

Level 4 Potential Conservation Area (PCA) Report

Name Mount Princeton

Site Code S.USCOHP*5022

IDENTIFIERS

Site ID 231 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 384329N
State Colorado Longitude 1061323W

<u>Quad Code</u>	<u>Quad Name</u>
38106-F2	Mount Antero
38106-F3	Saint Elmo

County

Chaffee (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
11020001	Arkansas Headwaters

SITE DESCRIPTION

Minimum Elevation	8,500.00 Feet	2,590.80 Meters
Maximum Elevation	13,000.00 Feet	3,962.40 Meters

Site Description

Mount Princeton is a Colorado Fourteener (14,197 ft.) that is a prominent mountain west of Nathrop and is part of the southern extension of the Collegiate Peaks. Mount Princeton is part of a large batholith emplaced in the Sawatch Range during middle Tertiary time (Chronic and Williams 2002, Karnuta 1995). The rock that forms Mount Princeton is a quartz monzonite composed of several metamorphic rocks e.g., white plagioclase, pink orthoclase, biotite, hornblende and quartz (Karnuta 1995). Along Chalk Creek, the quartz monzonite has been altered by geothermal water producing the Chalk Cliffs, located at the base of Mount Princeton. The south-facing slopes of Mount Princeton are representative of the bristlecone pine (*Pinus aristata*) forest that is found scattered throughout the Collegiate Peaks from 10,000-12,250 feet elevation, just below timberline, on moderate to steep slopes on south and east-facing aspects. The bristlecone pine forest is characterized as harsh and xeric, with desiccating winds and broadly fluctuating temperatures. Soils are derived primarily from granitic parent materials. There are minimally developed Typic Cryorthents: shallow, coarse-textured (sandy loams), and with rocks on the surface. Bristlecone pine dominates the tree cover with an average 40-50% cover. Engelmann spruce (*Picea engelmannii*), limber pine (*Pinus flexilis*), and subalpine fir (*Abies lasiocarpa*) are also present. The shrub layer is dominated by common juniper (*Juniperus communis*) with scattered bearberry (*Arctostaphylos uva-ursi*) and grouse whortleberry (*Vaccinium scoparium*). The herbaceous understory layer is moderately sparse, with total cover averaging <20%. The perennial forb alpine clover (*Trifolium dasyphyllum*) clearly dominates, with 10-12% cover. The remaining herbaceous species are a mix of perennial graminoids and forbs. Important species include the graminoids purple reedgrass (*Calamagrostis purpurascens*), dry spike sedge (*Carex siccata*), sheep fescue (*Festuca brachyphylla*), and spike trisetum (*Trisetum spicatum*), and the forbs matted saxifraga (*Saxifraga bronchialis* ssp. *austromontana*), Fendler's sandwort (*Arenaria fendleri*), Whipple's beardstonge (*Penstemon whippleanus*), Jacob's ladder (*Polemonium pulcherrimum* ssp. *delicatum*), stonecrop (*Sedum stenopetalum*), and goldenweed (*Solidago simplex*). A Black Swift (*Cypseloides niger*) colony occurs within the site at Agnes Vail Falls in Cascade Canyon.

Key Environmental Factors

Elevation ranges from 8,500 ft to 13,000 ft. Presence of Clark's Nutcrackers and pine squirrels are important for seed dispersal.

Climate Description

Typical subalpine to alpine climate, intense solar exposure, dry with desiccating winds.

Land Use History

The Lucky Mine, located within the site, was originally called the Hortense Mine and was discovered in 1876. It is located on the side of Mt. Princeton in Chaffee County, Colorado. Nearby is the Hortense Spring, the warmest hot springs in Colorado. The Hortense and Mount Princeton Toll Road led up the mountain to the mine (Denver Public Library Web 2009). This road is still maintained for access to radio towers.

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Cultural Features

There is the Bristlecone Park Chalet managed by Young Life Church Group.

SITE DESIGN

Site Map Y - Yes

Mapped Date 01/12/2009

Designer Culver, D.R.

Boundary Justification

The boundary encompasses the occurrence and much of the lower slopes. The boundary is intended to protect the bristlecone pine forest and provide some buffer to allow fire to occur more naturally. It does not incorporate all large scale ecological processes.

Primary Area 3,052.28 Acres 1,235.22 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

Rank is based on a good (B-ranked) occurrence of a globally imperiled (G2/S2) bristlecone pine community (*Pinus aristata* / *Trifolium dasyphyllum*). This site represents one of the best examples in Colorado of this ancient woodland. It is large enough to ensure that ecological processes, e.g., fire, snow avalanches, and Clark's Nutcrackers seed dispersal and germination are present to remain viable.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

There is a two track road that leads up to radio towers and a shelter.

Natural Hazard Comments

No Data

Exotics Comments

None observed.

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>
24835	<i>Pinus aristata</i> / <i>Trifolium dasyphyllum</i> Woodland	Upper Montane Woodlands	G2	S2	Yes

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
198295	Chronic, H. and F. Williams. 2002. Roadside Geology of Colorado. Second Edition. Mountain Press Publishing Company. Missoula, MT.
198290	Culver, D.R., D. Malone, S.L. Neid, and J. Handwerk. 2009. Final Report: Survey of Critical Biological Resources in Chaffee County. Colorado Natural Heritage Program, Fort Collins, CO.
198296	Denver Public Library. 2009. Online at http://denverlibrary.org .
198293	Karnuta, T. 1995. Road and Riverside Geology of the Upper Arkansas Valley. Geotechnics. Salida, CO.
165206	Ranne, B. M., and W. L. Baker. 1995. Potential Natural Research Areas for bristlecone pine (<i>Pinus aristata</i> Engelm.) forests in Colorado. Unpublished report prepared for the U.S. Forest Service - Rocky Mountain forest and Range Experiment Station, Ft. Collins, CO. 23 pp.

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ADDITIONAL TOPICS

Additional Topics

Original site design by Kettler, S.M. 1997-05-16.

VERSION

Version Date 01/12/2009

Version Author Culver, D.R.

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