

# Level 4 Potential Conservation Area (PCA) Report

Name Kremmling

Site Code S.USWRO1\*1347

## IDENTIFIERS

Site ID 1563 Site Class PCA  
Site Alias Muddy Creek  
Site Alias Red Dirt Creek

## Network of Conservation Areas (NCA)

NCA Site ID NCA Site Code NCA Site Name  
2468 S.USCOHP\*27037 Middle Park

## LOCATORS

Nation United States Latitude 400711N  
State Colorado Longitude 1062534W

## Quad Code Quad Name

40106-A4 Kremmling  
40106-B4 Hinman Reservoir

## County

Grand (CO)

Watershed Code Watershed Name  
14010001 Colorado headwaters

## SITE DESCRIPTION

Minimum Elevation 7,400.00 Feet 2,255.52 Meters  
Maximum Elevation 7,580.00 Feet 2,310.38 Meters

## Site Description

The Kremmling site is located in Middle Park, north of Kremmling. Middle Park is within a series of high mountain parks formed by north/south trending faults traveling the length of Colorado (Chronic 1980). The predominant grayish-brown soils (USDA, NRCS 1994) are derived from Cretaceous Niobrara and Pierre Shale of the Troublesome Formation (Tweto 1979). The sparsely vegetated slopes are due to the presence of fine textured, clayey soils that contain mineralogic properties that effectively exclude almost all vegetation (Colorado Native Plant Society 1989). Muddy Creek and the Wolford Reservoir form the eastern boundary and Pass Creek forms the northern boundary. Highway 40 bisects the site. Osterhout milkvetch (*Astragalus osterhoutii*) is an endemic plant found only in Middle Park on clayey soils (Colorado Native Plant Society 1989, Dawson 1999). This unique plant is able to thrive in the seleniferous soils where few other plants can. Other associated plants, at low (<5%) cover include: Patterson's milkvetch (*Astragalus pattersonii*), shortstem buckwheat (*Eriogonum brevicaulis*), spiny phlox (*Phlox hoodii*), Fendler's bluegrass (*Poa fendleriana*), bluebunch wheatgrass (*Pseudoroegneria spicata*), sulphur-flowered buckwheat (*Eriogonum umbellatum*), mat penstemon (*Penstemon caespitosus*), and Indian ricegrass (*Achnatherum hymenoides*). Upland vegetation, where soils have lower concentration of minerals, include: yellow rabbitbrush (*Chrysothamnus viscidiflorus*), broom snakeweed (*Gutierrezia sarothrae*), Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), long-leaf phlox (*Phlox longifolia*), spiny phlox (*Phlox hoodii*), lobeleaf groundsel (*Packera multilobata*), needle-and-thread grass (*Hesperostipa comata*), Western wheatgrass (*Pascopyrum smithii*), prairie sagewort (*Artemisia frigida*), woolly groundsel (*Packera cana*), prairie Junegrass (*Koeleria macrantha*), and scarlet globemallow (*Sphaeralcea coccinea*).

## Key Environmental Factors

Edaphic indicators are clayey, seleniferous soils derived from Niobrara and Pierre shale, soil series Harsha loams (USDA, NRCS 1994).

## Climate Description

The climate follows typical weather patterns of high mountain valleys, low precipitation/snowfall (<12-15 inches/year) and late summer "monsoons".

## Land Use History

The Muddy Creek Reservoir was completed in 1994 destroying unknown numbers of Osterhout milkvetch.

## Cultural Features

No Data

## SITE DESIGN

Site Map Y - Yes Mapped Date 01/06/2006

Copyright © 2011. Colorado State University. Colorado Natural Heritage Program. All Rights Reserved.

# Level 4 Potential Conservation Area (PCA) Report

Name Kremmling

Site Code S.USWRO1\*1347

Designer Culver, D.R.

## Boundary Justification

The boundaries are drawn to capture the outcrops of the Troublesome Formation and Harsha soil series. Specifically, Pass Creek is the north boundary and Muddy Creek and Wolford Reservoir define the eastern edge.

Primary Area 3,156.49 Acres 1,277.39 Hectares

## SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

## Biodiversity Significance Comments

The Kremmling site supports an excellent to good (AB-ranked) occurrence of the Federally Listed Endangered, globally critically imperiled (G1/S1) Osterhout milkvetch (*Astragalus osterhoutii*), including several good (B-ranked) sub-populations. This plant is known only from Grand County within the Troublesome and Muddy Creek drainages. This site is irreplaceable. If destroyed, a significant amount of the occupied habitat for Osterhout milkvetch will be lost.

Other Values Rank V3 - Moderate values

## Other Values Comments

The site is a popular area for off-road vehicles.

## LAND MANAGEMENT ISSUES

## Land Use Comments

No Data

## Natural Hazard Comments

Clayey soils, once wet, are difficult to drive and walk on.

## Exotics Comments

No Data

## Offsite

No Data

## Information Needs

No Data

## 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>
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	No
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	No
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	No
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	No
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	No
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	Yes
20454	<i>Astragalus osterhoutii</i>	Kremmling Osterhout milkvetch	G1	S1	No

## REFERENCES

# Level 4 Potential Conservation Area (PCA) Report

Name Kremmling

Site Code S.USWRO1\*1347

<u>Reference ID</u>	<u>Full Citation</u>
158413	Chronic, H. 1980. Roadside geology of Colorado. Mountain Press Publishing Company, Missoula, Montana. 322 pp.
169492	Colorado Native Plant Society. 1989. Rare Plants of Colorado. Published jointly by Rocky Mountain Nature Association and Colorado Native Plant Society, Estes Park, CO.
193632	Culver, D.R. and Jones, J.R. 2006. Final Report: Survey of Critical Biological Resources in Grand County. Colorado Natural Heritage Program, Fort Collins, CO.
193652	Dawson, C.A. 1999. The autecology of Astragalus osterhoutii Jones. Dissertation. University of Denver, Denver, CO.
170993	Hobbs, R. J. and L. F. Huenneke 1992. Disturbance, diversity, and invasion: Implications for conservation. Conservation Biology, Volume 6, No. 3, September 1992. pp 324-337.
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.
193653	U.S. Department of Agriculture, Soil Conservation Service. 1994. State Soil Geographic (STATSGO) database for Colorado. Fort Worth, TX.

## ADDITIONAL TOPICS

### Additional Topics

Original site design by Fayette, K.K. 1998-02-27.

## VERSION

**Version Date** 01/30/2006  
**Version Author** Culver, D.R.

## 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