

Level 4 Potential Conservation Area (PCA) Report

Name Matterhorn Creek

Site Code S.USCOHP*26718

IDENTIFIERS

Site ID 2413 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 380251N
State Colorado Longitude 1072938W

Quad Code Quad Name
38107-A4 Uncompahgre Peak

County
Hinsdale (CO)

Watershed Code Watershed Name
14020002 Upper Gunnison

SITE DESCRIPTION

Minimum Elevation	11,650.00 Feet	3,550.92 Meters
Maximum Elevation	11,780.00 Feet	3,590.54 Meters

Site Description

This site is drawn for an iron fen, a specialized peatland type localized along the mineral belt of the Colorado Rockies. The wetland is situated just below treeline along the upper reaches of the Matterhorn Creek in a wide, open valley. Soils along the drainage are highly erodible forming a gullied, moderately sloping drainage adjacent to the site. Iron-rich groundwater originates along the eastern slopes of the drainage below Iron Beds. Within the wetland, fen vegetation surrounds an extensive area of limonite ledges fed by multiple iron-rich springs. Springs continue along both sides of limonite deposits, creating a large slope wetland that flows into the upper reaches of Matterhorn Creek. The wetland is classified as an iron fen. Peatlands are wetlands defined by having organic soils (histosols) with 40 cm peat accumulations in the upper 80 cm (USDA 2006). Peatlands are dependent on groundwater, with minimal secondary inputs from other hydrologic sources (Cooper and Arp 1998). Iron fens in the southern Rocky Mountains are characterized by iron-rich, acidic hydrology, limonite deposits, and a unique assemblage of acid tolerant bryophytes and vascular plants. Groundwater feeding these wetlands filters through mineral-rich fractured rocks, saturating peat layers to form hardened sheets of oxidized iron (Cooper and Arp 1998). Acidic hydrology of iron fens is similar to true bogs and poor fens while iron concentrations are comparable to rich fens (Cooper and Arp 1998). Fen vegetation is concentrated below multiple slope seeps along both sides of the predominant iron spring. Vegetation is dominated by water sedge (*Carex aquatilis*), sphagnum (*Sphagnum* sp.), and bluejoint (*Calamagrostis canadensis*). Sphagnum forms dense carpets and hummocks dispersed throughout saturated areas. Saturated areas with perennial groundwater below the main spring have formed extensive sheets of limonite and support very little vegetation aside from liverworts and a few islands of water sedge. Bluejoint codominates with sphagnum along drying edges and microtopographic rises, water sedge codominates along saturated area. Engelmann spruce (*Picea engelmannii*) occurs as a trace, colonizing layer. Resin birch (*Betula glandulosa*) is often a diagnostic species in iron fens, but does not occur at this site, which may be a factor of the elevational range of the species. Diamond-leaf willow (*Salix planifolia*) occurs as a dense layer with water sedge along the southern edge of the fen on mineral soils and is intermittent along northern reaches. Adjacent uplands are dominated by xeric, variable alpine meadows with common species including Ross' avens (*Geum rossii*), creeping sibbaldia (*Sibbaldia procumbens*) and patches of Engelmann spruce. Surrounding gentle meadows slope into steep scree fields and bedrock. Disturbances in the area include the Matterhorn/Wetterhorn Peak pack trail, which crosses the initial, southern spring and late season sheep grazing. Structure from old road present within fen, but site has recovered from former use as roadway.

Key Environmental Factors

Key factors influencing species composition are upper subalpine elevation, iron-rich, acidic, perennial hydrology, and moderate slope.

Climate Description

Climate and weather tend to follow typical patterns of the San Juan Mountains of Colorado being generally

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eric throughout the year with warm spring weather causing snowmelt flooding, wet summers, and a late summer "monsoon" season.

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 10/15/2006

Designer Jones, J.R.

Boundary Justification

Boundaries are drawn to include portions of surrounding areas important to the maintenance of site hydrology and 1,000 ft of buffered uplands based on an analysis of the Bibliography of Impacts to Wetlands (Keate 2004). Boundaries also include areas in the surrounding uplands that may influence the site such as an adjacent pack trail and uplands with late-season sheep grazing. This should account for natural hydrologic processes important to the maintenance of the wetland such as seasonal flooding, groundwater recharge, surface flows, and adjacent drainage. However, the boundary does not include all hydrological processes necessary to the maintenance of site hydrology and activities such as mining, improper livestock grazing, water diversion, and intense recreational use could be detrimental to the site.

Primary Area

34.78 Acres

14.08 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site is drawn for an excellent (A-ranked) occurrence of the globally imperiled (G2/S2) iron fen wetland community, (*Picea engelmannii*) / *Betula glandulosa* / *Carex aquatilis* - *Sphagnum angustifolium* woodland).

Other Values Rank V1 - Outstanding values

Other Values Comments

This site provides outstanding ecological values to the area in terms of aesthetic quality, species composition, and unique hydrology. It also provides game and wildlife habitat and aquifer recharge.

LAND MANAGEMENT ISSUES

Land Use Comments

Predominant land use in the area and surrounding uplands is recreation and sheep grazing.

Natural Hazard Comments

Avalanche danger is likely high during the fall, winter, and spring seasons due to the severity of surrounding slopes.

Exotics Comments

No exotic species were observed in the area. Pack trail may act as a conduit for exotic species introduction. Monitoring of species composition along trail could help maintenance of site quality.

Offsite

Past mining and prospects in the surrounding uplands may impact site viability.

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element</u>			<u>Global Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
<u>State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>			
24847	(<i>Picea engelmannii</i>) / <i>Betula nana</i> / <i>Carex aquatilis</i> - <i>Sphagnum angustifolium</i> Woodland	Iron Fen	G2	S2	Yes

REFERENCES

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<u>Reference ID</u>	<u>Full Citation</u>
194563	Cooper, D.J. and C. D. Arp. 1998. "Colorado's Iron Fens: Geochemistry, Flora, and Vegetation". Unpublished Report submitted to the Colorado Natural Areas Program.
192813	Keate, Nancy S. 2004. Bibliography of Impacts to Wetlands II - Draft - revised - Jan 2004. Utah Wetland Outreach, Wildlife Resources, Utah Department of Natural Resources.
194565	Neid, S.L. and J.R. Jones. 2008. Final Report: Survey of Critical Wetlands and Riparian Areas in Hinsdale County. Colorado Natural Heritage Program, Fort Collins, CO.
194564	USDA, Natural Resources Conservation Service. 2006. Keys to Soil Taxonomy, 6th ed. Soil Survey Staff, Soil Conservation Services. Washington, DC. 12 p.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 10/15/2006

Version Author Jones, J.R.

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