# Level 4 Potential Conservation Area (PCA) Report

**Name** Almagre Mountain **Site Code** S.USCOHP*28270

## IDENTIFIERS

**Site ID** 2760 **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** 384609N

**State** Colorado **Longitude** 1045913W

| Quad Code | Quad Name |
|---|---|
| 38104-G8 | Manitou Springs |

**County**

Teller (CO)

| Watershed Code | Watershed Name |
|---|---|
| 11020002 | Upper Arkansas |
| 11020003 | Fountain |

## SITE DESCRIPTION

| | | | | |
|---|---|---|---|---|
| **Minimum Elevation** | 11,200.00 | **Feet** | 3,413.76 | **Meters** |
| **Maximum Elevation** | 12,349.00 | **Feet** | 3,763.98 | **Meters** |

**Site Description**

The Almagre Mountain site is located on the east slope of the Front Range on the ridges and south flanks of Almagre Mountain. The site encompasses ecosystems from the alpine tundra down into the upper subalpine zone. Alpine habitats are a diverse mosaic of large and small patch ecological systems that includes boulder fields, fellfields, cliff habitat occupied by chasmophytes (plants that inhabit rock crevices) such as James' telesonix (*Telesonix jamesii*), steep gravel slopes stabilized by cushion plants especially alpine dryad (*Dryas octopetala*), krummholz stands of bristlecone (*Pinus aristata*) and limber pine (*Pinus flexilis*), turf meadows, woodlands and human-disturbed sites. Large patch systems include turf meadows dominated by Kobresia - curly sedge (*Kobresia myosuroides - Carex rupestris*) communities which occupy low gradient, alpine ridge tops and slopes and also ancient bristlecone pine/alpine clover (*P. aristata / Trifolium dasyphyllum*) woodlands which occupy steep, south-facing gravel slopes. Subalpine uplands are a mosaic of conifer forests dominated by Engelmann spruce on moist north- and west-facing slopes, and by ancient Bristlecone pine woodlands on drier, south-facing slopes. Valley bottom habitat is characterized by a linear mosaic of shrub and graminoid wetlands bordered by an ecotone of graminoid meadows with communities such as timber oatgrass (*Danthonia intermedia*) grasslands. Hydrology in the alpine zone is dependent on snow fall amount and distribution as well as on summer precipitation. In the subalpine, shallow groundwater flow from surrounding slopes maintains the wetlands that are the headwaters for Gould Creek which drains this sub-watershed. Site geology is characterized by the extremely friable Pikes Peak granite (Tweto 1979) which weathers into unconsolidated gravels that typify soils on steep slopes. Ridgetop soils are relatively deep and well developed with a thick layer of humus.

**Key Environmental Factors**

Key environmental factors that determine site biota include: edaphic properties especially soil texture and erosional characteristics; hydrology including snow distribution and shallow groundwater flow.

**Climate Description**

Due to elevational changes and complex topography local climate on Pikes Peak, and at other high elevation sites in the Front Range, is dramatically different from climate at relatively nearby locations at lower elevations. Due to geography, precipitation in Front Range ecosystems in Teller County comes primarily during summer months. Although summer precipitation is the primary source of moisture, winter snowfall makes an important contribution to site hydrology. At alpine sites that are characterized by turf meadows such as occur in this site, most snow that falls into the alpine zone is blown down into the krummholz and subalpine zones where trees trap and store snowfall. This pattern of snow distribution has important implications to community development and site hydrology. In the alpine zone of this site, from 1971 to 2000, coldest temperatures occurred in January with an average maximum of 24.75 °F and a minimum of 1.49 °F. Warmest temperatures occurred in July with an average maximum of 59.43 °F and an average minimum of 34.09 °F. Annual average maximum

precipitation was 29.92 inches. July and August were the wettest months with 5.00 and 4.75 inches of precipitation respectively. Driest months are January and February having the least precipitation with 0.79 and 0.89 inches respectively (Prism 2010).

**Land Use History**

No Data

**Cultural Features**

No Data

## SITE DESIGN

**Site Map** Y - Yes **Mapped Date** 01/06/2011

**Designer** Malone, D.G.

**Boundary Justification**

The boundaries were delineated to encompass the known element occurrences and their potential extent as well as the ecological processes, including hydrologic and edaphic processes, essential to their long-term persistence. Additional consideration was given to Colorado's changing climate (CWCB 2010) and the need for the ability of native species to be able migrate upward in elevation in order to survive changing environmental conditions.

**Primary Area** 1,155.71 **Acres** 467.70 **Hectares**

## SITE SIGNIFICANCE

**Biodiversity Significance Rank** B3: High Biodiversity Significance

**Biodiversity Significance Comments**

The site is drawn for a fair (C-ranked) occurrence of a globally imperiled (G2/S2) bristlecone pine / alpine clover (*Pinus aristata / Trifolium dasyphyllum*) woodland. This type is a regional endemic with only a few recorded occurrences within its potential range. It requires relatively xeric subalpine slopes between 11,250 and 11,645 feet (just below timberline) with skeletal mineral soils and adequate drainage. Stands are threatened by recreational use, mining, and possibly effects of atmospheric deposition of pollutants (NatureServe 2010). Also, there is a good (B-ranked) occurrence of the globally vulnerable (G3/S3) Kobresia - curly sedge (*Kobresia myosuroides - Carex rupestris*) turf meadow and a fair (C-ranked) occurrence of the globally imperiled (G2G3/S2S3) timber oatgrass (*Danthonia intermedia*) grasslands. This association is a major upland alpine turf community of the southern Rocky Mountains. Elevations range from 11,300-12,500 feet along the Continental Divide and on the western slope of Colorado.

**Other Values Rank** No Data

**Other Values Comments**

No Data

## LAND MANAGMENT ISSUES

**Land Use Comments**

No Data

**Natural Hazard Comments**

No Data

**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 |
|---|---|---|---|---|---|
| 24835 | *Pinus aristata / Trifolium dasyphyllum* Woodland | Upper Montane Woodlands | G2 | S2 | Yes |
| 24736 | *Kobresia myosuroides - Carex rupestris* var. *drummondiana* Herbaceous Vegetation | Dry Alpine Meadows | G3 | S3? | Yes |
| 18621 | *Danthonia intermedia* Herbaceous Vegetation | Montane Grasslands | G2G3 | S2S3 | Yes |

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## 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/ |
| 198660 | Culver, D.R., D. Malone, and A. Shaw. 2011. CNHP Final Report: Survey of Critical Biological Resources in Teller County, Colorado. Colorado Natural Heritage Program, Fort Collins, CO. |
| 198314 | NatureServe Explorer (Web Page). Accessed 2010. An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. |
| 198649 | Prism Climate Group (Web Page). Accessed 2010. Spatial Climate Analysis. htttp://www.prism.oregonstate.edu/ |
| 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. |


## ADDITIONAL TOPICS

**Additional Topics**

No Data

## VERSION

**Version Date** 01/06/2011

**Version Author** Malone, D.G.

## Disclaimer