

# Level 4 Potential Conservation Area (PCA) Report

Name Lake Albion

Site Code S.USCOHP\*27226

## IDENTIFIERS

Site ID 2500 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 400258N  
 State Colorado Longitude 1053654W

<u>Quad Code</u>	<u>Quad Name</u>
40105-A6	Monarch Lake
40105-A5	Ward

## County

Grand (CO)  
 Boulder (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
10190005	St. Vrain
14010001	Colorado headwaters

## SITE DESCRIPTION

Minimum Elevation - Feet - Meters  
 Maximum Elevation - Feet - Meters

## Site Description

The Lake Albion site is located at the western edge of Boulder County, just south of Niwot Ridge. From its beginning at the Continental Divide west of the town of Boulder, Niwot Ridge extends eastward some 3.7 miles (6 km) to its terminus at Niwot Mountain. In the east-facing glacial valley on the south side of this prominent alpine ridge, a series of paternoster lakes linked by a small stream descends from Arikaree Glacier at the valley head. The five Green Lakes and Lake Albion, together with the Arapahoe Glacier and the chain of lakes above Silver Lake in the adjoining valley to the south, form the headwaters of North Boulder Creek. A prominent glaciated step separates the upper two Green Lakes from the lower lakes. The site is essentially a high alpine valley, with subalpine forest only at its lower, eastern end. At the upper end, the valley is bounded by aretes between glaciated cirques and the horn of Kiowa Peak. A rock glacier is located at the base of the north-facing side of Kiowa Peak. The upper basin is dominated by steep rock walls and talus slopes, numerous permanent snowpatches, and a valley floor of glaciated bedrock (Caine 1995). This area is almost completely devoid of vegetation, with the exception of the startling green wetlands between the upper lakes. This community is dominated by low (<0.5 m) diamondleaf willow (*Salix planifolia*) over dense tufts of Rocky Mountain sedge (*Carex scopulorum*). Associated wetland species are clustered around pools and streamlets that flow among the rocky substrate. Major associated species include white marsh marigold (*Caltha leptosepala*), redpod stonecrop (*Rhodiola* [*Clementsia*] *rhodantha*), alpine bistort (*Polygonum viviparum*), and American bistort (*Polygonum bistortoides*). The lower basin, bounded by the slopes of Niwot Ridge to the north and Mount Albion to the south, is the site of the former mining camp of Albion; here both soils and vegetation are more well developed. The lower portions of the site (below Lake Albion) support subalpine wetlands and a small tract of spruce - fir forest on the south-facing slopes of Niwot Ridge. Here wetland vegetation is dominated by low shrubs, primarily diamondleaf willow and bog birch (*Betula glandulosa*), with open sedge patches. Most of the wetland has organic soil >40 cm, which makes it a fen, but the edges have mineral soil. In areas where the soil is not organic, diamondleaf willow is very dense and the understory is dominated by bluejoint reedgrass (*Calamagrostis canadensis*) and many tall forbs. In the center of the wetland, diamondleaf willow and bog birch occur with more open cover over water sedge (*Carex aquatilis*), rock sedge (*Carex saxatilis*), fewflower spikerush (*Eleocharis quinqueflora*) and a dense moss layer. Typical fen species redpod stonecrop, elephanthead (*Pedicularis groenlandica*), star gentian (*Swertia perennis*), and white marsh marigold are all present. Moss species include *Sphagnum russowii*, *Aulacomnium palustre*, *Drepanocladus aduncus*, *Tomenthypnum nitens*, *Polytrichum commune*, and *Climacium dendroides*. The ground surface is very hummocky, providing a mosaic of microtopographic and hydrologic settings for a diverse array of plants. The site extends to a section of wetland separated by a dirt road. This section contains

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a dense patch of bog sedge (*Carex microglochin*) and cottongrass (*Eriophorum angustifolium*) surrounded by low willows.

## Key Environmental Factors

Though North Boulder Creek runs through the valley, the wetland is permanently saturated by groundwater discharge and snowmelt from the surrounding slopes that eventually drain into the creek. The wetland is not strongly associated with overflow from the active creek channel, and is not a true riparian area. Instead, it is a sloping fen with organic soil formed over hundreds and thousands of years.

## Climate Description

No Data

## Land Use History

The site of the former mining camp of Albion has a history of anthropogenic disturbance. Several small dams are located in the watershed, and an unpaved access road leads to the lower lakes and Lake Albion is dammed. The site is now off limits to public access and is preserved by the City of Boulder as part of its drinking water supply. The only people allowed in the watershed are City of Boulder employees and researchers from the University of Colorado's Mountain Research Station. The site is part of a National Science Foundation Long-Term Ecological Research site (along with Niwot Ridge).

## Cultural Features

No Data

### SITE DESIGN

Site Map Y - Yes

Mapped Date 06/10/2008

Designer Decker, K.L. and J.M. Lemly

## Boundary Justification

The boundary includes the entire watershed of the Green Lakes / Lake Albion valley, from the Continental Divide down to the point where the slopes of Albion and Niwot Ridge form the lower "lip" of the valley. This area is believed to be sufficient to allow the operation of normal hydrological and ecological processes that support the wetland communities, and provide a buffer against direct disturbance.

Primary Area 1,880.36 Acres

760.96 Hectares

### SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

## Biodiversity Significance Comments

This site supports an excellent (A-ranked) occurrence of the globally vulnerable (G3?/S3?) Colorado wood-rush (*Luzula subcapitata*); a Colorado endemic, and an excellent (A-ranked) occurrence of the globally vulnerable (G3G4/SNR) *Juncus parryi* / *Sibbaldia procumbens* herbaceous vegetation. In addition, there are high quality examples of two globally common riparian communities, *Salix planifolia* / *Carex scopulorum* and *Salix planifolia* / *Carex aquatilis*, and an extant occurrence of the state rare (G5/S2) snow grass (*Phippisia algida*). There are also historical records of the arctic draba (*Draba fladnizensis* G4/S2S3) and tundra saxifrage (*Muscaria monticola* G5T5/S1) within the vicinity of this site.

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

No Data

## Offsite

No Data

## Information Needs

There are historical records of the rare Rocky Mountain columbine (*Aquilegia saximontana*) and clawless draba (*Draba exungiculata*) from the 1970s. Further field surveys could locate these plants.

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## 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>
24850	<i>Salix planifolia</i> / <i>Carex aquatilis</i> Shrubland	Subalpine Riparian Willow Carr	G5	S4	No
24617	<i>Salix planifolia</i> / <i>Carex scopulorum</i> Shrubland	Subalpine Riparian Willow Carr	G4	S4	No
40676	<i>Juncus parryi</i> / <i>Sibbaldia procumbens</i> Herbaceous Vegetation		G3G4	SNR	Yes
16728	<i>Luzula subcapitata</i>	Colorado wood-rush	G3?	S3?	Yes
20244	<i>Phippsia algida</i>	snow grass	G5	S2	No

## REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
195204	Caine, N. 1995. Snowpack influences on geomorphic processes in Green Lakes Valley, Colorado Front Range. <i>Geographical Journal</i> 161:55-68.
195190	Neid, S., J. Lemly, K. Decker and D. Culver. 2009. Final Report: Survey of Critical Biological Resources in Boulder County 2007-2008. Colorado Natural Heritage Program, Fort Collins, CO.

## ADDITIONAL TOPICS

### Additional Topics

No Data

## VERSION

Version Date 06/10/2008

Version Author Decker, K.L. and J.M. Lemly

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