

Level 4 Potential Conservation Area (PCA) Report

Name Jefferson and Guernsey Creeks

Site Code S.USCOHP*339

IDENTIFIERS

Site ID 1315 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 392343N
 State Colorado Longitude 1054724W

<u>Quad Code</u>	<u>Quad Name</u>
39105-C7	Milligan Lakes
39105-D7	Jefferson

County

Park (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
10190001	South Platte Headwaters

SITE DESCRIPTION

Minimum Elevation	9,420.00 Feet	2,871.00 Meters
Maximum Elevation	10,200.00 Feet	3,109.00 Meters

Site Description

The most important part of the Jefferson and Guernsey Creeks site is two distinct areas of extreme rich fen (peatland) vegetation that merge into one toward Highway 285. Downstream from these peatland areas (to the southeast), an expansive area of wet meadow extends across 285 toward the Steiner Ranch. The western portion of the site is a combination of wet meadow and mesic and upland grasslands. One prominent knoll is included behind the Wahl Ranch, northeast of Jefferson. One fen is found in a large water discharge zone midway between Deadman Gulch and Guernsey Creek. This area is a hummock/swale complex. The hummocks are dominated by the *Kobresia simpliciuscula* - *Trichophorum pumilum* community, and the swales are filled with water sedge (*Carex aquatilis*) and fewflower spikerush (*Eleocharis quinqueflora*). The state rare silver willow (*Salix candida*) occurs infrequently on the hummocks. Another fen occurs in Deadman Gulch at the point where tall willows give way to lower stature vegetation. This fen is driven by groundwater discharge, but also exhibits influence of surface water draining from the gulch. Vegetation of this peatland grades from what can be called "rich" fen into "extreme rich" fen. This area supports tall (>2 m) shrubs (especially park willow, *Salix monticola*), which give way to an open shrubland of low shrubs such as diamondleaf willow (*Salix planifolia*), shortfruit willow (*Salix brachycarpa*), and bog birch (*Betula glandulosa*) on top of deep sedge peat (mostly water sedge, *Carex aquatilis*), then finally to the very low hummock/swale complex typical of the extreme nutrient rich wetland environments in South Park. It is at the lower end of this succession that the globally imperiled Porter feathergrass (*Ptilagrostis porteri*) occurs, dominating many of the hummocks. The same suite of extreme rich fen species that occurs in the other fen (*Trichophorum pumilum*, *Primula egaliksensis*, etc.) is also found here. Along the edges of both fen areas occur large stands of shrubby cinquefoil (*Pentaphylloides floribunda*), and the *Salix brachycarpa* / *Kobresia myosuroides* plant association. At first glance this community appears much like one of the common *Pentaphylloides* stands, but a closer look reveals its alliance to the extreme rich fens with the presence of *Kobresia myosuroides*, the few-flowered ragwort (*Packera pauciflora*), and Canadian single-spike sedge (*Carex scirpoidea*). The west and east sides of Route 285 are dominated by wet meadows that abound with the globally imperiled pale blue-eyed grass (*Sisyrinchium pallidum*, one 50 x 50 m patch west of the highway contains over 2,500 individuals). This area also contains many patches of the state rare Greenland primrose (*Primula egaliksensis*), which is scattered infrequently across the entire site. The entire Jefferson and Guernsey Creek site is currently used for agriculture; part of the area is grazed moderately, and much of the site is used for hay production. Water has been diverted out of the permanent creeks through ditches to irrigate hay meadows, resulting in an increase in the amount of wetlands. The created wetlands do not, however, sustain extreme rich fen species and communities, although pale blue-eyed grass may occur in some created wet meadows. The fens, which are predominantly groundwater induced, do not appear to have suffered from the manipulation of water on the site. Aerial photos show an area in the middle of T7S R75W S32 that looks like it has been mined, but this area was not visited on the ground. Regardless of the status of the affected area, it is not adjacent to the other

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fens, and it does not diminish the overall quality of the site. The three highest ranking elements at this site (*Ptilagrostis porteri*, the *Kobresia myosuroides* - *Thalictrum alpinum* community, and the *Kobresia simpliciuscula* - *Trichophorum pumilum* community) are moderate-sized and in very good condition. These elements appear little affected by the agricultural activities. This is the most northern occurrence of the *Kobresia simpliciuscula* - *Trichophorum pumilum* community in South Park, and one of the top three or four examples of it. This community typifies extreme rich fens. The *Kobresia simpliciuscula* - *Trichophorum pumilum* community also occurs in the Swamp Lake Botanical Area of Shoshone National Forest, Wyoming (Fertig and Jones 1992). It may also occur in select small areas in Montana and Ontario, but it is not yet clear if fen communities in these areas are the same as South Park's (Cooper, pers. comm. to J. Sanderson). In any case, the geochemistry that creates habitat for this community is in general quite limited, and these systems are expected to be globally rare. Current knowledge of Porter feathergrass indicates that this is the third largest occurrence of this species, and the largest that does not occur adjacent to a large mined area. The distribution of this taxon is restricted to a small area in and around South Park. This site is also significant for its extremely large population of the state rare little bulrush (*Trichophorum pumilum*), which extends from the upper edges of the fens well down the two creeks for over a mile. This globally secure plant was recently rediscovered in Colorado after not being seen in for over 100 years (Weber 1996). In Colorado it is found only in rich and extreme rich fens in and near South Park. Greenland primrose (*Primula egaliksensis*) occurs frequently across a large area at this site, probably many hundreds or thousands of individuals. It is found in both fens and on the east and west sides of Highway 285. The *Pentaphylloides floribunda* - *Salix brachycarpa* / *Kobresia myosuroides* community and the populations of Canadian single-spike sedge (*Carex scirpoidea*) and few-flowered ragwort (*Packera pauciflora*) overlap somewhat on this site. All are found on the less wet edges of the extreme rich fens, where soils may have high levels of organic matter but are not peat. The abundance of *Pentaphylloides floribunda* in this community suggests it is heavily influenced by grazing. This community is quite similar to the more common *Pentaphylloides floribunda* communities that also occur in South Park and elsewhere in Colorado, and it probably merits less attention than the *Kobresia* communities in the park. It is, however, clearly associated with nutrient rich groundwater discharge areas. The current status of Bodin milkvetch (*Astragalus bodinii*) and glass physa (*Physa skinneri*) is unknown.

Key Environmental Factors

No Data

Climate Description

No Data

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map P - Partial

Mapped Date 11/16/1995

Designer Sanderson, J.S.

Boundary Justification

The boundary drawn encompasses all of the elements associated with an interconnected wetland system that all drains into Guernsey Creek, including both fens and all connected wet meadows to a point downstream beyond which there are no reported elements. It also includes nearly contiguous wetlands in the Jefferson Creek drainage. The boundary is drawn to incorporate an area where natural processes (such as groundwater recharge, species reproduction) function in a manner that maintains viable populations of the elements associated with the fen. However, all hydrological processes necessary to the elements are not fully contained in the boundary. Upstream activities that alter hydrology or sediment loads could detrimentally affect the elements. With future inventory the boundary may need to be modified to include wetlands on the southeast and southwest sides of the site.

Primary Area 5,818.50 Acres

2,354.67 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site supports an excellent (A-ranked) occurrence of the globally imperiled (G2/S1) *Kobresia simpliciuscula* - *Trichophorum pumilum* plant community. This community is the most typical hummock community of South Park's extreme rich fens. This community is positively known only from small areas in

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Colorado and Wyoming, although it may also occur to a limited extent in Montana and Ontario. This occurrence is one of the largest known from the area. In addition, the site supports an excellent (A-ranked) occurrence of the globally imperiled (G2/S2) Porter feathergrass (*Ptilagrostis porteri*) and a fair (C-ranked) occurrence of the globally imperiled (G2/S1) *Kobresia myosuroides* - *Thalictrum alpinum* community. Excellent (A-ranked) and good (B-ranked) occurrences of state rare species are also within the 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

Dandelions (*Taraxacum officinale*) were noted as occurring in this area during a site visit in 1989.

Offsite

No Data

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element <u>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>
23592	<i>Carex scirpoidea</i>	Canadian single-spike sedge	G5	S2	No
19684	<i>Ptilagrostis porteri</i>	Porter feathergrass	G2	S2	Yes
21615	<i>Sisyrinchium pallidum</i>	pale blue-eyed grass	G2G3	S2	No
22395	<i>Astragalus bodinii</i>	Bodin milkvetch	G4	S2	No
22057	<i>Primula egaliksensis</i>	Greenland primrose	G4	S2	No
22645	<i>Salix candida</i>	hoary or silver willow	G5	S2	No
24977	<i>Kobresia simpliciuscula</i> - <i>Trichophorum pumilum</i> Saturated Herbaceous Vegetation	Extreme Rich Fen	G2	S1	Yes
21615	<i>Sisyrinchium pallidum</i>	pale blue-eyed grass	G2G3	S2	No
24475	<i>Dasiphora fruticosa</i> ssp. <i>floribunda</i> / <i>Deschampsia caespitosa</i> Shrubland	Montane Riparian Shrubland	G4	S3S4	No
24026	<i>Salix myrtilifolia</i>	low blueberry willow	G5	S1	No
24980	<i>Kobresia myosuroides</i> - <i>Thalictrum alpinum</i> Herbaceous Vegetation	Extreme Rich Fens	G2	S1	No
22057	<i>Primula egaliksensis</i>	Greenland primrose	G4	S2	No
17508	<i>Packera pauciflora</i>	few-flowered ragwort	G4G5	S1S2	No
21527	<i>Trichophorum pumilum</i>	little bulrush	G5	S2	No
19684	<i>Ptilagrostis porteri</i>	Porter feathergrass	G2	S2	No

REFERENCES

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Full Citation

164145	Fertig, W. and G. Jones. 1992. Plant communities and rare plant species of the Swamp Lake Botanical Area, Clark's Fork Ranger District, Shoshone National Forest. Unpublished report prepared for Shoshone National Forest, Challenge cost-share agreement no. CSA-2-91-14-0001.
193487	Jehn Water Consultants, Inc. and Leonard Consulting Water Engineers, Inc. 1998. Initial Surface and Ground Water Modeling Report of the South Park Conjunctive Use Project. Prepared for the City of Aurora.
193488	Nichols, G. 2001. Personal communication to the Colorado Natural Heritage Program.
172562	Spackman, S., D. Culver, and J. Sanderson. 2001. Final Report: Park County Inventory of Critical Biological Resources. Colorado Natural Heritage Program, Fort Collins, CO.
161921	Weber, W. A. 1990. Colorado Flora: Eastern Slope. University Press of Colorado, Niwot, CO.
159570	Weber, W. A. and R. C. Wittmann. 1992. Catalog of The Colorado Flora: A Biodiversity Baseline. University Press of Colorado, Niwot, CO.
172083	Weber, William A. and Ronald C. Wittmann. 1996. Colorado Flora: Eastern Slope.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 02/15/2001

Version Author Spackman, S.C.

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