones: Lower Montane, Upper Montane, Sub-alpine.



Walker Mountain ECA location within Boulder County.

Rationale and Background:

This ECA is located in the heart of Boulder County’s mineral belt, while having some fragmentation, it contains significant ecological qualities along with geographic importance.

The Walker Mountain ECA is generally located south of Jamestown, north of Lefthand Canyon, east of the intersections of James Canyon Dr. and Lefthand Canyon, and west of Ward. It contains several roadless areas, stands of old growth ponderosa pine and Douglas-fir, an elk winter concentration area, and a high quality riparian area along Spring Gulch. Local citizens have worked to conserve the water quality of James Creek and the forest ecosystems surrounding it and to reduce fragmentation by closing some roads to James Creek. These efforts have also worked to close social trails by unauthorized motorized recreation in the Walker Mountain area. Several of the property owners south of Overland Road and along the Peak-to-Peak Highway have donated conservation easements to The Nature Conservancy. These easements protect an important animal movement corridor linking Walker Mountain ECA to the Indian Peaks. Boulder County has acquired several inholdings within the ECA to further reduce fragmentation.

Naturalness: Roadless areas exist on east flank of Nugget Hill, north flank of Walker Mountain and between spring Gulch and Gold Lake.

Quality and Uniqueness: Elk critical range and winter concentration areas. Old-growth ponderosa pine/Douglas fir. Spring Gulch is considered high quality riparian/wetland habitat. Important east/west large-mammal movement corridor.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

Boulder County Designations	Count	Acres
Critical Wildlife Habitats:	0	
Rare Plant Areas:	0	
High Biodiversity Area (B1-B3)s:	3	
Natural Areas:	No	
Natural Landmarks:	No	

<u>USFS Designations</u>	<u>Acres</u>
Forested Flora and Fauna Habitats	5440
Intermix	2292
Private	539
Dispersed Recreation	537
Intermix	5

Other Designations:

None

Year Established: 1995

Year Revised: 2013

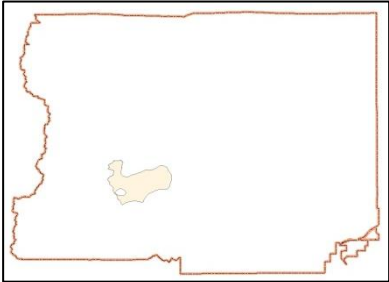
Environmental Conservation Area #5

Common Name: Fourmile Creek and Bald Mountain

Location (General): West of Dixon Rd., south of Gold Hill Rd., north of Sugarloaf Rd., east of SH72

Size (acres): 8,451 acres

Life Zones: Lower Montane, Upper Montane, Sub-alpine.



Fourmile Creek and Bald Mountain ECA location within Boulder County.

Rationale and Background:

Three ecologically significant areas anchor Fourmile Creek/Bald Mountain ECA. Bald Mountain (the one along the Switzerland Trail railroad grade road) is a Colorado Natural Heritage Program (CNHP) Element Occurrence of Foothills Ponderosa Pine Savannah, as well as several other types of montane grassland. Todd Gulch Fen, located along the Gold Hill Road, is a highly biodiverse area. The third area is a one mile stretch of Fourmile Creek between Sunset and the Peak-to-Peak Highway that is roadless and trailless. This ECA faces some challenges from unauthorized motorized recreation.

Naturalness: Roadless area exists along Fourmile Creek west of Sunset. Much of landscape, except for Fourmile Canyon Road and Switzerland Trail, is steep and roadless.

Quality and Uniqueness: Elk critical winter range. Old-growth ponderosa pine, Douglas fir and Lodgepole pine. Important east/west large-mammal movement corridor.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

Boulder County Designations	Count
Critical Wildlife Habitats:	1
Rare Plant Areas:	10
High Biodiversity Areas (B1-B3):	4
Natural Areas:	No
Natural Landmarks:	Yes

USFS Designations	Acres
Dispersed Recreation	4663
Forested Flora and Fauna Habitats	2122
Scenery	557
Private	357
Intermix	489
Special Interest Areas-Emphasizing Use or Interpretation	100

Other Designations:

None

Year Established: 1995

Year Revised: 2013

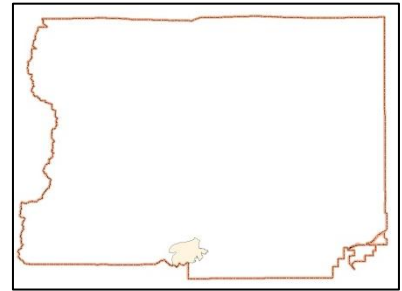
Environmental Conservation Area #6

Common Name: Winiger Ridge

Location (General): West of Gross Res., south of Flagstaff Rd., north of the Boulder County border, east of Magnolia Dr.

Size (acres): 3,460 acres

Life Zones: Lower Montane, Upper Montane.



Winiger Ridge ECA location within Boulder County.

Rationale and Background:

The Winiger Ridge ECA is an area which has received significant conservation and restoration. Winiger Ridge has long been known as an important wintering area and movement corridor for elk. The area contains two important Foothill Riparian areas along South Boulder Creek (above Gross Reservoir) and Winiger Gulch, both recognized as highly biodiverse regions. The US Forest Service has been working to control unauthorized motorized recreation.

Due to significant efforts by private citizens and the US Forest Service, the area between Winiger Gulch and South Boulder Creek serves as an effective core preserve.

Naturalness: Roadless area in South Boulder Creek Canyon west of Gross Reservoir. Winiger Ridge is closed to motorized vehicles during winter.

Quality and Uniqueness: Elk critical winter range and winter concentration area. Old-growth Ponderosa pine/Douglas fir. Important east/west large-mammal movement corridor.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

Boulder County Designations	Count
Critical Wildlife Habitats:	1
Rare Plant Areas:	0
High Biodiversity Areas (B1-B3):	1
Natural Areas:	No
Natural Landmarks:	Yes

USFS Designations	Acres
Forested Flora and Fauna Habitats	3425

Other Designations:

Year Established: 1995

Year Revised: 2013

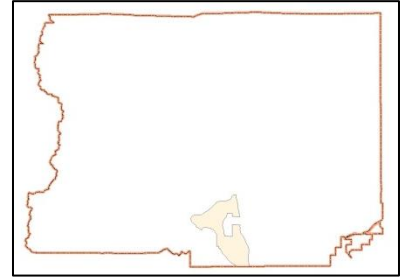
Environmental Conservation Area #7

Common Name: Hawkin Gulch/Walker Ranch/Upper Eldorado Canyon

Location (General): West of Eldorado Springs, south of Boulder Canyon Dr., north of the Boulder County border, east of Gross Res.

Size (acres): 10,185 acres

Life Zones: Lower Montane, Upper Montane.



Hawkin Gulch/Walker Ranch/Upper Eldorado Canyon ECA location within Boulder County.

Rationale and Background:

This ECA acts to conserve critical resources in the south-central part of the County. This area contains a multitude of significant plants, plant communities, and wildlife and provides an important mountain to prairie link.

Walker Ranch is at the center of the Hawkin Gulch/Walker Ranch/Upper Eldorado Canyon ECA and occurs within an area which initially acquired as Boulder County Open Space. It provides important winter range for elk. The western portion of this ECA, centered on Twin Sisters, is a critical migration corridor for elk and other large mammals; this site became an important habitat connector due to the creation of Gross Reservoir in the 1950s, which is an effective barrier to east-west movement of animals in this part of the county. The canyons and gulches between Flagstaff Drive, Boulder Canyon and Magnolia Road, including Hawkin, Keystone, and Calhoun Gulches, are wild and rugged areas. Upper Eldorado Canyon is another wild and rugged region. Ownership is mixed between Eldorado Canyon State Park and Boulder County Open Space. Running through this area is South Boulder Creek. It is one of the few roadless foothill creeks in the county, the others being Fourmile Canyon Creek and the North St. Vrain Creek. All of the others, including Boulder Creek, Fourmile Creek (the Fourmile Creek that heads to Sunset), Lefthand Creek, James Creek, and South St. Vrain Creek, are impacted by adjacent roads.

Naturalness: Several roadless areas in Hawkin Gulch, south half of Walker Ranch, South Draw, Johnson Gulch, Keystone Gulch and Twin Sisters Peak.

Quality and Uniqueness: Elk critical winter range and winter concentration area. Old-growth ponderosa pine/Douglas fir. Area is considered good habitat for Mountain Lion and Black Bear due to foothills habitat, size and high degree of naturalness. Important east/west and north/south large-mammal movement corridor.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>
Critical Wildlife Habitats:	4
Rare Plant Areas:	64
High Biodiversity Areas (B1-B3):	1
Natural Areas:	Yes
Natural Landmarks:	Yes

<u>USFS Designations</u>	<u>Acres</u>
Forested Flora and Fauna Habitats	2135
Intermix	73

Other Designations:

Eldorado Canyon State Park, State of Colorado

Year Established: 1995

Year Revised: 2013

Environmental Conservation Area #8

Common Name: Boulder Mountain Park and South Boulder

Location (General): West of McCaslin Blvd., south of US36, north of the Boulder County border, east of Eldorado Springs

Size (acres): 19,443 acres

Life Zones: Plains, Lower Montane.



Boulder Mountain Park and South Boulder ECA location within Boulder County.

Rationale and Background:

This ECA acts to conserve critical resources in the south-central part of the County. It contains a multitude of significant plants, plant communities, and wildlife and provides an important mountain to prairie link.

The canyons and peaks of the Mountain Parks are very diverse floristically, harboring a number of rare plants, including dwarf wild indigo, paper birch, Rocky Mountain sedge, broad-leafed twayblade, white adder's-mouth, pictureleaf wintergreen, and Weatherby's spike-moss. Nesting sites of golden eagles, prairie falcons, and peregrine falcons are present in the flatirons and canyons, as well as feeding grounds on the grasslands to the east. These grasslands periodically contain one of the largest prairie dog colonies in Boulder County. Ute ladies'tresses orchid and Preble's meadow jumping mouse are some of the significant biological elements present. Marshall Mesa, Eldorado Springs Canyon, and Tallgrass Prairie are designated Natural Areas. This ECA is now adjacent to the 4,000-acre Rocky Flats National Wildlife Refuge to the south. The city of Boulder has been working to protect lands in neighboring Jefferson County and represents an important linkage across the county border.

Naturalness: Roadless areas exist within Boulder Mountain Parks, and Open Space areas north and south of Eldorado Springs Road and east of S. Foothills Highway. Area is suitable for additional prairie restoration. Region may present opportunities for reintroduction of extirpated species. Potential for enhancing prairie dog community to replace winter raptor concentration areas located east of McCaslin Blvd.

Quality and Uniqueness: High density of nesting raptors (Golden Eagles, Prairie Falcons, Peregrine Falcon). High concentration of rare plants. Winter raptor concentration area. Good conditioned prairie plant communities. Important east-west and north-south large-mammal movement corridor and elk calving. Significant riparian community along South Boulder Creek and Coal Creek. Prairie Dog Colony.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>
Critical Wildlife Habitats:	14
Rare Plant Areas:	17
High Biodiversity Area (B1-B3)s:	6
Natural Areas:	No
Natural Landmarks:	Yes

USFS Designations **Acres**

None

Other Designations:

Eldorado Canyon State Park, State of Colorado

Year Established: 1995

Year Revised: 2013

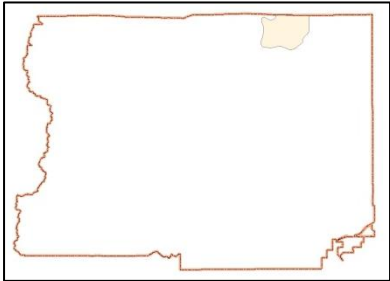
Environmental Conservation Area #9

Common Name: Rabbit Mountain

Location (General): West N 75th St., south of the Boulder County border, north of SH66, east of the town of Lyons

Size (acres): 7831 acres

Life Zones: Plains, Lower Montane.



Rabbit Mountain ECA location within Boulder County.

Rationale and Background:

This Environmental Conservation Area in the north-central portion of the county has been mostly acquired as Boulder County Open Space or conversation easement. The purpose of these acquisitions has been for the primary purpose of habitat conservation for the natural resources it contains. This area represents one of the highest biodiversity regions in the county and exists in a relatively unfragmented condition.

Rabbit Mountain is a unique eastward extension of the foothills. It contains several imperiled plant communities that include ponderosa pine, mountain mahogany and several prairie grasses. It has a long-established and successful Golden Eagle nesting territory and supports a highly diverse avian community. A population of the rare Bell’s twinpod is found there. The ECA is a concentration area for raptors during the winter due to the presence of prairie dogs on Dowe Flats and many other small mammal species on Rabbit Mountain. Several herds of mule deer use the property, some for winter range, as do white-tailed deer and occasionally elk.

Naturalness: Roadless areas exist on the existing Boulder County Open Space.

Quality and Uniqueness: Winter raptor concentration area. Significant Prairie dog colony. Golden eagle nesting territory. Fair quality ponderosa pine/shrub/grass community. Large Bell's Twinpod community. Good riparian habitat along Little Thompson River. Important east-west large-mammal movement corridor.

Restoration Potential: Actions should be taken to increase the amount of restored prairie habitat and to protect the significant shrub communities present in the area. All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

Boulder County Designations	Count
Critical Wildlife Habitats:	1
Rare Plant Areas:	7
High Biodiversity Areas (B1-B3):	2
Natural Areas:	Yes
Natural Landmarks:	Yes

USFS Designations _____ **Acres**
None

Other Designations:
None

Year Established: 1995
Year Revised: 2013

Environmental Conservation Area #10

Common Name: Table Mountain

Location (General): West of N 55th St., south of Nelson Rd., north of Oxford Rd., east of N 41st St.

Size (acres): 1701 acres

Life Zones: Plains

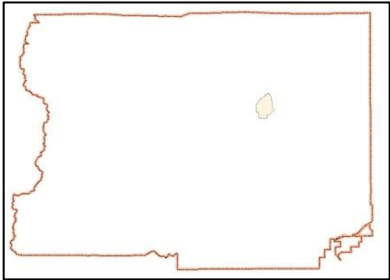


Table Mountain ECA location within Boulder County.

Rationale and Background:

This ECA is located in the central portion of the county and aids in conserving important prairie, wetlands, and habitat connectors linking the foothills to the plains.

The Table Mountain ECA is centered on a 1,700-acre tract of Federal land used as a radar and communications facility. The overall lack of use has helped retain a large block of native midgrass prairie. Boulder County Open Space and the City of Boulder have acquired adjacent and nearby lands and easements in order to expand this ECA and build a habitat connector to the foothills.

Naturalness: Area has some service roads where access is controlled. Is not currently being grazed.

Quality and Uniqueness: Large block of native midgrass prairie.

Restoration Potential: Actions should be taken to retain the existing prairie habitat, as well as enhance existing connectivity with the foothills ECAs. All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>	<u>Acres</u>
Critical Wildlife Habitats:	0	
Rare Plant Areas:	0	
High Biodiversity Areas (B1-B3):	1	
Natural Areas:	Yes	
Natural Landmarks:	Yes	

<u>USFS Designations</u>	<u>Acres</u>
None	

Other Designations:

None

Year Established: 1995

Year Revised: 2013

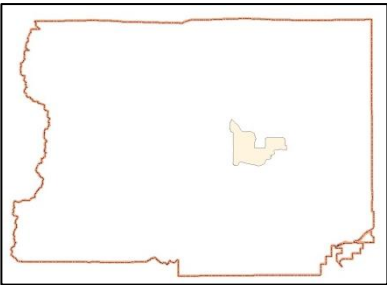
Environmental Conservation Area #11

Common Name: Boulder Valley Ranch and Beech Open Space

Location (General): West of N 63rd St., south of Niwot Rd., North of Lee Hill Dr., east of Lefthand Canyon Dr.

Size (acres): 7,227 acres

Life Zones: Plains, Lower Montane.



Boulder Valley Ranch and Beech Open Space ECA location within Boulder County.

Rationale and Background:

This ECA is located in the central portion of the county. The area acts to protect important prairie, wetlands, and habitat connectors linking the foothills to the plains.

The Boulder Valley Ranch and Beech Open Space ECA is centered on the two open space properties within its name. It also includes portions of Boulder Reservoir and numerous other open space properties on the north flank of the City of Boulder. This is a winter raptor concentration area, periodically containing a large prairie dog colony. A Northern Harrier nesting site is found within this area. There are significant wetlands and several locations for the rare Bell’s twinpod. Northern harriers have historically nested within this ECA, as have burrowing owls. The wetlands and deciduous forests along the west and north sides of Boulder Reservoir are home to a number of rare and vulnerable nesting birds. This ECA spans from the foothills to the plains and can be used as an animal movement corridor. It also contains Six-Mile Fold Natural Area.

Naturalness: Roadless areas exist on Open Space properties. Prairie and wetland restoration potential. Contains Six-Mile Fold Natural Area.

Quality and Uniqueness: Winter raptor concentration area. Significant Prairie dog colony. Significant wetlands. Northern Harrier nesting area. Historic and potential nesting for Burrowing Owl. Several sites for Bell's Twinpod. Important north/south and east/west large-mammal movement corridor.

Restoration Potential: Actions which enhance the function of habitats in this ECA should be a priority, including conservation and preservation of wetlands and other highly-productive habitats which lead to a functional prairie ecosystem. All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>	<u>Acres</u>
Critical Wildlife Habitats:	7	
Rare Plant Areas:	2	
High Biodiversity Areas (B1-B3):	1	
Natural Areas:	Yes	
Natural Landmarks:	Yes	

USFS Designations _____ **Acres**
None

Other Designations:
None

Year Established: 1995
Year Revised: 2013

Environmental Conservation Area #12

Common Name: White Rocks and Gunbarrel Hill

Location (General): West of SH287, south of Niwot Rd., north of Valmont Rd., east of N 75th St.

Size (acres): 6,988 acres

Life Zones: Plains.



White Rocks and Gunbarrel Hill ECA location within Boulder County.

Rationale and Background:

This ECA along with the East County ECA work together to protect critical resources in the east part of the County. Each contains a multitude of significant plants, plant communities, and wildlife. And together they total 15,000 acres, providing an important movement corridor along Boulder Creek and between Boulder and St. Vrain creeks.

The White Rocks/Gunbarrel Hill ECA spans west to east from N75th Street to Highway 287 and north to south between Highway 52 and Valmont Road. The White Rocks and the riparian lands along Boulder Creek form the heart of this area, as does Gunbarrel Hill, which was once a dryland farming area and is now being restored to prairie. The White Rocks contains a number of imperiled plants and animals, including rare ants and ferns. There is a high concentration of nesting raptors, good quality riparian habitat and significant wetlands. Portions of Boulder Creek are being restored by the City of Boulder as meanders are being put back into portions that were straightened. The area contains the White Rocks State Natural Area and the Heron Rookery State Natural Area.

Naturalness: Roadless areas exist on Open Space and private inholdings. Gunbarrel Hill has good potential for prairie restoration. Some of the land is currently in Federal Conservation Reserve Program. Contains White Rocks Natural Area and Heron Rookery Natural Area.

Quality and Uniqueness: The "White Rocks". High concentration of rare plants and animals. High concentration of nesting raptors. Good quality riparian habitat and significant wetlands. Some native prairie. Boulder Creek is important wildlife movement corridor. Prairie Dog colonies.

Restoration Potential: This area has received extensive prairie restoration and has the potential to be a large and functional native prairie habitat in the eastern section of the county. All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>
Critical Wildlife Habitats:	6
Rare Plant Areas:	1
High Biodiversity Areas (B1-B3):	1
Natural Areas:	Yes
Natural Landmarks:	No

USFS Designations **Acres**

None

Other Designations:

None

Year Established: 1995

Year Revised: 2013

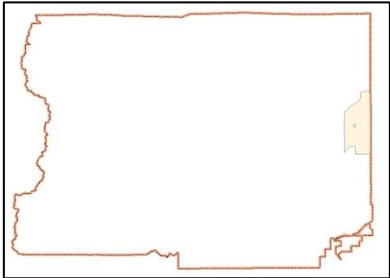
Environmental Conservation Area #13

Common Name: East County

Location (General): West of East County Line Rd., north of SH52, south of SH119, east of SR287

Size (acres): 7,819 acres

Life Zones: Plains.



East County ECA location within Boulder County.

Rationale and Background:

This ECA along with the White Rocks and Gunbarrel Hill ECA work together to protect critical resources in the east part of the County. Each contains a multitude of significant plants, plant communities, and wildlife. And together they total 15,000 acres, providing an important movement corridor along Boulder Creek and between Boulder and St. Vrain creeks.

The East County ECA spans north to south between St. Vrain and Boulder Creek, and west to east between Highway 287 and the county line. Much of this area is irrigated farmland, which has been acquired by the County as Open Space or conservation easement. The farmland provides a level of seclusion necessary for several nesting raptors. Some of the ecological features of this ECA include Boulder Creek, Panama Reservoir, Lefthand Creek, and St. Vrain Creek. Great blue herons have a small rookery in this area. Restoration has occurred along some of the riparian corridors and continues to be a conservation priority. The area provides a movement corridor for white-tailed deer between Boulder and St. Vrain Creeks.

Naturalness: The Open Space and Conservation easements acquired by Boulder County have guided land use within this ECA and retained many of the remaining natural features of this area.

Quality and Uniqueness: Reservoir and shoreline vegetation with Great Blue Heron nests. Bald Eagle nesting and habitat. Good quality riparian area and wetlands along St. Vrain Creek and Boulder Creek. Provides north/south wildlife movement corridor in the eastern side of Boulder County.

Restoration Potential: Restoration and conservation activity should be considered which promotes prairie and riparian habitats, or which increases connectivity with the adjacent ECA and riparian corridors. All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>	<u>Acres</u>
Critical Wildlife Habitats:	3	
Rare Plant Areas:	0	
High Biodiversity Areas (B1-B3):	0	
Natural Areas:	No	
Natural Landmarks:	No	

USFS Designations **Acres**

None

Other Designations:

None

Year Established: 1995

Year Revised: 2013

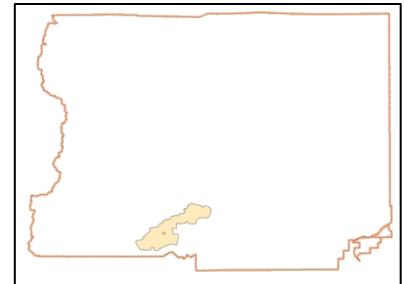
Environmental Conservation Area #14

Common Name: Magnolia

Location (General): East of Nederland, bounded on the north by Boulder Canyon, west of Winiger Ridge and Gross Res.

Size (acres): 7,126 acres

Life Zones: Lower Montane, Upper Montane.



Winiger Ridge ECA location within Boulder County.

Rationale and Background:

The Magnolia ECA is an area which has received significant conservation and restoration by Boulder County Parks and Open Space, the USFS, and others. It is relatively unfragmented by roads and development. Additionally, this area has long been known as an important movement corridor for elk.

This area is also included in the planning area for the Magnolia Environmental Preservation Plan, which seeks to protect the “unique rural qualities, unfragmented habitats, wildlife, scenic and recreational resources” of the Magnolia area.

Naturalness: Relatively undeveloped and unfragmented area east of Barker Res. Much of the area is public land (Boulder County Parks and Open Space, USFS, State of Colorado).

Quality and Uniqueness: High quality plant sites and plant diversity. Old-growth Ponderosa pine/Douglas fir. Important east/west large-mammal movement corridor.

Restoration Potential: All efforts to limit or reverse habitat fragmentation should be pursued.

Key Facts:

<u>Boulder County Designations</u>	<u>Count</u>
Critical Wildlife Habitats:	2
Rare Plant Areas:	26
High Biodiversity Areas (B1-B3):	0
Natural Areas:	No
Natural Landmarks:	Yes

<u>USFS Designations</u>	<u>Acres</u>
Forested Flora and Fauna Habitats	5028
Intermix	1979

Other Designations:

Magnolia Environmental Preservation Plan

Year Established: NEW

Year Revised: 2013