

# Level 4 Potential Conservation Area (PCA) Report

Name Buckles Lake

Site Code S.USCOHP\*9476

## IDENTIFIERS

Site ID 974 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 370821N  
 State Colorado Longitude 1064825W

Quad Code Quad Name  
 37106-B7 Harris Lake

County  
 Archuleta (CO)

Watershed Code Watershed Name  
 14080101 Upper San Juan

## SITE DESCRIPTION

Minimum Elevation	9,500.00 Feet	2,896.00 Meters
Maximum Elevation	9,640.00 Feet	2,938.27 Meters

### Site Description

Buckles Lake is a hydrologically manipulated lake in the southeast portion of Archuleta County, on the west slope of the Chalk Mountains. The site is mostly within the San Juan National Forest, with a portion of the north boundary privately owned. The South San Juan Wilderness boundary begins approximately one mile east of Buckles Lake and encompasses much of the watershed for the lake and its tributaries. The lake is located in a natural basin below and to the northwest of V Mountain. Runoff from numerous small drainages of the Chalk Mountains supplies water to the basin and Buckles Lake. The lake's main outlet drains through an earthen berm to the northwest, eventually joining with Big Branch Creek, a tributary to the Rio Blanco. In addition, an irrigation structure in the berm diverts an unknown percentage of the outflow to a secondary outlet (irrigation ditch), which drains directly to Harris Lake downstream. Both lakes were enhanced many years ago and are well established and support extensive native wetland and riparian plant associations. The geomorphology of the Chalk Mountains area includes landslide deposits and generally slumpy, stepped topography which often results in groundwater discharge, and therefore creates many small ponds, lakes, drainages, wetlands and several fens. These water bodies subsequently support an extraordinarily rich and diverse mosaic of wetland and riparian habitats. The western slopes of the Chalk Mountains typically have steep slopes, a dense, mature *Picea* spp.-*Abies* spp.-*Populus tremuloides* forest, and large rockslides and outcrops. An abundance of birds and insects occupy the basin and a trail skirts Buckles Lake on its west side. A forest service road ends within one-quarter mile of the lake and recreational use by hikers, fisherman and hunters in the basin is high. Blanco Tunnel, a major US Bureau of Reclamation subterranean water diversion in the area built in the late 1960's as part of the San Juan-Chama Project to divert water from the San Juan River Basin across the Continental Divide and into the Rio Grande River Basin (USDI no date), is mapped within the western boundary of the site, but no surficial impacts to the area were noted. A number of uncommon wetland and riparian communities are found within the site, including two types of montane wet meadow plant communities, the water sedge - beaked sedge (*Carex aquatilis* - *Carex utriculata*) montane wet meadow and white marsh marigold (*Caltha leptosepala*) montane wet meadow. Also occurring here are two examples of a park willow / mesic graminoid (*Salix monticola* / mesic graminoid) montane riparian willow carr. In moderately broad meadow opening east of Buckles Lake, an unnamed spring-fed tributary to the lake flows and supports a small, open-canopy willow carr dominated by park willow (*Salix monticola*) and Geyer's willow (*Salix geyeriana*), with a vigorous herbaceous graminoid understory and saturated to inundated soils. Kentucky bluegrass (*Poa pratensis*) and water sedge (*Carex aquatilis*) dominate the herbaceous layer, and the fringes of the wet meadow are occupied by shrubby cinquefoil (*Dasiphora floribunda*) and mixed graminoids such as Kentucky bluegrass and ebony sedge (*Carex ebenea*). Several rivulets run through the community, converging into one channel toward the downstream end of the community. Beaver may have historically influenced the area, but there is no current sign of active beaver. At the south end of Buckles Lake, a large, open wetland supports a mosaic of hydrophytic and mesic graminoids and forbs, punctuated by patches of willows (*Salix* spp.). Park willow and diamondleaf willow (*Salix planifolia*) occur in large, dense

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stands on the south and east edges of the wetland, in a narrow fringe on the west edge, and extending as a "finger" north through the center of the polygon toward but not reaching the edge of the open water. The more mesic edges, especially on the east and south edge, support good stands of thinleaf alder (*Alnus incana*). The dominant graminoids in the understory and within the open herbaceous stands are beaked sedge (*Carex utriculata*) and water sedge. Co-dominating with the sedge stands in slightly higher, less saturated soils are large patches of white marsh marigold (*Caltha leptosepala*). The herbaceous layer is minimally diverse, with these three species constituting the majority of the cover. The entire wetland is on a very slight grade, rising slowly from the edge of the open water at Buckles Lake south to the edge of the coniferous forest and beyond, providing a continuum of soil saturation levels from inundated at the edge of the open water, to moist or even dry at the southern-most, upper-most end of the wetland.

## Key Environmental Factors

A large portion of the geology on the west slopes of the Chalk Mountains, including the area within the site, is mapped as Landslide Deposits (Tweto 1979), which includes areas of thick colluvial deposits. This geology seems to predispose the area to having a stepped or hummocky microtopography where the groundwater table often is intercepted, forming many small pocket lakes and ponds. Soils are mostly Castelleia loams, moderately deep and well-drained, but often limited by an underlying layer of impervious shale or sandstone. Pockets of Histic Cryaquepts occur frequently within the Castelleia matrix (USDA 1981), which appear to be directly related to locations of ponds, wetlands and fens, and correlates with the wetland communities within this site. A large pocket of Hunchback clay loams, which are deep, poorly drained and occurring on fans and toe slopes, occurs on the east side of Buckles Lake and supports a park willow (*Salix monticola*) montane riparian willow carr (USDA 1981).

## Climate Description

No Data

## Land Use History

No Data

## Cultural Features

No Data

## SITE DESIGN

Site Map Y - Yes

Mapped Date 11/23/2005

Designer Freeman, K.M.

## Boundary Justification

The boundary incorporates an area that will allow natural hydrological processes such as seasonal flooding, sediment deposition, and new channel formation to maintain a viable population of the wetland and riparian communities within the site. It includes the privately maintained earthen dam critical to providing adequate water levels in the lake to support the associated hydrophytic communities. The boundary also provides a small buffer from nearby trails and roads where surface runoff may contribute excess nutrients and sediment. It should be noted that the hydrological processes necessary to the elements are not fully contained by the site boundaries. Given that the elements are dependent on natural hydrological processes associated with runoff from the Chalk Mountains, activities such as water diversions, impoundments, and improper livestock grazing within riparian areas and along the wetland are detrimental to the hydrology within the site. This boundary indicates the minimum area that should be considered for any conservation management plan.

Primary Area 123.41 Acres

49.94 Hectares

## SITE SIGNIFICANCE

Biodiversity Significance Rank B4: Moderate Biodiversity Significance

## Biodiversity Significance Comments

The Buckles Lake site contains a fair (C-ranked) occurrence of a park willow / mesic graminoid (*Salix monticola* / mesic graminoid) montane riparian willow carr wetland community that is globally vulnerable (G3/S3), a riparian plant community frequently occurring in areas of flooding or beaver activity. There are also fair (C-ranked) occurrences of a water sedge - beaked sedge (*Carex aquatilis* - *Carex utriculata*) montane wet meadow community and a white marsh marigold (*Caltha leptosepala*) montane wet meadow community, both of which are globally apparently secure (G4/S4).

Other Values Rank No Data

## Other Values Comments

No Data

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## LAND MANAGEMENT ISSUES

### Land Use Comments

No Data

### Natural Hazard Comments

No Data

### Exotics Comments

Exotic species are not dominant within the wetland, but include frequent Kentucky bluegrass and patches of Canada thistle (*Cirsium arvense*).

### 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>
24955	<i>Carex aquatilis</i> - <i>Carex utriculata</i> Herbaceous Vegetation	Montane Wet Meadows	G4	S4	No
16989	<i>Caltha leptosepala</i> Herbaceous Vegetation	Montane Wet Meadows	G4	S4	No
24585	<i>Salix monticola</i> / Mesic Graminoids Shrubland	Montane Riparian Willow Carr	G3	S3	No
24585	<i>Salix monticola</i> / Mesic Graminoids Shrubland	Montane Riparian Willow Carr	G3	S3	No
24585	<i>Salix monticola</i> / Mesic Graminoids Shrubland	Montane Riparian Willow Carr	G3	S3	Yes

## REFERENCES

<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.
193633	Freeman, K.M., March, M.A. and D.R. Culver. 2006. Final Report: Survey of Critical Wetlands and Riparian Areas in Archuleta County. Colorado Natural Heritage Program, Fort Collins, CO.
170844	Randolph, D., Smith, Kettler, Redders, Roy, and Aitken. 1994. San Juan National Forest Riparian Site Survey.
193472	Sovell, J., P. Lyon, and L. Grunau. 2003. Final Report: Upper San Juan Biological Assessment. 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.
193423	USDA, SCS. 1981. Soil Survey of Piedra Area, Colorado; Parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande Counties. In cooperation with the United States Forest Service and the Colorado Agricultural Experiment Station.
193558	USDI, Bureau of Reclamation. No date. Dams, Projects and Powerplants: San Juan-Chama Project, Colorado and New Mexico. << <a href="http://www.usbr.gov/dataweb/html/sjuanchama.html#general">http://www.usbr.gov/dataweb/html/sjuanchama.html#general</a> >>. Accessed 18 Nov 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

Original site design by Kettler, S.M. 1997-06-10.

## VERSION

<b>Version Date</b>	11/23/2005
<b>Version Author</b>	Freeman, K.M.

## Disclaimer

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