

Level 4 Potential Conservation Area (PCA) Report

Name Grizzly Gulch

Site Code S.USCOHP*27774

IDENTIFIERS

Site ID 2632 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 384010N
 State Colorado Longitude 1061952W

Quad Code Quad Name
 38106-F3 Saint Elmo

County
 Chaffee (CO)

Watershed Code Watershed Name
 11020001 Arkansas Headwaters

SITE DESCRIPTION

Minimum Elevation	10,180.00	Feet	3,102.86	Meters
Maximum Elevation	11,880.00	Feet	3,621.02	Meters

Site Description

The site is located in the Sawatch Mountain Range on the east side of the Continental Divide and approximately ¼ mile south of the ghost town of St. Elmo. Grizzly Gulch is a narrow, steep-walled valley that trends north-south between two high-elevation ridgelines. Elevation of the western ridgeline at the upper end above the site is approximately 12,040 ft and goes down to 10,400 ft at the lower, north end of the site; elevation of the ridgeline on the east side of the valley goes from approximately 13,400 ft down to 10,260 ft; elevation of the stream reach and corresponding riparian site begins at 11,880 ft and goes down to 10,180 ft at the north end of the reach. In the upper 2.3 miles of the site, both upstream and immediately below the lake, the stream meanders through a wide, low gradient valley. Within approximately 0.8 miles below the lake the valley narrows and the stream gradient increases. In the lower ½ mile, valley characteristics transition to a steep walled, steep gradient canyon and stream. Geology is formed of middle tertiary intrusive rocks aged 20-40 million years. Substrate is metamorphic of igneous units with a dominantly silicic composition of all ages. A steep-walled glacial cirque and arêtes form the headwalls of Grizzly Gulch. At the base of the headwalls wide, low gradient willow carrs, wet meadows and ponds are sustained by abundant shallow-groundwater slope discharge from snowmelt from surrounding peaks. Discharge from these slopes coalesces into a stream that flows into Grizzly Lake. At the down valley end of the lake the stream flows out of the lake and continues through Grizzly Gulch to its confluence with Chalk Creek. Hydrology of the basin is bedrock controlled. The system is recharged through direct precipitation and snowmelt. Water that flows and discharges through the unconsolidated talus slopes is stored in and sustains the wetlands that feed the stream. There is some contribution from side channels, which are also formed from shallow groundwater discharge, thus the stream that drains Grizzly Gulch is likely a gaining stream. Headwater habitat at Grizzly Gulch is characterized by a mosaic of willow carrs, wet herbaceous meadows and open water ponds. In this headwater, high-elevation habitat willow carrs are dominated by planeleaf willow (*Salix planifolia*) in a variety of associations including with water sedge (*Carex aquatilis*), bluejoint reedgrass (*Calamagrostis canadensis*) and marsh marigold (*Caltha leptosepala*). Other shrub species present include bareground willow (*Salix brachycarpa*), bog birch (*Betula nana*), and shrubby cinquefoil (*Dasiphora floribunda*). Herbaceous meadows here are characterized by a rich mosaic of lush forb and graminoid communities. Dominant forbs include marsh marigold, king's crown (*Sedum integrifolium*), elephant head (*Pedicularis groenlandica*), star gentian (*Swertia perennis*), brook saxifrage (*Saxifraga odontoloma*), snowball saxifrage (*Saxifraga rhomboidea*), heartleaf bittercress (*Cardamine cordifolia*) and viviparous bistort (*Bistorta vivipara*). Common graminoids include water sedge, tufted hairgrass (*Deschampsia caespitosa*), slender cotton grass (*Eriophorum gracile*), mountain sedge (*Carex scopulorum*), Drummonds rush (*Juncus drummondii*), Tracy's rush (*Juncus tracyi*) and alpine timothy (*Poa alpina*). Below Grizzly Lake, riparian plant communities vary with stream gradient in a linear mosaic along the stream corridor. Wider, flatter reaches are characterized by willow carrs whereas riparian habitat along narrower, steeper stream riparian areas are forested. Characteristic shrub species in the willow carrs include planeleaf willow, bareground willow, Drummond's willow (*Salix drummondiana*) and

Level 4 Potential Conservation Area (PCA) Report

Name Grizzly Gulch

Site Code S.USCOHP*27774

shrubby cinquefoil. Forested riparian habitat is characterized by a mix of conifers and deciduous trees with an understory of shrubs dominated by willow species and a few non-willow species. Riparian forests in the subalpine and upper montane are characterized by a tree canopy dominated by Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*) and patches of aspen (*Populus tremuloides*) with a mixed willow and non-willow shrub layer that includes Drummond's, planeleaf, and bareground willow. As elevation decreases the tree canopy quickly transitions to a tree canopy dominated by aspen with a shrub layer that is dominated by Drummond's willow. Other common shrub species include thinleaf alder (*Alnus incana*), twinberry honeysuckle (*Lonicera involucrata*), Wood's rose (*Rosa woodsii*) and gooseberry (*Ribes inerme*). Herbaceous cover here is characterized by a diversity of forbs including tall fringed bluebells (*Mertensia ciliata*), cow parsnip (*Heracleum sphondylium*), meadow rue (*Thalictrum fendleri*), star solomonplume (*Smilacina stellata*), brook saxifrage (*Saxifraga odontoloma*) and cowbane (*Oxypolis fendleri*). Uplands in the alpine are dominated by a mosaic of krummholz patches, willow and bog birch shrublands in avalanche chutes, and turf meadows, fellfields and scree and talus slopes. Subalpine upland habitat is dominated by spruce - fir forests that transition to a patchy mosaic of aspen and spruce - fir stands in the upper montane and montane life zones. Characteristic bird species that were commonly observed in the alpine included White-crowned Sparrow (*Zonotrichia leucophrys*) and Wilson's Warbler (*Wilsonia pusilla*); birds commonly observed in the subalpine and upper montane included Pine Grosbeak (*Pinicola enucleator*), Townsend's Solitaire (*Myadestes townsendi*), Golden-crowned Kinglet (*Regulus satrapa*), Dark-eyed Junco (*Junco hyemalis*) and Clark's Nutcracker (*Nucifraga columbiana*).

Key Environmental Factors

No Data

Climate Description

Climate records in the town of Pitkin, located approximately 11.5 miles to the southwest of Grizzly Gulch but on the west side of the Continental Divide, indicate that in general winters are cold with abundant snowfall (114.2 inches annual average) and summers are mild and wet. Mean annual precipitation is 16.92 inches; the wettest months are July and August with an average precipitation of 2.17 and 2.05 inches respectively while the driest are November with 1.01 and June with 1.03 inches; the coldest month is January with an average temperature of 12 deg F and the warmest is July at 55 deg F (Western Regional Climate Center 2009).

Land Use History

Hardrock mining was prolific in surrounding valleys and evidence of prospecting is abundant in Grizzly Gulch.

Cultural Features

The nearby Ghost Town of St. Elmo originated in 1879 and is widely considered Colorado's best preserved ghost town.

SITE DESIGN

Site Map Y - Yes

Mapped Date 04/01/2009

Designer Malone, D.G.

Boundary Justification

The boundary was developed to encompass the element occurrence as well as the ecological processes and physical characteristics that sustain the element. Specifically the primary ecological process necessary to maintain the element occurrence is hydrology, especially surface flow but also groundwater (Rondeau 2001). Thus sufficient stream flows with a natural flooding regime including out-of-bank flows are important to maintaining this ecological system. The hydrologic system is bedrock controlled and is recharged through direct precipitation and snowmelt. Wetlands at the headwaters both store precipitation and discharge water into the stream to sustain flows. Although there is some contribution to flow from side channels the stream that drains Grizzly Gulch is heavily dependent on wetland function and streamflow at the headwaters and upstream reaches for sustainability.

Primary Area 521.24 Acres

210.94 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 (G3G4/SU) *Populus tremuloides* / *Salix drummondiana* riparian forest.

Other Values Rank No Data

Level 4 Potential Conservation Area (PCA) Report

Name Grizzly Gulch

Site Code S.USCOHP*27774

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

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>
24503	<i>Populus tremuloides</i> / <i>Salix drummondiana</i> Forest		G3G4	SU	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.
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.
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

Level 4 Potential Conservation Area (PCA) Report

Name Grizzly Gulch

Site Code S.USCOHP*27774

These data are a product and property of Colorado State University, Colorado Natural Heritage Program (CNHP). These data are strictly "on loan" and should be considered "works in progress". Data maintained in the Colorado Natural Heritage Program database are an integral part of ongoing research at CSU and reflect the observations of many scientists, institutions and our current state of knowledge. These data are acquired from various sources, with varying levels of accuracy, and are continually being updated and revised. Many areas have never been surveyed and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. These data should not be regarded as a substitute for on-site surveys required for environmental assessments. Absence of evidence is NOT evidence of absence. Absence of any data does not mean that other resources of special concern do not occur, but rather CNHP files do not currently contain information to document this presence. CNHP is not responsible for whether other, non-CNHP data providers have secured landowner permission for data collected.

These data are provided for non-commercial purposes only. Under no circumstances are data to be distributed in any fashion to outside parties. To ensure accurate application of data, tabular and narrative components must be evaluated in conjunction with spatial components. Failure to do so constitutes a misuse of the data. The Colorado Natural Heritage Program shall have no liability or responsibility to the data users, or any other person or entity with respect to liability, loss, or damage caused or alleged to be caused directly or indirectly by the data, including but not limited to any interruption of service, loss of business, anticipatory profits or indirect, special, or consequential damages resulting from the use of operation of the data. Data users hereby agree to hold CNHP, Colorado State University, and the State of Colorado harmless from any claim, demand, cause of action, loss, damage or expense from or related to data users use of or reliance on the data, regardless of the cause or nature thereof, and even in the event that such cause is attributable to the negligence or misconduct of CNHP.

These data are provided on an as-is basis, as-available basis without warranties of any kind, expressed or implied, INCLUDING (BUT NOT LIMITED TO) WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. Although CNHP maintains high standards of data quality control, CNHP, Colorado State University, and the State of Colorado further expressly disclaim any warranty that the data are error-free or current as of the date supplied