

Level 4 Potential Conservation Area (PCA) Report

Name Arkansas River at Pine Creek

Site Code S.USCOHP*27794

IDENTIFIERS

Site ID 2637 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 390005N
 State Colorado Longitude 1061355W

<u>Quad Code</u>	<u>Quad Name</u>
38106-H2	Harvard Lakes
39106-A3	Granite
38106-H3	Mount Harvard
39106-A2	South Peak

County

Chaffee (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
11020001	Arkansas Headwaters

SITE DESCRIPTION

Minimum Elevation	8,590.00	Feet	2,618.23	Meters
Maximum Elevation	10,200.00	Feet	3,108.96	Meters

Site Description

The site is located on the banks of the Arkansas River approximately nine miles upstream of the city of Buena Vista in the upper Arkansas River Watershed. Here, the Arkansas River is a fourth order, north-south trending stream that drains a moderately wide, gently sloping valley. The upper Arkansas Valley is flanked by the Sawatch Mountains to the west and by the Mosquito Mountains to the east. These steep mountain ranges rise dramatically from the valley floor, creating a "double" rain-shadow effect in the valley. Geology on the valley floor at the upstream end is Pleistocene age glacial drift of the Pinedale and Bull Lake glaciations; mid reaches are gravels and alluviums of the Pinedale and Bull Lake glaciations; and lower reaches are Quaternary age younger alluvium that are landslide deposits that includes talus, rock glacier and thick colluvial deposits (Tweto 1979). Upland and riparian soils are typically well-drained and riparian soils characteristically have a thin organic layer. Upland habitat is characterized by drought tolerant plant communities including sage (*Artemisia tridentata*) shrublands, pinon - juniper (*Pinus edulis* - *Juniperus scopulorum*) woodlands with Douglas-fir (*Pseudotsuga menziesii*) scattered across the hillslopes. Upland and riparian habitat on the left bank are fragmented by a dirt road and a railroad grade and on the right bank by a highway. On the left bank, at the base of the hillslopes, a groundwater discharge zone creates a narrow but extensive zone of wetland vegetation. The narrow riparian zone is seasonally flooded but this is a controlled river and the hydrologic regime does not approximate the natural amplitude or periodicity of a natural hydrologic cycle. Additionally, the river has been channelized by a highway and by a historic railroad grade with consequent impacts to channel form and function and to the condition and extent of riparian habitat. Riparian habitat forms a narrow band of lush vegetation that winds through this arid landscape. In these stream reaches it is dominated by woodlands interspersed with shrublands and patches of herbaceous cover. Riparian habitat on the upper 2.5 miles of this site is characterized by an association of ponderosa pine (*Pinus ponderosa*) and thinleaf alder (*Alnus incana*). The upper canopy is clearly dominated by ponderosa pine but other tree species are also present including Douglas-fir and narrowleaf cottonwood (*Populus angustifolia*). Thinleaf alder dominates the shrub layer but is confined to a narrow band lining the stream channel. Other common shrub species include coyote willow (*Salix exigua*), mountain willow (*Salix monticola*), Wood's rose (*Rosa woodsii*), wax currant (*Ribes cereum*) and shrubby cinquefoil (*Dasiphora floribunda*). The herbaceous layer is sparse except for the very narrow zone of inundated habitat adjacent to the river. Common herbaceous species here include arctic rush (*Juncus balticus*), slender scouring rush (*Equisetum variegatum*) and star solomonplume (*Maianthemum stellatum*). The lower 0.5 miles is characterized by an association of narrowleaf cottonwood and Douglas- fir interspersed with patches of willow and herbaceous cover. Other tree species include blue spruce (*Picea pungens*) and ponderosa pine. Thinleaf alder and coyote willow co-dominate the shrub canopy but other shrubs also occur

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including mountain willow, Drummond's willow (*Salix drummondiana*), Rocky Mountain maple (*Acer glabrum*), chokecherry (*Prunus virginiana*) and Wood's rose (*Rosa woodsii*).

Key Environmental Factors

The primary ecological process essential for the maintenance of these riparian woodland systems is hydrology and specifically surface flow with annual and episodic flooding (Rondeau 2001). Seasonal flooding allows ponderosa pine access to the water table, and enables regeneration and establishment of narrowleaf cottonwood; additionally, Douglas-fir establishment is favored by well-drained colluvial soils and the moist cool air of narrow canyons (NatureServe 2009).

Climate Description

No Data

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 04/07/2009

Designer Malone, D.G.

Boundary Justification

The boundary encompasses the occurrences and the immediate watershed enabling the hydrologic and ecologic processes that support the long-term viability of the riparian communities.

Primary Area 3,871.60 Acres

1,566.79 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site supports a good (B-ranked) occurrence of a globally imperiled (G2/S2) *Pinus ponderosa* / *Alnus incana* woodland. Lower montane woodland ecological systems occupy less than 1% of the Southern Rocky Mountains ecoregion (Rondeau 2001) and the *Pinus ponderosa* / *Alnus incana* association has been known only from the Front Range of Colorado (NatureServe 2009). There is also a good (B-ranked) occurrence of a globally vulnerable (G3/S3) *Populus tremuloides* / *Alnus incana* montane riparian forest, a good (B-ranked) occurrence of a globally vulnerable (G3/S3) *Picea pungens* / *Alnus incana* montane riparian forest and a fair (C-ranked) occurrence of a globally vulnerable (G3/S2) *Populus angustifolia* - *Pseudotsuga menziesii* montane riparian forest.

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

Element			Global	State	Driving
State ID	State Scientific Name	State Common Name	Rank	Rank	Site Rank
24692	<i>Populus angustifolia</i> - <i>Pseudotsuga menziesii</i> Woodland	Montane Riparian Forest	G3	S2	No
24518	<i>Picea pungens</i> / <i>Alnus incana</i> Woodland	Montane Riparian Forests	G3	S3	No

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24911	<i>Populus tremuloides</i> / <i>Alnus incana</i> Forest	Montane Riparian Forests	G3	S3	No
24958	<i>Pinus ponderosa</i> / <i>Alnus incana</i> Woodland	Ponderosa Pine/Thin Leaf Alder	G2	S2	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.
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.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date	04/07/2009
Version Author	Malone, D.G.

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