

Level 4 Potential Conservation Area (PCA) Report

Name Barnard Creek in Box Canyon

Site Code S.USCOHP*8737

IDENTIFIERS

Site ID 67 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 384553N
State Colorado Longitude 1051446W

<u>Quad Code</u>	<u>Quad Name</u>
38105-G3	Wrights Reservoir
38105-G2	Cripple Creek North

County

Teller (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
11020002	Upper Arkansas

SITE DESCRIPTION

Minimum Elevation	7,840.00 Feet	2,389.63 Meters
Maximum Elevation	8,840.00 Feet	2,694.43 Meters

Site Description

Barnard Creek is a first order stream, originating within an active gold mining area, its headwaters located north of Cripple Creek and joining Fourmile Creek approximately seven miles later. Barnard Creek flows through three miles of residential development before encountering another mile of active mining claims. The Barnard Creek at Box Canyon site encompasses the area owned by BLM below the mining and residential areas. Barnard Creek is a meandering, moderate gradient stream winding through a narrow vertical canyon. Barnard Creek includes pools and riffles within the Box Canyon but becomes channelized once the canyon opens up into the relatively flat valley below. The majority of the canyon has vertical walls, but where slopes are less extreme, a pinon pine (*Pinus edulis*) / Rocky Mountain juniper (*Juniperus scopulorum*) woodland is present with Douglas-fir (*Pseudotsuga menziesii*). Gambel oak (*Quercus gambelii*) groves alternate with thickets of gooseberry and currant (*Ribes* spp.) and Boulder raspberry (*Rubus deliciosus*) along the canyon toeslope. Below the canyon, the valley bottom serves as cattle pasture with numerous introduced pasture grasses. The dominant riparian community is a degraded thinleaf alder (*Alnus incana*) shrubland, with the majority of alders dead. Many surviving alders have resprouted modestly at the base of their tall dead branches. The riparian vegetation is as narrow as one foot on either side of the creek in places. Upland plants are encroaching on the riparian zone, likely due to infrequent flooding. There is cattle grazing within the wide downstream section. Beavers were likely present in the past, based on what appear to be old beaver dams. A subdivision has installed seven small ponds two miles upstream from the site. There are stock ponds on some of the unnamed tributaries of Barnard Creek. The canyon's rock walls consist of Pikes Peak granite (Tweto 1979). Upland soil of the easternmost portion of the site is classified as Tolex very gravelly sandy loam. The majority of the site's upland soil is Guffey very gravelly sandy loam (USDA NRCS 2008). Riparian zone soil is sandy clay loam over gravel and bedrock.

Key Environmental Factors

Beaver dams, surface flow, and flooding are the factors that generally maintain montane shrublands (Rondeau 2001). The absence of beaver and the presence of numerous manmade dams upstream from the site may explain the poor condition of its riparian vegetation. There is a possibility that upstream mining and development have degraded water quality and harmed the site's wildlife, but bears and birds are still present.

Climate Description

Teller County is cool and dry considering that Pikes Peak has the topographic relief to cool humid air and initiate precipitation. Average annual precipitation is 10.5-16.2 inches (<http://www.worldclimate.com>), depending upon exact location within the county. Snowfall is greatest in April and May. Monsoon rains peak in July. Spring and summer therefore have the greatest precipitation, and sunny fall weather dries out the landscape. Teller County has the second highest rate of lightning strikes nationwide, an annual average of

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5,700 strikes that reach the ground. (Precipitation timing and lightning information was taken from Teller County 2008). Average maximum temperature is lowest, 30 °F (-1.1 °C), in January, and highest, 75.4 °F (24.1 °C), in July. Average minimum temperature is lowest, -2.8 °F (-19.4 °C), in January, and highest, 45.9 °F (7.7 °C) in July (<http://www.worldclimate.com>).

Land Use History

An old wagon road, barely visible, travels the length of the canyon.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 12/15/2010

Designer Shaw, A. E. and D.R. Culver

Boundary Justification

The site boundary was delineated to encompass known element occurrences and contiguous habitat that potentially supports the elements. Additionally, sufficient habitat to enable essential ecosystem processes, specifically hydrologic and geologic processes, and topography.

Primary Area 1,175.36 Acres

475.65 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B4: Moderate Biodiversity Significance

Biodiversity Significance Comments

The site is drawn for a fair (C-ranked) occurrence of a globally vulnerable (G3/S3) plant association, thinleaf alder (*Alnus incana*) / mesic graminoids shrubland. This riparian community has fluctuated in viability over the years. In 1997 it was ranked as historically degraded but it has since recovered. The alders that were then thought to be making a come-back have for the most part stayed in a tenuous state of resprouting but not thriving.

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

Weeds such as butter-and-eggs (*Linaria vulgaris*) and Canada thistle (*Cirsium arvense*) are abundant.

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>
24976	<i>Alnus incana</i> / Mesic Graminoids Shrubland	Montane Riparian Shrubland	G3	S3	Yes

REFERENCES

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Reference ID

Full Citation

198660	Culver, D.R., D. Malone, and A. Shaw. 2011. CNHP Final Report: Survey of Critical Biological Resources in Teller County, Colorado. 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.
198642	Teller County (Web Page). Accessed 2010. 2008 Teller County Multi-Hazard Mitigation Plan. http://www.co.teller.co.us/OEM/tellercopdm_plan.pdf
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.
198640	USDA Natural Resource Conservation Service. 2008. Soil Survey Geographic (SSURGO) Database for Teller-Park Area, Parts of Teller and Park Counties, Colorado. Fort Worth, TX: United States Department of Agriculture, Natural Resource Conservation Service.

ADDITIONAL TOPICS

Additional Topics

Original site design by Kittel, G.M. 1997-05-12.

VERSION

Version Date 12/15/2010

Version Author Shaw, A. E. and D.R. Culver

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