

Level 4 Potential Conservation Area (PCA) Report

Name Upper Clear Creek Canyon

Site Code S.USCOHP*27777

IDENTIFIERS

Site ID 2635 Site Class PCA
 Site Alias None

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 385759N
 State Colorado Longitude 1062732W

Quad Code Quad Name

38106-H4 Winfield

County

Chaffee (CO)

Watershed Code Watershed Name

11020001 Arkansas Headwaters

SITE DESCRIPTION

Minimum Elevation	10,081.00	Feet	3,072.69	Meters
Maximum Elevation	10,860.00	Feet	3,310.13	Meters

Site Description

This high elevation subalpine wetland site is located in a wide, glacially sculpted valley in the upper reaches of the Clear Creek watershed. Clear Creek drains the eastern slope of the Sawatch Mountains and has its confluence with the Arkansas River approximately 2.5 miles below the town of Granite. Here the valley trends north-south and is surrounded by high, steep relief peaks, ridges and glacial cirques. The Continental Divide forms a semi-circle of high mountain ridges to the south that reaches 13,950 ft at The Three Apostles peaks. Huron Peak (14,003 ft) is on the eastern side of the valley, Virginia and Winfield Peaks (13,000 ft) are to the west and La Plata Peak (14,361 ft) lies to the north. Valley elevation at the upper reaches of the site ranges from 10,360 ft to 10,600 ft. Geology of the surrounding peaks typically consists of Laramide intrusive rocks (40-72 M.Y.) of mainly intermediate to felsic composition. The Clear Creek valley has been extensively sculpted by glaciation, and the valley floor is carpeted by glacial drift from the Pinedale and Bull Lake Glaciation that occurred during the Pleistocene (Tweto 1979). Clear Creek headwaters begin as several alpine lakes that lie just below the Continental Divide and it becomes a third order stream near the upstream end of this site. Snowmelt is the primary source for water in Clear Creek and is the source for the dozens of fens, tarns and lakes that are scattered on terraces and slopes at high elevations throughout the watershed. Snowmelt also creates copious amounts of surface and shallow groundwater that discharges into the valley below. Toeslopes and terraces at the base of steep valley walls are saturated with shallow groundwater and surface discharge that eventually flows into the stream. Beaver (*Castor canadensis*) activity is high and makes an essential contribution to hydrologic function by altering stream dynamics and flows. Valley sideslopes, toeslopes, terraces, and bottomlands are dominated by moisture-loving plant communities. Bottomland communities are characterized by a patchwork of willow and non-willow shrublands, interspersed with wet herbaceous meadows and open water ponds. Habitat in the valley bottom is maintained by beaver activity and is characterized by wide willow carrs interspersed with wet meadows and large open water ponds. Planeleaf willow (*Salix planifolia*) is the dominant shrub throughout the beaver controlled willow carrs. Other common shrubs include bog birch (*Betula nana*), Geyer willow (*Salix geyeriana*) and shrubby cinquefoil (*Dasiphora floribunda*). The herbaceous layer is dominated by graminoids such as water sedge (*Carex aquatilis*), bluejoint reedgrass (*Calamagrostis canadensis*), tufted hairgrass (*Deschampsia caespitosa*) and alpine timothy (*Poa alpina*) with a few forbs including King's crown (*Rhodiola integrifolia*), elephant head (*Pedicularis groenlandica*), and tall fringed bluebells (*Mertensia ciliata*). Plant communities on moist sideslopes, toeslopes and terraces are characterized by a patchy distribution of dense, low-growing shrubs, wet meadows and open water ponds with a few scattered tree islands. Tree islands are dominated by Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*). Bog birch dominates the shrub cover. Other commonly associated shrubs include planeleaf willow, wolf willow (*Salix wolfii*) and barren ground willow (*Salix brachycarpa*). Herbaceous cover is a diverse mix of forbs, graminoids and mosses. Although herbaceous cover is somewhat sparse under the shrub canopy, in openings herbaceous cover is dense. Soils are typically saturated and hummocky with deep peat formation. Hummocks are covered with mosses and forbs which are

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growing on the hummock tops while graminoids typically grow in the moister hummock depressions. Common forbs include alpine meadow rue (*Thalictrum alpinum*), elephant head, heartleaf bittercress (*Cardamine cordifolia*), marsh marigold (*Caltha leptosepala*), brook saxifrage (*Saxifraga odontoloma*), broad-lipped twayblade (*Listera convallarioides*), northern bog-orchid (*Limnorchis hyperborea*), viviparous bistort (*Bistorta vivipara*), saffron senecio (*Senecio crocatus*) and tall fringed bluebells. Common graminoids include water sedge, beaked sedge (*Carex utriculata*), super turf (*Kobresia myosuroides*), and mountain sedge (*Carex scopulorum*). Upland habitat is a complex mosaic of forests, shrublands and meadows interspersed with scree and talus fields and cut by steep avalanche chutes that are densely covered by willow and bog birch. West-facing slopes are dominated by spruce - fir forests that interfinger with the valley wetlands. East-facing slopes are characterized by a mosaic of aspen (*Populus tremuloides*) woodlands, spruce - fir forest, and, on alluvial fans, mesic and dry meadows and shrublands. Commonly observed birds include White-crowned Sparrow (*Zonotrichia leucophrys*), Swainson's Thrush (*Catharus ustulatus*), Hermit Thrush (*Catharus guttatus*), Wilson's Warbler (*Wilsonia pusilla*), Mountain Chickadee (*Poecile gambeli*), Lincoln's sparrow (*Melospiza lincolni*), Ruby-crowned Kinglet (*Regulus calendula*) and Golden-crowned Kinglet (*Regulus satrapa*).

Key Environmental Factors

Hydrology and soil characteristics are the key driving factors to exert a major influence on biota at the site. Abundant shallow groundwater and surface discharge maintain soil moisture that has enabled peat development and the development of the characteristic moisture-loving plant communities.

Climate Description

Climate records for Independence Pass, which is approximately 12 miles to the northwest and on the west side of the Continental Divide, indicate a mean annual precipitation of 29.82 inches; the wettest months are January and March with a mean precipitation of 3.51 inches and 3.97 inches per month respectively; the driest months are June and September with a mean precipitation of 1.11 inches and 1.70 inches per month respectively; the warmest month is July with a mean temperature of 51.9 deg F and the coldest month is January at 12.7 deg F. Average annual snowfall is 335.9 inches with January and March having the greatest monthly snowfall with a mean of 50.1 inches and 58.8 inches respectively (Western Regional Climate Center 2009).

Land Use History

Hard rock mining was extensive throughout the site.

Cultural Features

The historic mining town of Winfield is located at the downstream end of the site.

SITE DESIGN

Site Map Y - Yes

Mapped Date 04/01/2009

Designer Malone, D.G.

Boundary Justification

The boundary encompasses the occurrences and the ecological processes essential to sustaining them. It also provides a buffer against direct disturbance. The primary ecological process essential to long-term community viability is hydrology, specifically shallow groundwater or surface flow with annual episodic flooding (Rondeau 2001 and NatureServe 2009). Snowmelt runoff from the surrounding watershed and/or beaver activity maintains this hydrologic system (Rondeau 2001 and NatureServe 2009) and are important processes to include in the boundary.

Primary Area 2,364.96 Acres

957.07 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

The site supports two excellent (A-ranked) occurrences of the globally vulnerable (G3G4/S3) *Betula nana* / mesic forbs - mesic graminoids subalpine riparian shrubland.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

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Natural Hazard Comments

No Data

Exotics Comments

No Data

Offsite

No Data

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element</u>			<u>Global</u>	<u>State</u>	<u>Driving</u>
<u>State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Rank</u>	<u>Rank</u>	<u>Site Rank</u>
24497	<i>Betula nana</i> / Mesic Forbs - Mesic Graminoids Shrubland	Subalpine Riparian Shrubland	G3G4	S3	Yes
24497	<i>Betula nana</i> / Mesic Forbs - Mesic Graminoids Shrubland	Subalpine Riparian Shrubland	G3G4	S3	Yes

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 .
190863	Rondeau, R. 2001. Ecological system viability specifications for Southern Rocky Mountain ecoregion. First Edition. Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO. 181 pp.
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.
198320	Western Regional Climate Center. 2009. Record Climate Summaries. Accessed in 2009. http://www.wrcc.dri.edu/

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 04/01/2009
Version Author Malone, D.G.

Disclaimer

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