

Level 4 Potential Conservation Area (PCA) Report

Name Buffalo Meadows

Site Code S.USCOHP*9591

IDENTIFIERS

Site ID 1290 Site Class PCA
 Site Alias Fourmile Creek

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 390001N
 State Colorado Longitude 1060925W

<u>Quad Code</u>	<u>Quad Name</u>
38106-H2	Harvard Lakes
39106-A2	South Peak

County

Chaffee (CO)
 Park (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
11020001	Arkansas Headwaters
10190001	South Platte Headwaters

SITE DESCRIPTION

Minimum Elevation	11,106.00	Feet	3,385.11	Meters
Maximum Elevation	11,373.00	Feet	3,466.49	Meters

Site Description

The site occurs in the Buffalo Peaks Wilderness in the Mosquito Mountains. This high elevation wetland has developed in a broad, relatively flat, gently sloping swale in a large depression below the top of a wide, north-south trending ridgeline. These wetlands are the source of numerous streams including Buffalo, Fourmile, and Tumble creeks that flow down steep slopes into the Arkansas Valley below. Mountains here are formed of granitic rocks of 1,400 to 1,700 million years ago with a substrate that is metamorphic or igneous units with a dominantly silicic composition of all ages (Tweto 1979). The granites are highly fractured and in combination with the flat topography on the ridgeline have enabled increased weathering and breakdown of granite into clay which has allowed the development of a wetland on this ridge top swale. Shallow, open water ponds are scattered throughout. Soil moisture is variable and ranges from well-drained to saturated and inundated. Soil characteristics vary from fine-textured mineral soils with high organic matter to peat formation to a depth greater than 0.5 meters. Riparian habitat is characterized by a mosaic of shrublands, herbaceous meadows and open water ponds. Planeleaf willow (*Salix planifolia*) dominates the shrublands and forms a low, dense overstory. A lush, dense herbaceous layer is characterized by a mix of graminoids and forbs that is dominated by tufted hairgrass (*Deschampsia caespitosa*). Other shrub species present included shrubby cinquefoil (*Dasiphora floribunda*). The dense herbaceous understory is species-rich and has several sedge and grass species including water sedge (*Carex aquatilis*), beaked sedge (*Carex utriculata*), ebony sedge (*Carex ebenea*), Bellardi bog sedge (*Kobresia mysuroides*), and alpine timothy (*Phleum alpinum*). Forb cover is also diverse but has a lower cover than the graminoids. Associated forb species include American bistort (*Polygonum bistortoides*), alpine bistort (*Polygonum viviparum*), littleflower penstemon (*Penstemon procerus*), marsh marigold (*Caltha leptosepala*), elephant's head (*Pedicularis groenlandica*), alpine lousewort (*Pedicularis sudetica*), and monkshood (*Aconitum columbianum*). Lincoln's Sparrow (*Melospiza lincolnii*), Hermit Thrush (*Catharus guttatus*) and Clark's Nutcracker (*Nucifraga columbiana*) are common bird species. Surrounding uplands are characterized by a mosaic of spruce - fir forests (*Picea engelmannii* - *Abies lasiocarpa*), aspen - lodgepole forests (*Populus tremuloides* - *Pinus contorta*) and open meadows. Lower elevation upland habitat on west-facing slopes is dominated by a mosaic of ponderosa pine (*Pinus ponderosa*), lodgepole pine, and aspen (*Populus tremuloides*) with limber pine (*Pinus flexilis*) growing on outcrops and exposed ridges.

Key Environmental Factors

No Data

Climate Description

Climate in the Mosquito Mountains is warmer and drier compared to the climate in the Sawatch Mountains on

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the west side of the Arkansas River valley, but is wetter and cooler than that of the valley floor. The Mosquitoes are in the rain shadow of the Sawatch Range but may intercept some Pacific moisture as storms track east. They also intercept some moisture from the Gulf of Mexico that is flowing from the southeast to the west and thunderstorms that come out of the west in the summer (Siemer 1977).

Land Use History

The surrounding upland slopes were logged but are recovering.

Cultural Features

No Data

SITE DESIGN

Site Map P - Partial

Mapped Date 04/07/2009

Designer Malone, D.G.

Boundary Justification

The boundary was developed to enable the ecological and hydrological processes and the environmental gradients that support the occurrences, as well as to maintain sustainable toad habitat and provide a buffer against disturbance. Those processes and environmental characteristics especially important to site sustainability include surface and shallow groundwater flow from surrounding slopes into the ridge top swale to enable groundwater and wetland recharge and appropriate hydroperiod and soil moisture. The boundary encompasses a larger area than was surveyed because the entire site has similar ecological characteristics and a high likelihood of supporting the community and toad occurrences.

Primary Area 2,394.33 Acres

968.96 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

The site supports an excellent (A-ranked) occurrence of a globally vulnerable (G2G3) *Salix planifolia* / *Deschampsia caespitosa* subalpine riparian willow carr and a fair (C-ranked) occurrence of a globally critically imperiled (G4T1Q/S1) amphibian, boreal toad (*Bufo boreas*). Toad populations have declined greatly and large breeding populations are now confined to a few areas in Colorado. The causes are not firmly established but die-offs have been associated with chytrid fungal infection and may also be related, at least in part, to habitat degradation, predation by and competition with native and non-native species and fishery management activities (NatureServe 2009).

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

No Data

Offsite

Hydrological processes originating outside of the planning boundary, including water quality, quantity, timing and flow must be managed to maintain site viability.

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
20351	<i>Bufo boreas</i> pop. 1	Boreal Toad (Southern Rocky Mountain Population)	G4T1Q	S1	Yes
24618	<i>Salix planifolia</i> / <i>Deschampsia caespitosa</i> Shrubland	Subalpine Riparian Willow Carr	G2G3	S2S3	Yes

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REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
198290	Culver, D.R., D. Malone, S.L. Neid, and J. Handwerk. 2009. Final Report: Survey of Critical Biological Resources in Chaffee County. Colorado Natural Heritage Program, Fort Collins, CO.
198314	NatureServe Explorer (Web Page). Accessed 2010. An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer .
198318	Siemer, E. 1977. Colorado Climate. Colorado Experiment Station, Colorado State University.
192747	Tweto, O. 1979. Geologic Map of Colorado, 1:500,000. United States Geological Survey, Department of Interior, and Geologic Survey of Colorado, Denver, CO.

ADDITIONAL TOPICS

Additional Topics

Original site design by Fleming, C.C. 1997-08-26.

VERSION

Version Date 04/07/2009
Version Author Malone, D.G.

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