

Level 4 Potential Conservation Area (PCA) Report

Name Rule Creek

Site Code S.USCOHP*28268

IDENTIFIERS

Site ID 2758 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 385518N
 State Colorado Longitude 1050831W

Quad Code Quad Name

38105-H2 Divide
 38105-H1 Woodland Park

County

Teller (CO)

Watershed Code Watershed Name

11020002 Upper Arkansas
 10190001 South Platte Headwaters
 10190002 Upper South Platte

SITE DESCRIPTION

Minimum Elevation	9,000.00	Feet	2,743.20	Meters
Maximum Elevation	9,600.00	Feet	2,926.08	Meters

Site Description

Rule Creek site is located in the lower montane foothills zone in the central region of Teller County. The site encompasses montane grassland at a lower elevation relative to the surrounding area. Habitat is a complex mosaic of forests, woodlands, xeric and mesic grasslands and riparian habitat with moist meadows and willow carrs. Domestic livestock grazing occurs throughout the property and varies in intensity from moderate to heavy. Habitat on northwest-facing slopes at the mountain-foothill transition on the southeast side of the property is occupied by quaking aspen (*Populus tremuloides*) woodlands. Elk browse is heavy in these woodlands and impacts aspen vigor and recruitment. Hilltops at the mountain-foothill ecotone are occupied by small stands of ponderosa pine (*Pinus ponderosa*) with an understory grasses including Arizona fescue (*Festuca arizonica*), mountain muhly (*Muhlenbergia montana*), slimstem muhly (*M. filiculmis*) and blue grama (*Bouteloua gracilis*). Swales and slopes at this transition zone are often occupied by small patches of Parry's oatgrass (*Danthonia parryi*) in a mosaic with patches of mesic graminoids and forbs such as bluejoint reedgrass (*Calamagrostis canadensis*) and marsh felwort (*Lomatogonium rotatum*) in moist swales. Arizona fescue - mountain muhly (*Festuca arizonica* - *Muhlenbergia montana*) grasslands dominate the expansive, open, low rolling hills that lie to the northwest and at the base of steeper mountain slopes. Uplands surrounding the site include a complex mosaic of forest woodland with quaking aspen woodlands occurring on moist, north-facing slopes and Douglas-fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), white fir (*Abies concolor*), and Engelmann spruce (*Picea engelmannii*) interlaced throughout the surrounding hills. The soils of the site are deep, which is characteristic of the valley grasslands of the region. These deep valley soils provide perfect habitat for Gunnison's prairie dogs (*Cynomys gunnisoni*), four small colonies of which inhabit the site. This complex of Gunnison's prairie dog occupies portions of the species range located in south-central Colorado and north-central New Mexico that the U.S. Fish and Wildlife Service designated as a candidate population for listing under the Endangered Species Act because threats within this part of the species range are significant and imminent (USFWS 2008). Geology is composed primarily of Precambrian age igneous granitic rocks from the Pikes Peak batholith of the 1,000 m.y. age group. Additionally, on the west side of the site, there is a patch of Tertiary age Ogallala formation sand and gravel (Tweto 1979). Soils are a complex patchwork of types; soils on steeper forested hillslopes on the southwest side of the site are Catamount-Guffey complex, 15 to 40 percent slopes, and Guffey-Herbman association, 5 to 50 percent slopes; stream channels soils are Rosane taxadjunct loam, 0 to 3 percent slopes; soils on low grassland hillslopes on the southwest and north sides of the site are Goth gravelly loam, 8 to 40 percent slopes and Tellura-Seitz complex, 10 to 30 percent slopes (USDA NRCS 2008). Bird species observed at this site included Prairie Falcon (*Falco mexicanus*), Red-tailed Hawk (*Buteo jamaicensis*), Turkey Vulture (*Cathartes*

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aura), Black-chinned Hummingbird (*Archilochus alexandri*), Belted Kingfisher (*Ceryle alcyon*), Eastern Kingbird (*Tyrannus tyrannus*), Common Raven (*Corvus corax*), Horned Lark (*Eremophila alpestris*), Barn Swallow (*Hirundo rustica*), Mountain Bluebird (*Sialia currucoides*), Yellow-rumped Warbler (*Dendroica coronata*), Western Meadowlark (*Sturnella neglecta*) and House Wren (*Carpodacus mexicanus*). Several of these species are vulnerable to climate-change induced population declines (NABCI 2010).

Key Environmental Factors

The presence of the Gunnison's prairie dogs at this site is attributable to unfragmented native montane grassland that has experienced only moderate disturbance. Ecological processes including climate, fire disturbance, grazing intensity, and Gunnison's prairie dog (*Cynomys gunnisoni*) activity are key determinants of floristic and site characteristics. Key environmental factors influencing biota at this site are ecological processes including especially fire frequency and grazing intensity. Frequent fires help to maintain the grassland dominants and may play a role in restricting the invasion of trees and shrubs. Overgrazing can result in grassland deterioration indicated by a decrease in primary grasses such as Arizona fescue (*Festuca arizonica*) (Rondeau 2001).

Climate Description

This site at an average elevation of approximately 9,200 feet experiences its coldest temperatures in January with an average maximum of 34.75 °F and a minimum of 9.21 °F. Warmest temperatures occurred in July with an average maximum of 71.94 °F and an average minimum of 45.32 °F. Annual average maximum precipitation is 18.86 inches. July and August are the wettest months of the year with 3.69 and 3.65 inches of precipitation respectively. The driest months are December, January and February with 0.48, 0.43 and 0.46 inches of precipitation respectively. March through June and September through November have an intermediate amount of precipitation (Prism 2010).

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 12/30/2010

Designer Sovell, J.R. and D.G. Malone

Boundary Justification

The boundary encompasses the entire extent of the prairie dog complex, surrounding montane grassland, and the (mostly) unoccupied space among these colonies. The site is bounded on all sides by land that is unsuitable for use by prairie dogs because it is much too hilly and wooded. The boundary also includes unoccupied habitat outside of the edge of the prairie dog complex and is intended to allow for suitable areas into which the population can expand. Only sites with written landowner permission were surveyed.

Primary Area 2,340.07 Acres

947.00 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

The site is drawn for a good (B-ranked) occurrence of the globally vulnerable (G3/S2) grassland community, Arizona fescue - Mountain muhly (*Festuca arizonica* - *Muhlenbergia montana*). This grassland association is reported from Texas and southern Colorado, and possibly occurs in northern New Mexico with isolated localities in central New Mexico, and in northern and eastern Arizona. Many occurrences have been degraded by heavy livestock grazing. Some stands may have converted to nearly closed canopy coniferous forests with fire suppression and/or heavy grazing (NatureServe 2010). Additionally, there is a fair (C-ranked) occurrence of the Gunnison's prairie dog (*Cynomys gunnisoni*). The montane population of the Gunnison prairie dog is considered globally imperiled (G5T2) and is designated as a candidate population by the U. S. Fish and Wildlife Service under the Endangered Species Act. Recently the U.S. Fish and Wildlife Service found that the Gunnison's prairie dog is warranted for listing under the Endangered Species Act and assigned a listing priority number of 2 because threats have a high magnitude and are imminent (U.S. Fish and Wildlife Service 2010). Also a Prairie Falcon (*Falco mexicanus*), currently watchlisted by CNHP, was observed.

Other Values Rank No Data

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Other Values Comments

A breeding pair of Prairie Falcon (*Falco mexicanus*), a species on CNHP's watch list, was documented. Prairie Falcons have a large range in western and central North America and populations are mostly stable, but with some local declines. Threats to Prairie Falcons include human disturbance, especially just prior to egg-laying time, and reproductive failure due to pesticides including hexachlorobenzene and DDE (NatureServe 2010).

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

No Data

Exotics Comments

Alien plant species include: Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), cheatgrass (*Bromus tectorum*), common timothy (*Phleum pratense*), white clover (*Trifolium repens*), Canada thistle (*Cirsium arvense*), yellow toadflax (*Linaria vulgaris*), and musk thistle (*Carduus nutans*).

Offsite

There is some exurban development within the surrounding landscape and depending upon the density of future developments this could be detrimental to the long term viability of the prairie dog population at this site.

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>
44176	<i>Cynomys gunnisoni</i> pop. 1	Gunnison's Prairie Dog - Montane Population	G5T2	S2	No
24543	<i>Festuca arizonica</i> - <i>Muhlenbergia montana</i> Herbaceous Vegetation	Montane Grasslands	G3	S2	Yes

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
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. http://www.prism.oregonstate.edu/
190863	Rondeau, R. 2001. Ecological system viability specifications for Southern Rocky Mountain ecoregion. First Edition. Colorado Natural Heritage Program, Colorado State University, Fort Collins, CO. 181 pp.
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.
198679	U.S. Fish and Wildlife Service (USFWS). 2008. Endangered and Threatened Wildlife and Plants; 12-month Finding on a Petition To List the Gunnison's Prairie Dog as Threatened or Endangered. Federal Register 73(24): 6660-6684.
198652	U.S. Fish and Wildlife Service (Web Page). Accessed 2010. The State of the Birds: 2010 Report on Climate Change. http://www.stateofthebirds.org

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date	12/30/2010
Version Author	Sovell, J.R. and D.G. Malone

Disclaimer

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