Level 4 Potential Conservation Area (PCA) Report

Name Macy Gulch **Site Code** S.USCOHP*28181

IDENTIFIERS

Site ID 2713 **Site Class** PCA

Site Alias None

Network of Conservation Areas (NCA)

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

LOCATORS

Nation United States **Latitude** 394844N

State Colorado **Longitude** 1052754W

Quad Code	Quad Name
39105-G4	Black Hawk

County

Gilpin (CO)

Watershed Code	Watershed Name
10190004	Clear

SITE DESCRIPTION

Minimum Elevation	8,500.00	**Feet**	2,590.80	**Meters**
Maximum Elevation	9,600.00	**Feet**	2,926.08	**Meters**

Site Description

Landscapes in this part of Gilpin County were not glaciated during the last ice age and boast gently rounded hills and broad valleys. This landscape is complex, with a mosaic of habitats responding to differences in slope, aspect, soil moisture, and topographic position. Ponderosa forests occur on ridge tops and southwest-facing slopes. Northeast-facing slopes support mixed coniferous and deciduous forests of aspen, Engelmann spruce and lodgepole pine. Drier hillslopes and swales support grasslands and meadows. A variety of wetland types occupy valley bottoms, swales, low-gradient slopes, and solifluction terraces. Valley bottoms host a mosaic of riparian forest, willow (*Salix* spp.) shrubland, and herbaceous wet meadows. Riparian forests are characterized by aspen (*Populus tremuloides*) / tall forb woodlands. Willow shrubs include mountain willow / bluejoint reedgrass (*Salix monticola / Calamagrostis canadensis*) and mountain willow / mesic forbs. Slope wetlands and swales are characterized by mesic graminoids and mesic forbs including water sedge (*Carex aquatilis*) and arctic rush (*Juncus balticus*). Many of the upland hillslopes have a low gradient (2-4%) and shallow groundwater discharge has resulted in soil slumping and the formation of solifluction terraces where small wetland fens have developed. Uplands have been impacted by grazing, fire suppression, and logging. Historically, ponderosa stands were likely more open and widely spaced than they are currently, with large areas dominated by grasses (Veblen and Lorenz 1991). Valley bottoms and meadows were homesteaded and developed for agriculture and ranching with consequent changes in vegetation composition and structure. Together, upland and wetland habitat alteration has likely contributed to changes in the hydrologic regime. This complex mosaic of habitats creates a diversity of breeding habitats for birds. Observed upland and riparian breeding birds include Broad-tailed Hummingbird (*Selasphorus platycercus*), Williamson's Sapsucker (*Sphyrapicus thyroideus*), Northern Flicker (*Colaptes auratus*), Hairy Woodpecker (*Picoides villosus*), Red-naped Sapsucker (*Sphyrapicus ruber*), Olive-sided Flycatcher (*Contopus cooperi*), Western Wood-Peewee (*Contopus sofdidulus*), Cordilleran Flycatcher (*Empidonax occidentalis*), Warbling Vireo (*Vireo gilvus*), Plumbeous Vireo (*Vireo plumbeus*), House Wren (*Troglodytes aedon*), Tree Swallow (*Tachycineta bicolor*), Mountain Chickadee (*Poecile gambeli*), Pygmy Nuthatch (*Sitta pygmaea*), Red-breasted Nuthatch (*Sitta canadensis*), Ruby-crowned Kinglet (*Regulus calendula*), Mountain Bluebird (*Sialia currucoides*), Western Bluebird (*Sialia mexicana*), Townsend's Solitaire (*Myadestes townsendi*), American Robin (*Turdus migratorius*), Stellar's Jay (*Cyanocitta stelleri*), Yellow-rumped Warbler (*Dendroica coronata*), Vespers Sparrow (*Pooecetes gramineus*), White-crowned Sparrow (*Zonotrichia leucophrys*), Lincoln's Sparrow (*Melospiza lincolnii*), Black-headed Grosbeak (*Pheuticus melanocephalus*), Western Tanager (*Piranga ludoviciana*), Chipping Sparrow (*Spizella passerine*), Dark-eyed Junco (*Junco hyemalis*), Cassin's Finch (*Carpodacus cassinii*), and Pine Siskin (*Carduelis pinus*). Geology is primarily composed of Precambrian age metamorphic rock that is derived principally from sedimentary rock (Tweto 1979). Riparian soils are classified as Kittredge-Guanella complex, 9 to 30 percent slopes. The Kittredge component occurs on alluvial fans while the Guanella component is on mountain slopes. Both are well drained and do not meet hydric criteria. Upland hillslopes are of primarily two types; Resort-Cathedral-Rubble land complex, 30 to 60

percent slopes and Ohman-Legault very gravelly sandy loams, 30 to 60 percent slopes. Each of the upland soil types are well drained or somewhat excessively well drained (USDA 2010). Wetland hydrology in this site is dependent on shallow surface flow. Riparian wetlands have developed where the valley gradient decreases and abundant shallow ground and surface water discharge enables the development of wetland vegetation. Eventually, with the accumulation of flow and an increase in valley gradient, stream channels have formed that drain the valleys. Stream banks in these valleys are typically well-vegetated with high quality riparian plant species, and banks are stable. Although the natural hydrologic regime has been altered by historic grazing and agricultural development these activities have ceased in the Park and vegetation as well as the hydrologic regime appears to be recovering.

Key Environmental Factors

Hydrology, including surface and groundwater flow and annual out-of-bank flows are key environmental factors essential to the maintenance of these montane riparian ecological systems (Rondeau, 2001). These riparian systems evolved with and are highly dependent on beaver (*Castor canadensis*) activity to sustain them (Rondeau, 2001). Beaver activity is integral to enhancing out-of-bank flows, recharging groundwater, and raising the water table to enable maintenance of wetland and stream systems. Recent beaver activity was absent from this site.

Climate Description

Climate in Gilpin County varies dramatically with elevation, aspect, and time of year. Higher elevations to the north and west are colder and wetter than lower elevations to the east and south. Temperature and precipitation varies from east to west corresponding to elevation change. Average annual temperature and length of the growing season decrease as elevation increases while average annual precipitation increases. In general, temperatures decrease at a rate of approximately 3 degrees F for every thousand feet of elevation gain. Additionally, the pattern of precipitation distribution varies from the eastern to the western parts of the county. Western locations at higher elevations receive the majority of their precipitation during late winter and early spring while eastern locations receive the majority of their moisture during early spring and summer (Siemer 1977). At lower elevation eastern locations the months of April through August are typically the wettest months and July and August the warmest while December, January, and February are typically the coldest and driest months. At this site average annual precipitation from 1971 through 2000 was 20.11 inches with April (2.53 in.), May (2.99 in.), June (2.20 in.) and July (2.45 in.) the wettest months; January (0.66 in) and February (0.74 in.) were the driest months. Coldest temperatures occurred in January with an average maximum temperature of 33.30 °F and an average minimum of 14.74 °F; warmest temperatures occurred in July with an average maximum of 73.45 °F and an average minimum of 47.01 °F (Prism 2010).

Land Use History

The discovery of gold brought rapid population growth to Gilpin County, which initiated logging, agricultural development, and grazing in areas that were not mined, such as this site. By the end of the 1890's most of the mountains in and around the mining communities and camps were denuded of trees (Petersen and Borchert 2010) and valley bottoms, especially riparian habitat and wetlands were cleared, drained, and developed for agriculture. This site is located in Green Ranch in Golden Gate State Park which was historically ranched.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes **Mapped Date** 11/29/2010

Designer Malone, D.G.

Boundary Justification

The boundary includes ecological systems and processes that are essential to maintaining the community as well as to provide a buffer against disturbance. Climate change was also considered in boundary delineation. Abundant shallow groundwater discharge and surface water flow is essential to the sustainability of these wetlands; thus, a large area with intact upland vegetation is critical to adequate ground and surface water flow in wetland and stream habitat.

Primary Area 1,213.84 **Acres** 491.22 **Hectares**

SITE SIGNIFICANCE

Biodiversity Significance Rank B4: Moderate Biodiversity Significance

Biodiversity Significance Comments

This site is drawn for a fair (C-ranked) occurrence of the globally vulnerable (G3/S3) mountain willow / bluejoint reedgrass (*Salix monticola / Calamagrostis canadensis)* shrubland.

Level 4 Potential Conservation Area (PCA) Report

Name Macy Gulch **Site Code** S.USCOHP*28181

Other Values Rank No Data

Other Values Comments

Additionally present is an independent source feature of the state vulnerable (G4/S3) mountain willow / mesic forbs (*S. monticola /* mesic forbs) shrubland. This occurrence did not meet minimum qualifications to be placed as an element occurrence in the database.

LAND MANAGMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

Alien plant species are common throughout the site and include *Poa pratensis, Phleum pratense, Agrostis gigantea, Trifolium pratense, Cirsium arvense, Carduus acanthoides, Taraxacum officinale, Linaria vulgaris, Cynoglossum officinale, Dipsacus fullonum, Bromus inermis,* and *Rumex crispus.*

Exotics Comments

No Data

Offsite

No Data

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
24514	*Salix monticola / Calamagrostis canadensis* Shrubland	Montane Willow Carr	G3	S3	Yes

REFERENCES

Reference ID	Full Citation
198644	Colorado Water Conservation Board (CWCB) (Web Page). Accessed 2010. Climate Change in Colorado: A Synthesis to Support Water Resources Management and Adaptation. http://cwcb.state.co.us/
198646	Gilpin County (Web Page). Accessed 2010. Gilpin County Office of the Assessor. http://co.gilpin.co.us/assessor.
198653	Petersen, M. and J. Borchert (Web Page). Accessed 2010. Soil Survey of Georgetown Area, Colorado, Parts of Clear Creek, Gilpin, and Park Counties. U.S. Department of Agriculture, Natural Resources Conservation Service. http://soils.usda.gov/survey/printed surveys
198649	Prism Climate Group (Web Page). Accessed 2010. Spatial Climate Analysis. htttp://www.prism.oregonstate.edu/
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.
198318	Siemer, E. 1977. Colorado Climate. Colorado Experiment Station, Colorado State University.
198683	Stevens, J. E., D.R. Culver and D.G. Malone. 2011. CNHP Final Report: Survey of Critical Biological Resources in Gilpin County, Colorado. Colorado Natural Heritage Program, Fort Collins, 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.
198651	U.S. Department of Agriculture (Web Page). Accessed 2010. Natural Resource Conservation Service, Soil Data Mart. http://soils.usda.gov/survey/
198277	Veblen, T.T. and Lorenz, D.C. 1991. The Colorado Front Range: A Century of Ecological Change. University of Utah Press, Salt Lake City, UT.

ADDITIONAL TOPICS

Additional Topics

No Data

Level 4 Potential Conservation Area (PCA) Report

Name Macy Gulch **Site Code** S.USCOHP*28181

VERSION

Version Date 11/29/2010

Version Author Malone, D.G.

Disclaimer

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.

These data are provided for non-commercial purposes only. Under no circumstances are data to be distributed in any fashion to outside parties. To ensure accurate application of data, tabular and narrative components must be evaluated in conjunction with spatial components. Failure to do so constitutes a misuse of the data. The Colorado Natural Heritage Program shall have no liability or responsibility to the data users, or any other person or entity with respect to liability, loss, or damage caused or alleged to be caused directly or indirectly by the data, including but not limited to any interruption of service, loss of business, anticipatory profits or indirect, special, or consequential damages resulting from the use of operation of the data. Data users hereby agree to hold CNHP, Colorado State University, and the State of Colorado harmless from any claim, demand, cause of action, loss, damage or expense from or related to data users use of or reliance on the data, regardless of the cause or nature thereof, and even in the event that such cause is attributable to the negligence or misconduct of CNHP.

These data are provided on an as-is basis, as-available basis without warranties of any kind, expressed or implied, INCLUDING (BUT NOT LIMITED TO) WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. Although CNHP maintains high standards of data quality control, CNHP, Colorado State University, and the State of Colorado further expressly disclaim any warranty that the data are error-free or current as of the date supplied