

Level 4 Potential Conservation Area (PCA) Report

Name East Beaver Creek

Site Code S.USCOHP*28187

IDENTIFIERS

Site ID 2719 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 384040N
 State Colorado Longitude 1045855W

<u>Quad Code</u>	<u>Quad Name</u>
38104-F8	Mount Big Chief
38105-F1	Big Bull Mountain

County
 Teller (CO)

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

SITE DESCRIPTION

Minimum Elevation	8,540.00	Feet	2,602.99	Meters
Maximum Elevation	10,120.00	Feet	3,084.58	Meters

Site Description

This site is a steep-walled upper montane / lower subalpine valley. A diverse (29 species) breeding bird community was present during the 2010 site visit in this sub-watershed indicating the presence of a variety of high quality habitat with sufficient foraging, nesting and protective resources. Habitat is a complex mosaic of deciduous and coniferous forest, meadows, cliffs and streams. East Beaver Creek trends south through a moderately wide canyon where it is a Rosgen type C4 stream. The riparian soil is a sandy clay loam that is saturated during peak flows and gradually dries out. The creek was downcut historically but the channel is now stable, with the possible exception of the south end of the site, where herbaceous plants and shrubs have been grazed. The stream banks are stabilized somewhat by shrubs and grasses. East Beaver Creek has access to a floodplain except for a half-mile stretch of creek that passes through a very narrow sinuous canyon where the road diverges from the creek. The creek contains brook trout (*Salvelinus fontinalis*). Caddisfly (*Trichoptera* spp.) larvae were observed downstream at the county line. Stream bed substrate ranges from gravel to boulders. Tree cover is sparse within the riparian zone on the main stem of East Beaver Creek. However, in steep sections of the tributary that flows west from Black Mountain, the Bebb's willow (*Salix bebbiana*) shrubland has up to 35% cover of quaking aspen (*Populus tremuloides*) and 40% total tree cover. The plant community is otherwise similar in the steep and flatter sections of the tributary and adjoining East Beaver Creek, so the whole community is classified as Bebb's willow shrubland. The tributaries that flank Pecks Camp have 37% quaking aspen cover and 46% total tree cover. These two tributaries support quaking aspen (*Populus tremuloides*) / thinleaf alder (*Alnus incana*) forest. On East Beaver Creek between these two tributaries, the dominant plant community is thinleaf alder / mesic graminoids shrubland. Throughout the riparian zone of the site, willows (*Salix* spp.) and thinleaf alder exhibit high levels of mortality but show successful sapling recruitment. The uplands have recovered well from historic logging and have good connectivity to Pike National Forest. The forest is structurally complex and diverse with a dense cover of native graminoids. Soils are well developed and stable. Quaking aspen (*Populus tremuloides*) woodlands occupy moist swales and slopes in a mosaic with Engelmann spruce (*Picea engelmannii*). Wide saddles are dominated by lush graminoid meadows, rocky ridges and cliffs are occupied by bristlecone pine (*Pinus aristata*), limber pine (*P. flexilis*), and ponderosa pine (*Pinus ponderosa*) woodlands occupy south-facing ridges and slopes in a mosaic with xeric graminoids. Upland soil is classified as Lakehelen very gravelly fine sandy loam (USDA NRCS 2008). Rock outcrops are Pikes Peak granite (Tweto 1979).

Key Environmental Factors

The dominant shrubs and tree species of all three documented riparian plant associations are sensitive to browsing animals such as elk (*Cervus canadensis*). Livestock and wildlife have impacted the vegetation, it is likely the plant communities would likely extend further north and south if those areas were not grazed. Thinleaf alder (*Alnus incana*) / mesic graminoids shrubland is an early successional plant community. Quaking

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aspen (*Populus tremuloides*) / thinleaf alder (*Alnus incana*) forest may be early-seral or climax communities. Thinleaf alder builds up stream banks with time and is outcompeted by trees that colonize that now the banks are above annual flood levels (Carsey et al. 2003). Major floods may be needed to set back succession to a stage at which thinleaf alder can maintain dominance and/or colonize new areas. Greater flooding would also benefit the Bebb's willow (*Salix bebbiana*) community. Many willows have died and more are dying, probably due to the Penrose-Rosemont reservoir that is diverting water upstream.

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 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

This valley was intensively logged, grazed, and unsuccessfully mined around the turn of the century, and a few equipment remnants of these operations remain. The original hotel was moved up the valley to the north edge of the site, with the historic barn. Elk (*Cervus canadensis*) were reintroduced in the early part of the 20th century by the late Mr. Rathke to establish a private hunting camp which continues to this day.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 11/30/2010

Designer Shaw, A.E. and D.G. Malone

Boundary Justification

The site boundary is placed along the adjacent ridgelines to incorporate the immediate watershed to preserve flooding frequency and intensity to the extent possible given the Penrose-Rosemont Reservoir upstream. Only private lands with written permission were visited.

Primary Area 3,101.18 Acres

1,255.01 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

The biodiversity rank is based on a good (B-ranked) occurrence of a globally imperiled (G2/S2) plant, James' telesonix (*Telesonix jamesii*). There is also a good (B-ranked) occurrence of the globally vulnerable (G3/S2) Bebb's willow (*Salix bebbiana*) shrubland, a good (B-ranked) occurrence of the globally vulnerable (G3/S3) thinleaf alder (*Alnus incana*) / mesic graminoids shrubland, and a fair (C-ranked) occurrence of the globally vulnerable (G3/S3) quaking aspen (*Populus tremuloides*) / thinleaf alder (*Alnus incana*) forest on either side of the valley. During the 2010 survey a Northern Goshawk (*Accipiter gentilis*), currently watchlisted by CNHP, was observed.

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

Exotic plants that could pose a threat to native vegetation include leafy spurge (*Euphorbia esula*), butter-and-eggs (*Linaria vulgaris*), common mullein (*Verbascum thapsus*), Canada thistle (*Cirsium arvense*),

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bull thistle (*Cirsium vulgare*), and musk thistle (*Carduus nutans*).

Offsite

No Data

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
19611	<i>Telesonix jamesii</i>	James' telesonix	G2	S2	Yes
24911	<i>Populus tremuloides</i> / <i>Alnus incana</i> Forest	Montane Riparian Forests	G3	S3	No
20994	<i>Salix bebbiana</i> Shrubland	Montane Willow Carrs	G3?	S2	No
24976	<i>Alnus incana</i> / Mesic Graminoids Shrubland	Montane Riparian Shrubland	G3	S3	No

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
159854	Carsey, K., G. Kittel, K. Decker, D. Cooper, and D. Culver. 2003. Field guide to the wetland and riparian plant associations of Colorado. Prepared for the Colorado Department of Natural Resources, Denver, CO by the Colorado Natural Heritage Program, Fort Collins, CO.
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.
198649	Prism Climate Group (Web Page). Accessed 2010. Spatial Climate Analysis. http://www.prism.oregonstate.edu/
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.
198652	U.S. Fish and Wildlife Service (Web Page). Accessed 2010. The State of the Birds: 2010 Report on Climate Change. http://www.stateofthebirds.org
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

No Data

VERSION

Version Date	11/30/2010
Version Author	Shaw, A.E. and D.G. Malone

Disclaimer

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