

Level 4 Potential Conservation Area (PCA) Report

Name Red Deer and Mercury Creeks

Site Code S.USCOHP*27836

IDENTIFIERS

Site ID 2645 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 385013N
 State Colorado Longitude 1061348W

| <u>Quad Code</u> | <u>Quad Name</u> |
|------------------|------------------|
| 38106-G2 | Buena Vista West |
| 38106-G3 | Mount Yale |

County
 Chaffee (CO)

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

SITE DESCRIPTION

| | | |
|-------------------|----------------|-----------------|
| Minimum Elevation | 8,400.00 Feet | 2,560.32 Meters |
| Maximum Elevation | 11,960.00 Feet | 3,645.41 Meters |

Site Description

The site is located in the montane zone on the east slope of the Sawatch Mountain Range. Both creeks flow eastward. Red Deer Creek has its confluence with North Cottonwood Creek on the valley floor approximately three miles west of the city of Buena Vista. Mercury Creek is diverted into an irrigation ditch upon reaching the valley floor approximately 0.5 miles before reaching its confluence with North Cottonwood Creek. Here, the Sawatch Mountains rise steeply from the valley floor. Red Deer Creek begins near the top of a ridge as a first order stream and flows eastward in a very narrow, steep ravine soon becoming a second order stream as several streams coalesce. Mercury Creek begins near the top of a ridge as a first order stream and flows eastward in a very narrow, steep ravine, remaining a first order stream over its' entire length. The streams drain steep hillslopes in this basin-shaped sub-watershed before flowing onto the valley floor. Geology of the southern flanks of the sub-watershed from the ridge top down to approximately 8,400 ft are Middle Tertiary intrusive rocks (age 20-40 M.Y.) with intermediate to felsic compositions; below 8,400 ft down onto the valley floor the rocks are Quaternary age gravels and alluviums from the Pinedale and Bull Lake glaciations. Geology of the northern half of the sub-watershed from the top of the ridge down to approximately 9,000 ft is biotitic gneiss, schist and migmatite that is derived principally from sedimentary rocks of Precambrian age; from approximately 9,100 ft down to 8,400 ft substrate is unconsolidated surficial deposits and rocks of Quaternary age that are older gravels and alluviums (pre-Bull Lake); and below 8,400 ft down onto the valley floor rocks are Pinedale and Bull Lake age gravels and alluviums (Tweto 1979). Riparian plant communities vary with elevation along this steep gradient (20% to 30%) stream but are typically narrow bands of vegetation lining the ravine. In the subalpine zone, above approximately 10,000 ft, riparian habitat is characterized by spruce - fir (*Picea engelmannii* - *Abies lasiocarpa*) forests with a shrub understory characterized by a diversity of shrubs including thinleaf alder (*Alnus incana*), mountain maple (*Acer glabrum*) and red-osier dogwood (*Cornus sericea*) and an herbaceous layer dominated by forbs such as tall-fringed bluebells (*Mertensia ciliata*), monkshood (*Columbianum aconitum*) and triangular-leaf senecio (*Senecio triangularis*). Between 9,000 ft and 10,200 ft, riparian habitat is characterized by an association of aspen (*Populus tremuloides*) with thinleaf alder. Several conifer species, including subalpine fir and Engelmann spruce, also occur in the tree canopy but aspen is clearly the dominant along the streambanks. Thinleaf alder dominates the shrub canopy but other common shrubs include Rocky Mountain maple, red-osier dogwood, Drummond's willow (*Salix drummondiana*), twinberry honeysuckle (*Lonicera involucrata*) and Wood's rose (*Rosa woodsii*). Herbaceous cover is characterized by a lush, dense cover of forbs with a few graminoids. Common forbs include triangular leaf senecio, brook saxifrage (*Saxifraga odontoloma*), tall fringed bluebells, subalpine larkspur (*Delphinium barbeyi*), sweet cicely (*Osmorhiza occidentalis*), and twisted stalk (*Streptopus amplexifolius*). Further down in elevation and down to the valley floor riparian vegetation transitions to a mixed tree canopy of aspen, blue spruce (*Picea pungens*) and Douglas-fir (*Pseudotsuga menziesii*) and a mixed shrub understory of thinleaf alder, Rocky Mountain maple, Drummond's willow, shining willow (*Salix lasiandra*) and Bebb's willow (*Salix*

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bebbiana) with no one tree or shrub species dominant. The herbaceous layer is a patchy mix of forbs and graminoids with neither dominant. The juxtaposition of riparian and upland habitats contributes to the development of a diverse bird community. Commonly observed birds include Cordilleran Flycatcher (*Empidonax occidentalis*), Gray Flycatcher (*Empidonax wrightii*), Western Wood-peewee (*Contopus sordidulus*), Warbling Vireo (*Vireo gilvus*), Plumbeous Vireo (*Vireo plumbeus*), Western Scrub-Jay (*Aphelocoma californica*), Stellar's Jay (*Cyanocitta stelleri*), Clark's Nutcracker (*Nucifraga columbiana*), Black-capped Chickadee (*Poecile atricapilla*), Mountain Chickadee (*Poecile gambeli*), Red-breasted Nuthatch (*Sitta canadensis*), Golden-crowned Kinglet (*Regulus satrapa*), Swainson's Thrush (*Catharus ustulatus*), Mountain Bluebird (*Sialia currucoides*), Townsend's Solitaire (*Myadestes townsendi*), Western Tanager (*Piranga ludoviciana*), Dark-eyed Junco (*Junco hyemalis*), Brewer's Sparrow (*Spizella breweri*), Chipping Sparrow (*Spizella passerina*), Savannah Sparrow (*Passerculus sandwichensis*), and Lincoln's Sparrow (*Melospiza lincolni*). Upland plant communities are characterized by mesic and drought tolerant plant communities. South-facing slopes are a mosaic of aspen and lodgepole pine (*Pinus contorta*) forests, and herbaceous meadows dominated by graminoids with scattered conifers including Douglas-fir and limber pine (*Pinus flexilis*). North-facing slopes are dominated by Douglas-fir forests or by dense "dog-hair" stands of second-growth lodgepole pine with a sparse herbaceous understory and, on ridge tops, by limber pine.

Key Environmental Factors

Climate, hydrologic regime and soil moisture and stability are key driving factors that exert a major influence on biota at the site. The eastern slopes of the Sawatch Mountains are drier than the west slope due to the interception of eastward-moving Pacific moisture by the west slope. Steep ravines, where shallow ground and surface water coalesce into streams, support lush riparian vegetation and are uniquely contrasted with the dry surrounding uplands. Bank-stabilizing riparian vegetation is essential to channel stability in this environmental setting.

Climate Description

Climate information for Buena Vista, which is approximately four miles to the east and on the valley floor at an elevation of 8,080 ft, records a mean annual precipitation 9.79 inches; the wettest months are July and August with 1.7 and 1.65 inches of precipitation per month respectively; the driest month is January with 0.34 inches; the warmest month is July at 64 deg F and the coldest month is January at 24 deg F (Western Regional Climate Center 2009).

Land Use History

Historic mining and logging impacts are apparent throughout the site.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 04/17/2009

Designer Malone, D.G.

Boundary Justification

The boundary encompasses the element occurrences, a buffer against direct disturbances and the immediate watershed to enable the hydrological and ecological processes that support the plant communities. Annual and episodic flooding is important to maintaining this ecological system and alteration of the flooding regime by diversions or impoundments may result in changes to the plant and community composition (Rondeau 2001).

Primary Area 3,393.93 Acres

1,373.48 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

This site supports an excellent (A-ranked) and a good (B-ranked) occurrence of a globally imperiled (G3/S3) *Populus tremuloides* / *Alnus incana* montane riparian forest.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

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Natural Hazard Comments

No Data

Exotics Comments

No Data

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> |
| 24911 | <i>Populus tremuloides</i> / <i>Alnus incana</i> Forest | Montane Riparian Forests | G3 | S3 | Yes |
| 24911 | <i>Populus tremuloides</i> / <i>Alnus incana</i> Forest | Montane Riparian Forests | G3 | S3 | 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. |
| 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. |
| 198323 | U.S. Department of Agriculture. Natural Resource Conservation Service. 2004. Riparian Assessment using the NRCS Riparian Assessment Method. Montana Natural Resources Conservation Service: http://www.mt.nrcs.usda.gov/technical/ |
| 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 | 04/17/2009 |
| Version Author | Malone, D.G. |

Disclaimer

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