

Level 4 Potential Conservation Area (PCA) Report

Name Boulder Foothills

Site Code S.USCOHP*1707

IDENTIFIERS

Site ID 844 Site Class PCA
 Site Alias Green Mountain Boulder
 Site Alias South Peak
 Site Alias South Boulder Creek below Gross Reservoir

Network of Conservation Areas (NCA)

<u>NCA Site ID</u>	<u>NCA Site Code</u>	<u>NCA Site Name</u>
-		No Data

LOCATORS

Nation United States Latitude 395819N
 State Colorado Longitude 1051843W

<u>Quad Code</u>	<u>Quad Name</u>
39105-H3	Eldorado Springs
40105-A3	Boulder

County

<u>Watershed Code</u>	<u>Watershed Name</u>
10190005	St. Vrain

SITE DESCRIPTION

Minimum Elevation	5,570.00 Feet	1,698.00 Meters
Maximum Elevation	8,400.00 Feet	2,560.32 Meters

Site Description

The Boulder Foothills site is unique within the context of the Front Range. It encompasses the mountains immediately southwest of the city of Boulder. It encompasses steep, rugged, granitic slopes of Flagstaff Mountain, Green Mountain, Bear Peak, and South Boulder Peak. The upthrust Flatirons form a steep eastern boundary and are comprised of arkosic sandstone and conglomerate bedrock in stark contrast to the adjacent peaks. Soils are mainly stony sandy loam, gravelly sandy loam, colluvial outwash, and rock outcrop, with red sandstone substrates at lower end and crumbly granitic soils at upper end. Canyons within this site are deep, narrow, and characterized by bedrock and boulder-strewn streambeds, with dense, shady, riparian growth on canyon bottoms. These mountains have distinct vegetation patterns due to the steep terrain and contrasting aspects. The slopes are primarily forested with ponderosa pine (*Pinus ponderosa*) at low elevations and on south-facing slopes and with mixed conifer forest codominated by Douglas-fir (*Pseudotsuga menziesii*) on north-facing slopes. Exposed, craggy rock outcrops can have sporadic groves of limber pine (*Pinus flexilis*). The ponderosa pine forest tends to have a more open understory with sparse shrubs and grasses like spike fescue (*Leucopoa kingii*) and sun-loving sedge (*Carex heliophila*). Mixed conifer forests tend to have a more consistent shrub layer, creeping barberry (*Mahonia repens*), and many small herbs like white-veined pyrola (*Pyrola picta*), pipsissewa (*Chimaphila umbellata*). Cliffs, rock outcrops, and talus slopes are frequent with sparse vegetation including stonecrop (*Sedum lanceolatum*) and several ferns. Small grassland openings are infrequent. Grasslands at lower elevations on south-facing slopes consist of big bluestem (*Andropogon gerardii*), blue grama (*Bouteloua gracilis*), junegrass (*Koeleria macrantha*), and shrubby patches of Fendler's ceanothus (*Ceanothus fendleri*). At higher elevations, mountain muhly (*Muhlenbergia montana*) and Parry's oatgrass (*Danthonia parryi*) are common. Vegetation in canyon riparian zone includes cottonwood (*Populus deltoides*, *Populus angustifolia*) and Douglas-fir in the canopy with some aspen (*Populus tremuloides*). Moist, spring-fed drainages also have well-developed copses of hazelnut (*Corylus cornuta*), birch (*Betula occidentalis*) and the state rare *Betula papyrifera*). Other areas have bluestem willow (*Salix irrorata*), skunkbush (*Rhus trilobata*), American plum (*Prunus americana*), chokecherry (*Prunus virginiana*), and hawthorn (including taxonomically indistinct species of *Crateagus erythropoda* and *C. chrysocarpa*). Vines are common and include woodbine (*Parthenocissus vitacea*), grape (*Vitis riparia*), virgin's bower (*Clematis ligusticifolia*), hops (*Humulus lupulus*), and poison ivy (*Toxicodendron rydbergii*). The herbaceous understory tends to be quite lush with mosses, ferns, and other shade-tolerant forbs. A unique feature of these moist drainages is a long list of plant species with affinity to eastern North America, species like hazelnut, black snakeroot (*Sanicula marilandica*), wild sarsaparilla (*Aralia nudicaulis*), enchanter's nightshade (*Circaea alpina*), dwarf red blackberry (*Rubus pubescens*), rattlesnake fern (*Botrychium virginianum*), and others. Grassland openings

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support globally rare butterflies like mottled duskywing (*Erynnis martialis*), Arogos skipper (*Atrytone arogos*), Moss' elfin (*Callophrys mossii schryveri*), and hops azure (*Celastrina humulus*). The site supports uncommon plants like narrowleaf milkweed (*Asclepias stenophylla*), wavy-leaf stickleaf (*Nuttallia sinuata*), Front Range milkvetch (*Astragalus sparsiflorus*), wood lily (*Lilium philadelphicum*), Wright's cliffbrake (*Pellaea wrightiana*), Rocky Mountain polypody (*Polypodium saximontanum*), wintergreen (*Pyrola picta*), cat briar (*Smilax lasioneuron*), and Rocky Mountain spike-moss (*Selaginella weatherbiana*). Cliffs and forests support fringed myotis (*Myotis thysanoides*), northern goshawk (*Accipiter gentilis*), peregrine falcon (*Falco peregrinus*), prairie falcon (*Falco mexicanus*), and ovenbird (*Seiurus aurocapillus*).

Key Environmental Factors

Lower montane-foothills ecotone; moist climate parameters; steep slopes of Fountain Formation and Boulder Creek granodiorite

Climate Description

Annual precipitation is 18-24 inches. Mean annual air temperature is 43 degrees F., and the frost-free season is about 80-120 days. The steepness of the mountain front above Boulder creates an orographic effect where the mountains above the Flatirons receive greater precipitation and moisture than the surrounding area (Hogan 1993). The Denver Basin landform funnels upslope storms toward the hills. Locally humid conditions are also sustained by a cloud veil that infrequently forms over the peaks (Weber 1965).

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map P - Partial

Mapped Date 10/30/2008

Designer Neid, S.L.

Boundary Justification

Includes numerous elements and a buffer including Green Mountain and slopes, the Flatirons, the South Boulder Peak area, Bear Canyon, a portion of the South Boulder Creek watershed below Gross Reservoir, west to include the Keystone Gulch watershed, and east to the beginning foothills bordering the city of Boulder. Most ecological processes are protected within the boundary, but fire or tree thinning may be needed to maintain the long-term integrity of the site.

Primary Area 12,272.08 Acres

4,966.35 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

The site contains good (B-ranked) occurrences of a globally imperiled (G2G3/S2) invertebrate species, hops feeding azure (*Celastrina humulus*). Multiple invertebrates, plants and plant communities are also within the site.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

No Data

Exotics Comments

Exotics are limited to mostly *Bromopsis inermis*, *Bromus tectorum*, *Alyssum*, *Cirsium arvense*, and *Verbascum thapsus*. Observed some *Centaurea* (knapweed), however, unless the topsoil is disturbed, the knapweed may fail to propagate.

Offsite

Subdivisions and other housing developments are occurring on all boundaries of the site, which may affect fire control regime because of danger to personal property and life. At least three major roads cut through steep

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slopes. Other smaller dirt roads criss-cross site, and may encourage spread of exotics. Adjacent areas to northwest, west, are managed by State Parks and the National Forest.

Information Needs

Monitor burn sites of *Andropogon gerardii* for recolonization of *Atrytone arogos*, and for possible location of associated species *Hesperia ottoe* and *Polites origenes*.

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
19228	<i>Danthonia parryi</i> Herbaceous Vegetation	Montane Grasslands	G3	S3	No
22544	<i>Carex saximontana</i>	Rocky Mountain sedge	G5	S1	No
24686	<i>Betula occidentalis</i> / <i>Maianthemum stellatum</i> Shrubland	Foothills Riparian Shrubland	G4?	S2	No
21725	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4	S2B	No
17861	<i>Listera convallarioides</i>	broad-leaved twayblade	G5	S2	No
21654	<i>Plecotus townsendii pallescens</i>	Townsend's Big-eared Bat Subsp	G4T4	S2	No
17255	<i>Betula papyrifera</i>	paper birch	G5	S1	No
20146	<i>Celastrina humulus</i>	Hops Feeding Azure	G2G3	S2	Yes
22636	<i>Malaxis monophyllos</i> ssp. <i>brachypoda</i>	white adder's-mouth	G4Q	S1	No
40423	<i>Crataegus chrysoarpa</i>	yellow hawthorn	G5	S1	No
17546	<i>Callophrys mossii schryveri</i>	Moss's Elfin	G4T3	S2S3	No
24962	<i>Pseudotsuga menziesii</i> / <i>Betula occidentalis</i> Woodland	Montane Riparian Forest	G3?	S3	No
19678	<i>Erynnis martialis</i>	Mottled Dusky Wing	G3	S2S3	No
20146	<i>Celastrina humulus</i>	Hops Feeding Azure	G2G3	S2	Yes
22544	<i>Carex saximontana</i>	Rocky Mountain sedge	G5	S1	No
21289	<i>Zapus hudsonius preblei</i>	Meadow Jumping Mouse Subsp	G5T2	S1	No
21289	<i>Zapus hudsonius preblei</i>	Meadow Jumping Mouse Subsp	G5T2	S1	No
40647	<i>Corylus cornuta</i> Shrubland [Provisional]	Lower Montane Forests	G3	S1	No
21725	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4	S2B	No
19678	<i>Erynnis martialis</i>	Mottled Dusky Wing	G3	S2S3	No
21434	<i>Polypodium saximontanum</i>		G3?	S3?	No
18435	<i>Botrypus virginianus</i> ssp. <i>europaeus</i>	rattlesnake fern	G5	S1	No
22501	<i>Carex sprengei</i>	Sprengel's sedge	G5?	S2S3	No
19249	<i>Carex torreyi</i>	Torrey sedge	G4	S1	No
17196	<i>Myotis thysanodes</i>	Fringed Myotis	G4G5	S3	No
24827	<i>Populus angustifolia</i> / <i>Salix irrorata</i> Woodland	Foothills Riparian Woodland	G2	S2	No
24827	<i>Populus angustifolia</i> / <i>Salix irrorata</i> Woodland	Foothills Riparian Woodland	G2	S2	No

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
195190	Neid, S., J. Lemly, K. Decker and D. Culver. 2009. Final Report: Survey of Critical Biological Resources in Boulder County 2007-2008. Colorado Natural Heritage Program, Fort Collins, CO.
161922	Pineda, Phyllis M. 1996. Field Survey (Butterflies) to the City of Boulder Open Space and Mountain Parks, Larimer County and Cheesman Reservoir. Field Season 1996.

ADDITIONAL TOPICS

Additional Topics

Original site design by Pineda, P.M. 1994-09-12.

VERSION

Version Date	02/05/2009
Version Author	Neid, S.L.

Disclaimer

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