

Level 4 Potential Conservation Area (PCA) Report

Name Willow Creek Pass

Site Code S.USCOHP1*2470

IDENTIFIERS

Site ID 146 Site Class PCA
 Site Alias Willow Creek Pass Macrosite

Network of Conservation Areas (NCA)

NCA Site ID	NCA Site Code	NCA Site Name
-		No Data

LOCATORS

Nation United States Latitude 401523N
 State Colorado Longitude 1060643W

Quad Code	Quad Name
40105-C8	Bowen Mountain
40106-B1	Cabin Creek
40106-B2	Corral Peaks
40106-C2	Parkview Mountain
40106-C1	Radial Mountain
40105-B8	Trail Mountain

County
 Grand (CO)

Watershed Code	Watershed Name
14010001	Colorado headwaters

SITE DESCRIPTION

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

Site Description

Willow Creek begins its 25 mile journey to the Colorado River at the Continental Divide between the Rabbit Ears Range and Never Summer Mountains. It is the first drainage west of the headwaters of the Colorado River and west of Lake Granby. The drainage runs primarily north to south in the Troublesome Range through rolling spruce-fir and lodgepole forested mountains. The high peaks in this drainage reach over 12,000 feet; the confluence with the Colorado River is at 7,900 feet. The boundaries include the headwaters and all of the tributaries down to Trail Creek (8,200 feet). The hydrology of Willow Creek is nearly entirely natural, a unique feature in the Colorado Basin. Floods are uncontrolled and no diversions exist. The natural hydrologic regime, along with nearly 20 miles of excellent riparian habitat, makes this site unique within the Colorado Basin. Nearly the entire length of Willow Creek is a meandering wide-valley stream with a mosaic of willow carrs and sedge meadows dominating the wider stretches. The sedge meadows are dominated by either water sedge (*Carex aquatilis*) or beaked sedge (*C. utriculata*), while the willow carrs are dominated by mountain willow (*Salix monticola*), Geyer's willow (*S. geyeriana*), or wolf willow (*S. wolfii*). Many of its tributaries, such as Pass, Trout, Buffalo, and Bronco creeks are also willow dominated on the lower reaches. The narrow stretches of Willow Creek and its tributaries support lodgepole pine (*Pinus contorta*), blue spruce (*Picea pungens*), and alder (*Alnus incana*) with few willows. Below 8,400 feet near Cabin Creek, approximately 10 miles above the Colorado River confluence, cottonwood trees (*Populus angustifolia*) replace the willows. The floodplain is a mixture of cottonwood and Engelmann spruce (*Picea engelmannii*) along with willows. On the south-facing slopes north of Trail Creek are large open stands of western slope sagebrush shrublands (*Artemisia cana* ssp. *viscidula* / *Festuca thurberi*). Most patches are thick with bunchgrasses and are in excellent ecological condition. The open park near the head of Trail Creek appears to have been grazed more recently than other sagebrush parks along this creek, as indicated by cow pies, a lower density of bunchgrasses, and an increase in shrubby cinquefoil (*Pentaphragmoides floribunda*) relative to other local sagebrush area. The Willow Creek drainage does contain a number of roads. Hwy 125 runs parallel to Willow and Pass creeks, gravel or unpaved roads parallel Cabin and Buffalo creeks, and 4-wheel drive roads parallel a few of the other smaller tributaries. Two Forest Service campgrounds are along Hwy 125. Logging has or is taking place within the drainage, although this seems to be at a minimum. Much of the area has been free of grazing since the early 1990's; however, incidental trespass occurs (Doreen Sumerlin, personal communication, 2003). These impacts appear to have only minor observed effects on the riparian ecosystems within the Willow Creek watershed.

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Key Environmental Factors

Key environmental factors contributing to the maintenance of site biota include seasonal flooding, valley shape, slope, aspect, and perennial surface flows.

Climate Description

Climate likely follows patterns typical of this region of Colorado, being generally xeric throughout the season, with wet spring seasons and a late summer "monsoon" season.

Land Use History

Old gold mining operations are evident along Bronco Creek.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 01/12/1995

Designer Rondeau, R.J.

Boundary Justification

The boundaries encompass over two thirds of the Willow Creek watershed. All major tributaries are included. In order to protect the riparian elements, the entire watershed must be protected. A natural hydrologic regime is necessary to support and maintain riparian communities and all seral stages.

Primary Area 9,308.92 Acres

3,767.20 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

This site contains a good (B-ranked) occurrence of a globally imperiled (G2G3/S2S3) plant community, *Artemisia cana* ssp. *viscidula* / *Festuca thurberi*, and good (B-ranked) occurrences of three globally vulnerable (G3) riparian plant communities: *Picea pungens* / *Alnus incana*, *Salix wolfii* / *Calamagrostis canadensis*, and *Salix monticola* / *Calamagrostis canadensis*. The hydrology of upper Willow Creek is nearly entirely natural, a unique feature in the Colorado River Basin. Following 10 years of statewide wetland and riparian surveys, CNHP is currently unaware of other comparatively sized areas in the state, which exhibit such high quality riparian areas. Portions of other rivers or creeks of similar quality do exist in Colorado, but there are few entire watersheds at a similar elevation, which exhibit the same quality and functional integrity as the Willow Creek watershed. Thus, the Willow Creek Pass site provides an invaluable resource as a reference watershed from which the quality and integrity of riparian areas, water quality, and wildlife populations from other portions of the Southern Rocky Mountain Ecoregion could be compared. Such areas are uncommon as few have been without human-induced disturbance for any extended amount of time. For example, nearly 70% of U.S. Forest Service lands in the Southern Rocky Mountain Ecoregion are under active grazing allotments (Southern Rockies Ecosystem Project 2000). These resource reference areas are invaluable as they provide land managers with baseline conditions for which management can strive, they provide numerous opportunities for researchers, and they likely harbor greater biological diversity than other areas, which have commonly been more impacted.

Other Values Rank V1 - Outstanding values

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

Doreen Sumerlin, wildlife biologist with the Sulphur Ranger District, Arapaho National Forest, noted the following in 1995: "Cabin Creek has been significantly impacted by roads and dispersed camping along the creek. There is a lot of beaver activity. Sawmill Gulch is relatively pristine, but there is a major campground at the confluence. Gold Run has no public access; grazing has been discontinued. Hall Creek is not impacted by human activity. The main fork of Buffalo Creek is heavily impacted by unpaved road. There are a lot of beaver. All forks have moderate livestock grazing, but the riparian areas are fairly healthy. Denver Creek and Kaufman Creek are heavily logged with many roads. Trail Creek is moderately grazed but is in good shape. There are a lot of beaver here. Bronco Creek is degraded. There is a road bed running right up the creek and mining with high pressure water hoses. Upper Bronco Creek is logged as well. Pass Creek and Elk Creek are in good shape. Trout Creek and Trail Creek have motorized trails for dirt bikes and there are some problems in the wetlands. The Forest Service is aware of these areas and is improving them. The headwaters of Willow Creek

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were logged extensively in the 50's and 60's. There are a lot of old roads (closed now) and natural landslides. There are lots of natural sediment sources up high." Arapaho National Forest owns a large portion of the site, although a few private parcels exist below Cabin Creek and along a one mile section of Willow Creek near Bronco and Pass creeks. The mainstem and many of its major tributaries have roads along the drainage. Aside from Hwy 125, these roads are primarily recreation roads. A few pack trails are scattered throughout. Two Forest Service campgrounds are maintained along the main stem. Fishing is a popular sport throughout the area. Placer mining has taken place along Bronco Creek during the early part of the century, but no mining operation is taking place currently.

Natural Hazard Comments

No Data

Exotics Comments

Invasions from non-native species should be monitored and controlled.

Offsite

Off-site considerations include logging of adjacent forests, road maintenance and development, and impacts from recreational uses such as OHV use and camping along drainages.

Information Needs

The site should be visited during the summer months to assess all of the riparian communities along the tributaries of Willow Creek.

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>
24930	<i>Artemisia cana</i> ssp. <i>viscidula</i> / <i>Festuca thurberi</i> Shrubland	Western Slope Sagebrush Shrublands	G2G3	S2S3	Yes
24518	<i>Picea pungens</i> / <i>Alnus incana</i> Woodland	Montane Riparian Forests	G3	S3	No
40532	<i>Salix wolfii</i> / <i>Calamagrostis canadensis</i> Shrubland	Subalpine Riparian Willow Carr	G3	S2S3	No
18707	<i>Cylactis arctica</i> ssp. <i>acaulis</i>	nagoon berry	G5T5	S1	No
24470	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i> / <i>Pseudoroegneria spicata</i> Shrub Herbaceous Vegetation	Xeric Sagebrush Shrublands	G4	S3?	No
24514	<i>Salix monticola</i> / <i>Calamagrostis canadensis</i> Shrubland	Montane Willow Carr	G3	S3	No
18707	<i>Cylactis arctica</i> ssp. <i>acaulis</i>	nagoon berry	G5T5	S1	No

REFERENCES

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<u>Reference ID</u>	<u>Full Citation</u>
160903	Carsey, K., D. Cooper, K. Decker, D. Culver, and G. Kittel. 2003. Statewide wetlands classification and characterization: Wetland plant associations of Colorado. Prepared for Colorado Department of Natural Resources, Denver, CO by Colorado Natural Heritage Program, Fort Collins, CO.
193632	Culver, D.R. and Jones, J.R. 2006. Final Report: Survey of Critical Biological Resources in Grand County. Colorado Natural Heritage Program, Fort Collins, CO.
160140	Dorn, R. D. 1997. Rocky Mountain Region Willow Identification Field Guide. Renewable Resources R2-RR-97-01. Denver, CO: USDA, Forest Service, Rocky Mountain Region. 107p.
167224	Hurd, E.G., N.L. Shaw, J. Mastroguiseppe, L.C. Smithman, and S. Goodrich. 1998. Field Guide to Intermountain Sedges. U.S. Department of Agriculture, Rocky Mountain Research Station, Ogden, UT.
184698	Southern Rockies Ecosystem Project. 2000. The State of the Southern Rockies Ecoregion. A Report by the Southern Rockies Ecosystem Project. Nederland, CO.
184701	Sumerlin, Doreen. 2003. Personal communication with Doreen Sumerlin, biologist with the Sulphur Ranger District, Arapaho-Roosevelt National Forests and Pawnee National Grassland, Granby, 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.
193553	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (http://plants.usda.gov). Data compiled from various sources by Mark W. Skinner. National Plant Data Center < http://npdc.usda.gov/ >, Baton Rouge, LA 70874-4490 USA. Accessed 2005.
172684	Weber, W.A. and R.C. Wittmann. 2001. Colorado Flora: Western Slope, Third Edition. University Press of Colorado, Niwot, CO.

ADDITIONAL TOPICS

Additional Topics

Transcription updated by Rocchio, F.J. 2004-04-06. [Rocchio 2004:] In response to recently renewed analysis by the U.S. Forest Service in 2003, the Colorado Natural Heritage Program (CNHP) was contracted to conduct the following in the analysis area: (1) Identify areas within the analysis area surveyed by CNHP during current and past project efforts; (2) Description of CNHP's past projects in the area; (3) Data interpretation and results overview; (4) Discussion of the importance of the riparian systems within a watershed, state, and regional context; (5) Discussion of the Willow Creek Pass Potential Conservation Area; (6) Management recommendations; (7) Identify data gaps where additional field surveys could help assess the biological significance of the analysis area; (8) Recommendations of any additional field surveys, which could assist management decisions. [Rondeau 1995:] In 1993, the Colorado Natural Heritage riparian team surveyed parts of the Willow Creek watershed, setting up vegetative plots along Trout, Bronco, and Willow Creeks, Sawmill Gulch, and an unnamed tributary (Kittel et al. 1994).

VERSION

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Version Author Jones, J.R.

Disclaimer

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These data are a product and property of Colorado State University, Colorado Natural Heritage Program (CNHP). These data are strictly "on loan" and should be considered "works in progress". Data maintained in the Colorado Natural Heritage Program database are an integral part of ongoing research at CSU and reflect the observations of many scientists, institutions and our current state of knowledge. These data are acquired from various sources, with varying levels of accuracy, and are continually being updated and revised. Many areas have never been surveyed and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. These data should not be regarded as a substitute for on-site surveys required for environmental assessments. Absence of evidence is NOT evidence of absence. Absence of any data does not mean that other resources of special concern do not occur, but rather CNHP files do not currently contain information to document this presence. CNHP is not responsible for whether other, non-CNHP data providers have secured landowner permission for data collected.

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