

Level 4 Potential Conservation Area (PCA) Report

Name Middle Clear Creek Canyon

Site Code S.USCOHP*27778

IDENTIFIERS

Site ID 2636 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 385958N
State Colorado Longitude 1062140W

Quad Code Quad Name

38106-H4	Winfield
38106-H3	Mount Harvard
39106-A3	Granite
39106-A4	Mount Elbert

County

Chaffee (CO)

Watershed Code Watershed Name

11020001	Arkansas Headwaters
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SITE DESCRIPTION

Minimum Elevation	8,959.00	Feet	2,730.70	Meters
Maximum Elevation	10,068.00	Feet	3,068.73	Meters

Site Description

The site is along Clear Creek in riparian habitat that extends from the subalpine down into the montane life zone. Clear Creek drains a glacially carved valley on the eastern slope of the Sawatch Mountains and has its confluence with the Arkansas River approximately 2.5 miles below the town of Granite. The valley is steep-walled and north-south trending. Valley bottom topography alternates between narrow with a steep-gradient and wider openings with a gently sloping gradient. Stream channel and riparian habitat characteristics vary with valley bottom topography. Narrow reaches of the valley are typically drained by a steep-gradient, Rosgen type "B" (Rosgen 1996) stream with low sinuosity and a narrow riparian zone. Wider valley openings characteristically have a low-gradient, Rosgen type "C" or "E" (Rosgen 1996) stream and channel with high sinuosity and a broad riparian zone. In these wider valley openings beaver (*Castor canadensis*) activity is prolific. Soils vary from well to poorly drained and are derived mainly from valley alluvium. Valley bottom geology is glacial drift from the Pinedale and Bull Lake glaciation that occurred during the Pleistocene; upland geology is Precambrian granitic rock of 1700 M.Y. and, in upstream reaches Laramide intrusive rocks of 40-72(?) M.Y. with mainly intermediate to felsic compositions (Tweto 1979). Riparian habitat is characterized by a linear mosaic of plant communities in various stages of succession. Steep, narrow valley reaches with cold air drainage and limited sunlight are characterized by evergreen riparian forests interspersed with patches of riparian shrubs. Conifer forests are dominated by the blue spruce / thinleaf alder (*Picea pungens* / *Alnus incana*) association. Other trees include aspen (*Populus tremuloides*), Engelmann spruce (*Picea engelmannii*), and lodgepole pine (*Pinus contorta*). Although thinleaf alder dominates the upper shrub canopy other shrubs are common in the lower two layers and include Drummond's willow (*Salix drummondiana*), twinberry honeysuckle (*Lonicera involucrata*), mountain gooseberry (*Ribes inerme*), and golden currant (*Ribes aureum*). Herbaceous cover is characterized by a diverse mix of forbs and graminoids. Forbs include heartleaf bittercress (*Cardamine cordifolia*), tall fringed bluebells (*Mertensia ciliata*), and cow parsnip (*Heracleum maximum*). Graminoids include subalpine rush (*Juncus mertensianus*), bluejoint reedgrass (*Calamagrostis canadensis*), and water sedge (*Carex aquatilis*). Shrublands in these steeper reaches are characterized by a dense cover of the thinleaf alder / Drummond's willow plant association which occurs on the margins of the stream and within the active floodplain. Drummond's willow dominate the tall, closed-canopy but other shrub species are also present including narrowleaf cottonwood (*Populus angustifolia*) saplings, mountain willow (*Salix monticola*), coyote willow (*Salix exigua*), twinberry honeysuckle, and mountain gooseberry. Herbaceous cover includes forbs and graminoids and varies with soil characteristics and canopy cover. Common forbs in stands with developed soils include heartleaf bittercress, geranium (*Geranium richardsonii*) and monkshood (*Aconitum columbianum*). Typical graminoids include

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woodrush (*Luzula parviflora*), arctic rush (*Juncus balticus*) and field horsetail (*Equisetum arvense*). Further away from the stream, behind the alder - willow band and at the outer periphery of the riparian zone the plant community is characterized by a mixed conifer - deciduous tree canopy of aspen, blue spruce and narrowleaf cottonwood. Riparian habitat in wide valley openings is a mosaic of deciduous woodlands, willow shrublands, wet herbaceous meadows and open water ponds. Beaver (*Castor canadensis*) activity is prolific in the shrubland and meadow ecosystems and is often closely associated with the plant community occurrences. Deciduous woodlands, dominated by narrowleaf cottonwood, occur along stream banks or the periphery of the willow shrublands. Wide expanses of willow shrublands characterize the low-gradient valley openings. Willow species in these shrublands are dominated by the mountain willow and Geyer willow (*Salix geyeriana*) but other shrubs are also common including Drummond's and planeleaf willow (*Salix planifolia*), shrubby cinquefoil (*Dasiphora floribunda*), and mountain gooseberry. Herbaceous cover is a lush and diverse patchy mosaic of forbs and graminoids that varies with environmental factors such as soil characteristics and canopy cover. Common graminoids include beaked sedge, water sedge, bluejoint reedgrass smallwing sedge (*Carex microptera*), ebony sedge (*Carex ebenea*), cliff sedge (*Carex scopulorum*), swordleaf rush (*Juncus ensifolius*), subalpine rush, longstyle rush (*Juncus longistylus*) and common spikerush (*Eleocharis palustris*). Common forbs include Elephant heads (*Pedicularis groenlandica*), blue-eyed grass (*Sisyrinchium montanum*), shooting-star (*Dodecatheon pulchellum*), monkshood, king's crown (*Rhodiola integrifolia*), broad-lipped twayblade (*Listera convallarioides*) and northern bog-orchid (*Limnorchis hyperborea*). A variety of plant communities provides the diversity of resources that has enabled an abundant and species rich riparian bird community. Commonly observed birds include Lincoln's Sparrow, Swainson's Thrush, Cordilleran Flycatcher, Cedar Waxwing, Townsend's Solitaire, MacGillivray's Warbler, Warbling Vireo, Dark-eyed Junco, Ruby-crowned Kinglet, Tree Swallow, White-crowned Sparrow, and Red-naped Sapsucker. Additionally, boreal toads (*Bufo boreas*) have been observed in the site, but breeding in the area has not been confirmed. Upland plant communities adjacent to upstream reaches on north-facing slopes are characterized by spruce - fir (*Picea engelmannii* - *Abies lasiocarpa*) forests and on south-facing slopes by a mosaic of aspen and lodgepole pine woodlands and spruce - fir forests. Upland plant communities adjacent to downstream reaches on south-facing slopes are characterized by sage (*Artemisia tridentata*) shrublands with scattered stands of Douglas-fir (*Pseudotsuga menziesii*). North-facing upland slopes are characterized by a mosaic of Douglas-fir forests, sage shrublands and aspen (*Populus tremuloides*) woodlands.

Key Environmental Factors

Driving factors that exert a major influence on biota at the site include hydrology and soil.

Climate Description

Climate records for Independence Pass, which is approximately 12 miles to the northwest and on 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

Hardrock mining and ranching was historically common in the upper stream reaches.

Cultural Features

Mining ghost town of Winfield.

SITE DESIGN

Site Map Y - Yes

Mapped Date 04/01/2009

Designer Malone, D.G.

Boundary Justification

This site includes approximately four miles of good to excellent quality riparian habitat that supports four plant communities of concern. A buffer was included on each side of the stream to help maintain the natural hydrologic regime, especially annual episodic flooding, and to protect the plant communities from direct disturbances such as road maintenance, recreational trampling, and development. Although not designed for this subspecies, one adult boreal toad was documented within the site in 2005. No breeding occurrences have been noted but potential breeding habitat does exist.

Primary Area

4,792.16 Acres

1,939.33 Hectares

SITE SIGNIFICANCE

Level 4 Potential Conservation Area (PCA) Report

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Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

The site supports an excellent (A-ranked) occurrence of a globally vulnerable (G3/S3) *Picea pungens* / *Alnus incana* montane riparian forest, a good (B-ranked) occurrence of a globally vulnerable (G3/S3) *Salix geeyeriana* - *Salix monticola* / mesic forbs shrubland, a good (B-ranked) occurrence of a globally vulnerable (G3/S3) *Salix monticola* / *Carex utriculata* montane riparian willow carr, and a good (B-ranked) occurrence of a globally vulnerable (G3/S3) *Alnus incana* - *Salix drummondiana* montane riparian shrubland.

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

If breeding occurrences of the boreal toad are found, this could increase the biodiversity significance of this site.

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>
24743	<i>Alnus incana</i> - <i>Salix drummondiana</i> Shrubland	Montane Riparian Shrubland	G3	S3	Yes
24882	<i>Salix monticola</i> / <i>Carex utriculata</i> Shrubland	Montane Riparian Willow Carr	G3	S3	Yes
24573	<i>Salix geeyeriana</i> - <i>Salix monticola</i> / Mesic Forbs Shrubland	Geyer's Willow-Rocky Mountain Willow/Mesic Forb	G3	S3	Yes
24518	<i>Picea pungens</i> / <i>Alnus incana</i> Woodland	Montane Riparian Forests	G3	S3	Yes

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
198347	Colorado Division of Wildlife (Web Page). 2009. Boreal toad. http://wildlife.state.co.us/WildlifeSpecies/Profiles/ReptilesAndAmphibians/Boreal.htm . Accessed in 2009.
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.
191383	Rosgen, D. 1996. Applied river morphology. Wildland Hydrology, Pagosa Springs, CO.
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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