

Level 4 Potential Conservation Area (PCA) Report

Name Horsetooth Reservoir Hogbacks

Site Code S.USCOHP*620

IDENTIFIERS

Site ID 1844 Site Class PCA
Site Alias Horsetooth Park

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 403048N
State Colorado Longitude 1050907W

<u>Quad Code</u>	<u>Quad Name</u>
40105-E2	Horsetooth Reservoir
40105-D2	Masonville

County

<u>Watershed Code</u>	<u>Watershed Name</u>
10190006	Big Thompson
10190007	Cache La Poudre

SITE DESCRIPTION

Minimum Elevation	5,430.00 Feet	1,655.00 Meters
Maximum Elevation	7,200.00 Feet	2,195.00 Meters

Site Description

This site includes the hogback ridges just east and west of Horsetooth Reservoir and south to Devil's Backbone. The key environmental factors in this area are precipitation, bedrock substrate, and fire return interval, as certain plant associations in this site are fire-dependent. Several geological formations are exposed on the hogbacks, most are sandstone, or sandstone/limestone formations, including Fountain, Ingleside, Dakota, and Lyons Formations. Lower slopes are composed of faulted sedimentary substrates which give way to granitic formations as elevation increases. In some areas, the sandstone forms a "pavement" and the vegetation is confined to cracks in the rock. The vegetation is dominated by mountain mahogany (*Cercocarpus montanus*) and small grassland openings with ponderosa pine (*Pinus ponderosa*) woodlands higher on the slopes. Some parts of the valleys between the hogbacks have undergone agricultural conversion to hay meadows or pastures, and are generally dominated by non-native grass species. Residential development has occurred at a rapid pace in the areas and houses are built or are being built within the site. Some past mining and quarrying is evident. Horsetooth Mountain Park and Lory State Park are within the site and numerous picnic grounds and a network of recreational and social trails (hiking and cycling) exist both in the park and in the general area. The globally imperiled Bell's twinpod (*Physaria bellii*) occurs within this site, which also has historic records of prairie goldenrod (*Solidago ptarmicoides* = *Unamia alba*) and the forktip three-awn grass (*Aristida basiramea*).

Key Environmental Factors

The key environmental factors in this area are precipitation, bedrock substrate, and fire return interval, as certain plant associations in this site are fire-dependent.

Climate Description

Within this site, the mean annual air temperature is about 42 to 46 degrees Fahrenheit, and annual precipitation ranges from 13 to 18 inches.

Land Use History

No Data

Cultural Features

The valley to the south of the reservoir is somewhat unique for the area. An old homestead is located in the area and nearby residential development is hidden from view. This allows one to imagine what the area was like in the times of the early European settlers.

SITE DESIGN

Site Map Y - Yes Mapped Date 01/20/2005
Designer Neid, S.L.

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Boundary Justification

The site includes most of the hogback complex east and west of Horsetooth Reservoir continuing south to near the Devil's Backbone. The boundary is intended to protect the community occurrences and habitat for the butterflies, several of which are somewhat dependent on remnant tallgrass prairies containing big bluestem and little bluestem for their lifecycles. Those species of grass are present throughout the length of the hogbacks included in the site. Most of Spring Canyon is included for the hop-feeding azure along with much of the mountain mahogany dominated slopes to the south which provides habitat for the mottled duskywing butterfly. These species are known to have low dispersal rates.

Primary Area 19,652.78 Acres 7,953.23 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B2: Very High Biodiversity Significance

Biodiversity Significance Comments

This site was drawn for a concentration of good to fair (B-C ranked) quality occurrences of globally imperiled to vulnerable (G2G3) plant communities and butterflies. The ponderosa pine / mountain mahogany / big bluestem (*Pinus ponderosa* / *Cercocarpus montanus* / *Andropogon gerardii*) foothills woodland is globally imperiled (G2) and only known from the northern Front Range of Colorado. Most occurrences of this plant association have been destroyed or degraded by development, overgrazing, or mining. This site has been impacted to some extent by these activities and the occurrences are degraded by them although still restorable. The big bluestem-little bluestem (*Andropogon gerardii* - *Schizachyrium scoparium*) xeric tallgrass prairie is also globally imperiled (G2) and has only been documented from the Front Range of Colorado, and most occurrences are also severely degraded. This occurrence of this natural community at this site is in fair condition and is relatively small, but is one of the best remaining in Larimer County. The mountain mahogany - skunkbush / big bluestem (*Cercocarpus montanus* - *Rhus trilobata* / *Andropogon gerardii*) foothills shrubland is globally imperiled (G2G3) and occurs in patches throughout the site near Horsetooth Reservoir and farther south. The globally imperiled (G2G3) mountain mahogany / New Mexico feathergrass (*Cercocarpus montanus* / *Hesperostipa neomexicana*) foothills shrubland is known only from Colorado and Wyoming. The occurrence at this site forms narrow bands along the length of the hogbacks. The globally vulnerable (G3) mountain mahogany / Scribner's needle grass (*Cercocarpus montanus* - *Hesperostipa scribneri*) shrubland is also documented at the southern end of the site. The Ottoo skipper (G3G4) and Arogos skipper (G3G4) butterflies (*Hesperia ottoe*, *Atrytone arogos*) may be vulnerable and have declined throughout their range. These species rely on the tallgrass prairie remnants that occur along the hogbacks. This site supports a colony of the imperiled butterfly, hops feeding azure (*Celastrina humulus*; G2G3), a species only known to occur on the Colorado Front Range within canyon and ravine habitats. This is a good occurrence that has persisted since it was documented at the site in the 1980's. Additionally, Schryver's elfin (*Callophrys mossii schryveri*; G4T3) occupies similar habitats as the hops feeding azure; it maintains a subspecific status and is considered globally uncommon. The site also supports a good occurrence of the mottled duskywing butterfly (*Erynnis martialis*; G3G4) which is common globally, but imperiled to vulnerable in Colorado. This species is found on hilltops with mountain mahogany or buckbrush (*Ceanothus* spp.). The dusted skipper butterfly (*Atrytonopsis hianna*; G4G5) is common globally, but rare to imperiled in Colorado. This species prefers canyons or open pine woodlands and relies on big bluestem and little bluestem as host plants for the larvae. Other butterflies within the site are Simius roadside skipper (*Amblyscirtes simius*) and cross-line skipper (*Polites origenes*).

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

Several private landowners in the area appear to be willing to work with the county. Horsetooth Mountain Park is owned by Larimer County. Small parcels of private land occur southeast and southwest of the park.

Natural Hazard Comments

No Data

Exotics Comments

Non-native or native weedy species are very common and dominant in some places. These species include Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), cheatgrass (*Bromus tectorum*), Japanese brome (*B. japonicus*), smooth brome (*B. inermis*), crested wheatgrass (*Agropyron cristatum*), leafy spurge

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(*Euphorbia esula*), toadflax (*Linaria dalmatica*), and giant ragweed (*Ambrosia trifida*).

Offsite

Reservoir, housing developments, grazing.

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>
17734	<i>Atrytonopsis hianna</i>	Dusted Skipper	G4G5	S2	No
40633	<i>Cercocarpus montanus</i> - <i>Rhus trilobata</i> / <i>Andropogon gerardii</i> Shrubland	Mountain Mahogany - Skunkbush / Big Bluestem Shrubland	G2G3	S2S3	No
19678	<i>Erynnis martialis</i>	Mottled Dusky Wing	G3	S2S3	No
17546	<i>Callophrys mossii schryveri</i>	Moss's Elfin	G4T3	S2S3	No
16895	<i>Atrytone arogos</i>	Arogos Skipper	G3	S2	No
24587	<i>Pinus ponderosa</i> / <i>Cercocarpus montanus</i> / <i>Andropogon gerardii</i> Wooded Herbaceous Vegetation	Foothills Ponderosa Pine Scrub Woodlands	G2	S2?	No
24587	<i>Pinus ponderosa</i> / <i>Cercocarpus montanus</i> / <i>Andropogon gerardii</i> Wooded Herbaceous Vegetation	Foothills Ponderosa Pine Scrub Woodlands	G2	S2?	No
17735	<i>Amblyscirtes simius</i>	Simius Roadside Skipper	G4	S3	No
19678	<i>Erynnis martialis</i>	Mottled Dusky Wing	G3	S2S3	No
20146	<i>Celastrina humulus</i>	Hops Feeding Azure	G2G3	S2	No
40630	<i>Cercocarpus montanus</i> / <i>Hesperostipa</i> <i>neomexicana</i> Shrubland	Foothills Shrubland	G2G3	S2S3	No
17488	<i>Polites origenes</i>	Cross-line Skipper	G5	S3	No
19893	<i>Hesperia ottoe</i>	Ottoe Skipper	G3G4	S2	No
17546	<i>Callophrys mossii schryveri</i>	Moss's Elfin	G4T3	S2S3	No
20146	<i>Celastrina humulus</i>	Hops Feeding Azure	G2G3	S2	Yes
40633	<i>Cercocarpus montanus</i> - <i>Rhus trilobata</i> / <i>Andropogon gerardii</i> Shrubland	Mountain Mahogany - Skunkbush / Big Bluestem Shrubland	G2G3	S2S3	No
24870	<i>Andropogon gerardii</i> - <i>Schizachyrium scoparium</i> Western Great Plains Herbaceous Vegetation	Xeric Tallgrass Prairie	G2?	S2	No
24587	<i>Pinus ponderosa</i> / <i>Cercocarpus montanus</i> / <i>Andropogon gerardii</i> Wooded Herbaceous Vegetation	Foothills Ponderosa Pine Scrub Woodlands	G2	S2?	No
40631	<i>Cercocarpus montanus</i> / <i>Achnatherum scribneri</i> Shrubland	Foothills Shrubland	G3	S3	No
24587	<i>Pinus ponderosa</i> / <i>Cercocarpus montanus</i> / <i>Andropogon gerardii</i> Wooded Herbaceous Vegetation	Foothills Ponderosa Pine Scrub Woodlands	G2	S2?	No
24856	<i>Juniperus scopulorum</i> / <i>Cercocarpus montanus</i> Woodland	Foothills Pinyon-Juniper Woodlands/Scarp Woodlands	G2	S2	No

REFERENCES

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Full Citation

159789	Bock, C.E., and J.H. Bock. 1988. Grassland birds in southeastern Arizona: impacts of fire, grazing, and alien vegetation. Pages 43-58 in P.D. Goriup, editor. Ecology and conservation of grassland birds. International Council for Bird Preservation Publication 7.
192692	Doyle, G.A., S.L. Neid and R.J. Rondeau. 2005. Final Report: Survey of Critical Biological Resources, Larimer County, Colorado. Colorado Natural Heritage Program, Fort Collins, CO.
159154	Kettler, S. and P. Pineda. 1999. Management alternatives for natural communities and imperiled invertebrates at Horsetooth Mountain Park, Larimer County, Colorado. Unpublished report prepared for Larimer County Parks and Open Lands by the Colorado Natural Heritage Program. 79pp.
166568	Kettler, S., J. Sanderson, S. Spackman, K. Fayette, C. Pague, D. Clark, and A. Hicks. 1996. Final Report: Significant plant, animal, and wetland resources of Larimer County and their conservation. Colorado Natural Heritage Program, Fort Collins, CO.
171646	Moffat, Mary & Nell McPhillips. 1993. Management for butterflies in the northern great plains: a literature review and guidebook for land managers. U.S. Fish and Wildlife Service, Ecological Services, South Dakota State Office, Pierre. SD-ES-93-05.
192828	Swengel, A.B. and S.R. Swengel. 1995. The tall-grass prairie butterfly community. In: La Roe, G.T., G.S. Farris, C.E. Puckett, P.D. Doran, and M.J. Mae, (eds.). Our Living Resources: A Report on the Distribution, Abundance, and Health of U.S. Plants, Animals, and Ecosystems. U.S. Department of Interior, National Biological Service, Washington, D.C.

ADDITIONAL TOPICS

Additional Topics

Original site design by Kettler, S.M. and P.M. Pineda, 1998-02-24.

VERSION

Version Date 01/20/2005

Version Author Neid, S.L.

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