

Level 4 Potential Conservation Area (PCA) Report

Name Severy Creek

Site Code S.USCOHP*22072

IDENTIFIERS

Site ID 1625 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 385301N
State Colorado Longitude 1050014W

<u>Quad Code</u>	<u>Quad Name</u>
38105-H1	Woodland Park
38105-G1	Pikes Peak
38104-H8	Cascade

County

El Paso (CO)
Teller (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
11020003	Fountain

SITE DESCRIPTION

Minimum Elevation	8,200.00	Feet	2,499.00	Meters
Maximum Elevation	12,300.00	Feet	3,749.00	Meters

Site Description

The Severy Creek site is located on the east slope of the Front Range just below Pikes Peak and encompasses a subalpine glacial cirque. Severy Creek begins in these wetlands and flows east, out of the cirque down steep-walled mountain slopes. At higher elevations the spruce forest transitions to krummholz and then to alpine tundra where plant communities are characterized by a complex mosaic of cushion plant communities with species such as alpine dryad (*Dryas octopetala*) which is essential in stabilizing these gravel slopes, turf and forb meadows and fellfield communities. Hydrology is dominated by shallow ground discharge and surface water flow that initiates from surrounding upland alpine and subalpine zone slopes and maintains basin wetlands and stream flow. Habitat on the steep walls of the cirque is dominated by a dense canopy of Engelmann spruce (*Picea engelmannii*) forest while habitat on the wide, flat basin of the cirque is a patchy mosaic of open water, wet meadows and willow carrs including a shortfruit willow (*Salix brachycarpa*) / water sedge (*Carex aquatilis*) community. Bedrock geology is composed of Pikes Peak granite (Tweto 1979) which is extremely friable, eroding into coarse and easily destabilized gravel soils. Uplands are severely fragmented by the Pikes Peak toll road and by ongoing road development. Roads have altered system hydrology, exacerbated erosion processes and degraded landscape connectivity. Altered hydrology and connectivity diminish long term potential viability of upland, wetland and stream habitats. Copious amounts of gravel have been carried into and accumulated on the floor of the cirque at the perimeter of the wetlands. Because gravel is highly porous and has little water holding capacity the thick accumulation of gravel is effectively producing drier conditions than would typically be seen in a wetland.

Key Environmental Factors

Hydrology is the primary ecological process necessary to the maintenance of the wetland system that is the focus of this site. Specifically, shallow ground and surface water flow from surrounding upland slopes maintains the upland, wetland and stream habitat in the cirque basin. Importantly, at this site hydrology is dependent on the interaction of climate, floristics, and soils. Although the greatest amount of precipitation comes during summer months, winter snowfall makes an essential contribution to the hydrologic system. Snow is blown from alpine habitat down into the upper subalpine forests where it is trapped and stored. As the snow melts it infiltrates into soils and slowly moves downslope into wetland and stream habitat thereby mediating fluctuations in the wetland and stream hydrograph.

Climate Description

Due primarily to elevational changes and topographic complexity wide climate variations occur within short distances and local climate on Pikes Peak is dramatically different from climate at relatively nearby locations which are at lower elevations. Due to geography, precipitation in Front Range ecosystems in Teller County

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comes primarily during summer months. At this site on this northeast slope on Pikes Peak at an elevation of 12,500 feet, from 1971 to 2000, coldest temperatures occurred in January with an average maximum of 27.63 °F and a minimum of 6.04 °F. Warmest temperatures occurred in July with an average maximum of 62.85 °F and an average minimum of 36.66 °F. Annual average precipitation was 29.21 inches. April through August are the wettest months of the year with July having the greatest average precipitation with 4.94 inches. Driest months are November through February with January and February having the least precipitation with 0.76 and 0.80 inches respectively (Prism 2010).

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 06/15/2001

Designer Doyle, G.A. and Malone, D.G.

Boundary Justification

The entire watershed of Severy Creek is included. The watershed boundary was delineated using 1:100,000 scale USGS topographic maps. The entire watershed is included because it is small and any activities within it could potentially affect the fish population. The boundary includes the entire reach of the stream considered occupied habitat by the Colorado Division of Wildlife (Colorado Division of Wildlife 2001a).

Primary Area 2,258.64 Acres

914.04 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site contains one of three, native historic populations of greenback cutthroat trout (*Oncorhynchus clarkii stomias*) (G4T2T3/S2) in the Arkansas drainage and one of only four stable native historic populations rangewide (Metcalf et al. 2007). Greenback cutthroat trout is the only trout endemic to the headwaters of the South Platte and Arkansas River drainages. By the early 1900's, the subspecies was believed extinct due to over-harvest, introduction of non-native trout species, and habitat alteration (U.S. Fish and Wildlife Service 1998). The population was discovered by Colorado Division of Wildlife in 1998 and determined to be "pure" based on genetic testing (Policky et al. 1999; Metcalf et al. 2007). There is also a good to fair (BC-ranked) occurrence of the globally imperiled (G2G3/S2S3) short-fruit willow / water sedge (*Salix brachycarpa* / *Carex aquatilis*) shrubland. This association is described only from the Colorado Rocky Mountains but is also expected to occur in Utah. It has a naturally restricted distribution occurring only in narrow bands between wetter and drier micro-sites at montane elevations and consists of an unusual combination of mesic and less mesic habitat demanding plant species. This community is newly described, from only four stands, has not been specifically inventoried, and is predicted to be relatively uncommon (NatureServe 2010).

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 Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
<u>State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>			
24828	<i>Salix brachycarpa</i> / <i>Carex aquatilis</i> Shrubland	Subalpine Riparian/Wetland Carr	G2G3	S2S3	No
16680	<i>Oncorhynchus clarkii stomias</i>	Greenback Cutthroat Trout	G4T2T3	S2	Yes

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
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.
195169	Metcalfe, J. L., V. L. Pritchard, S. M. Silvestri, J. B. Jenkins, J. S. Wood, D. E. Cowley, R. P. Evans, D. K. Shiozawa, and A. P. Martin. 2007. Across the great divide: genetic forensics reveals misidentification of endangered cutthroat trout populations. <i>Molecular Ecology</i> 16:4445-4454.
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 .
161106	Policky, G.A., J.L. Melby and G.S. Dowler. 1999. Greenback cutthroat trout recovery efforts, 1999 Progress report, Southeast Region. Colorado Division of Wildlife.
198649	Prism Climate Group (Web Page). Accessed 2010. Spatial Climate Analysis. http://www.prism.oregonstate.edu/
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 Doyle, G.A. 2001-06-15.

VERSION

Version Date 02/22/2011
Version Author Malone, D.G.

Disclaimer

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