

Level 4 Potential Conservation Area (PCA) Report

Name Chalk Creek Headwaters

Site Code S.USCOHP*27775

IDENTIFIERS

Site ID 2633 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 383727N
 State Colorado Longitude 1062122W

Quad Code Quad Name

38106-F3 Saint Elmo
 38106-E3 Garfield

County

Chaffee (CO)

Watershed Code Watershed Name

11020001 Arkansas Headwaters

SITE DESCRIPTION

Minimum Elevation	11,040.00 Feet	3,364.99 Meters
Maximum Elevation	11,880.00 Feet	3,621.02 Meters

Site Description

The site encompasses the valley surrounding the headwaters of Chalk Creek to the historic ghost town of Hancock. This lush riparian area occurs in the valley of a high elevation, glacially carved cirque. The wide, gently undulating, north-south trending valley is surrounded to the south, west and east by steep slopes and ridges characterized by arêtes and horns. Geologically the area is formed of middle tertiary, igneous intrusive rocks (age 20-40 M.Y.) of intermediate to felsic compositions. Substrate is metamorphic or igneous rocks with a dominantly silicic composition (Tweto 1979). Hydrology is bedrock controlled with little, if any, transfer of groundwater into or out of the basin through fractures. Shallow groundwater moves through glacial drift and talus slopes fed by precipitation and snowmelt. Here, slope and valley wetlands are sustained by shallow groundwater discharge. Ultimately, the snowmelt and precipitation that percolates down through the steep talus and scree slopes and wetlands, emerges in the glacial valley and coalesces to form Chalk Creek which is a first order stream until just below the Hancock town site. Valley soils vary from moist to saturated to inundated. Hummocky soils are scattered throughout and peat formation occurs to approximately two feet in a patchy distribution at elevations above 11,600 ft. Otherwise, soils are typically well developed with a thick organic layer. Alluvial deposits of boulders and gravel underlie soils throughout the site (Tweto 1979). Upland alpine plant communities on the steep slopes that surround the basin are a patchwork of fellfields, turf meadows, krummholz and willow carrs interspersed with talus and scree slides. Further down in elevation, upland slopes are dominated by spruce - fir (*Picea engelmannii* - *Abies lasiocarpa*) forests. These steep forested slopes interfinger with the valley meadows abruptly giving way to moisture-loving plants that dominate the valley floor. Valley floor habitat is characterized by a diverse mosaic of willow carrs, herbaceous wet and mesic meadows and open water ponds. This mosaic is a result of numerous processes that have created a variety of soil moisture conditions. These processes include stream meandering and out-of-bank flows, prolific beaver damming activity, and shallow groundwater flow and soil slumping that has created solifluction terraces and lobes. Habitat in this varied environment is species rich and structurally complex with numerous plant communities and associations. Willow carrs are characterized by patches of wolf willow (*Salix wolfii*) in association with planeleaf (*Salix planifolia*) and bareground willow (*Salix brachycarpa*). Herbaceous cover is characterized by a patchy mosaic of forbs and graminoids with forbs typically dominant. Characteristic forb species include marsh marigold (*Caltha leptosepala*), elephant head (*Pedicularis groenlandica*), king's crown (*Rhodiola integrifolia*), alpine anemone (*Anemone narcissiflora*), triangular-leaf senecio (*Senecio triangularis*), tall fringed bluebells (*Mertensia ciliata*), brook saxifrage (*Saxifraga odontoloma*), star gentian (*Swertia perennis*), globeflower (*Trollius laxus* var *albiflorus*), Bigelow's senecio (*Senecio biglovii*) and Gray's angelica (*Angelica grayi*). Characteristic graminoid species include water sedge (*Carex aquatilis*), western sedge (*Carex scopulorum*), Holm sedge (*Carex heteroneura* var. *chalciolepis*), Rocky Mountain rush (*Juncus saximontanus*), spike rush (*Eleocharis acicularis*), tufted hairgrass (*Deschampsia caespitosa*) and slender cotton grass (*Eriophorum gracile*). Birds observed at the site include White Crowned Sparrow, Pine Grosbeak,

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Fox Sparrow, Northern Flicker, American Robin, Olive-sided Flycatcher, Mountain Chickadee and Northern Harrier.

Key Environmental Factors

Hydrology and beaver (*Castor canadensis*), a keystone species, are driving factors that exert a major influence on biota at the site. Hydrology is tightly associated with snowmelt. Both a natural hydrologic regime and beaver activity are important to maintaining a high water table.

Climate Description

Climate records in the town of Pitkin, located approximately 9.5 miles to the southwest of Hancock but on the west side of the Continental Divide, indicate that winters are generally 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

Hard rock mining dominated the landscape in the late 1800's.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 04/01/2009

Designer Malone, D.G.

Boundary Justification

The boundary encompasses the elements and the ecological processes that sustain them. It should provide a suitable buffer to protect against direct disturbance and allow for community migration. Although the community is widespread, it is never very abundant where it occurs (NatureServe 2009). Two primary ecological processes, hydrology and beaver activity, are essential to maintaining the system. Specifically, the community is reliant on a high water table, shallow surface flow and episodic flooding for long-term viability (NatureServe 2009 and Rondeau 2001) so any activities that alter hydrology or lower the water table threaten community sustainability (NatureServe 2009).

Primary Area 683.47 Acres

276.59 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

The site supports an excellent (A-ranked) occurrence of the globally vulnerable (G3/S3) *Salix wolfii* / mesic forbs subalpine riparian willow carr and an excellent (A-ranked) occurrence of the state imperiled (G5/S2) slender cottongrass (*Eriophorum gracile*).

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

No Data

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

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<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>
24572	<i>Salix wolfii</i> / Mesic Forbs Shrubland	Subalpine Riparian Willow Carr	G3	S3	Yes
18619	<i>Eriophorum gracile</i>	slender cottongrass	G5	S2	No

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.

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