

Level 4 Potential Conservation Area (PCA) Report

Name Dolores Canyon South

Site Code S.USCOHP*4644

IDENTIFIERS

Site ID 931 Site Class PCA
 Site Alias Dolores Canyon-Uravan to Roc Creek
 Site Alias Garvey Gulch
 Site Alias Spring Cliff
 Site Alias Sewemup Mesa

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 382629N
 State Colorado Longitude 1085125W

<u>Quad Code</u>	<u>Quad Name</u>
38108-E8	Juanita Arch
38108-D7	Red Canyon
38108-E7	Calamity Mesa
38108-D8	Roc Creek
38108-C7	Davis Mesa

County

Mesa (CO)
 Montrose (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
14030004	Lower Dolores
14030003	San Miguel
14030002	Upper Dolores

SITE DESCRIPTION

Minimum Elevation	4,560.00 Feet	1,389.89 Meters
Maximum Elevation	7,690.00 Feet	2,343.91 Meters

Site Description

This spectacular red sandstone canyon south of Gateway is one of the most scenic areas in Mesa and Montrose counties. The Dolores River winds between sheer cliffs, reflecting the red rocks above. The riverbank is dominated by tamarisk (*Tamarix ramosissima*) and coyote willow (*Salix exigua*) while Rio Grande cottonwood (*Populus deltoides* ssp. *wislizeni*), boxelder (*Acer negundo*) and Siberian elm (*Ulmus pumila*) are found less frequently. Herbaceous species lining the riverbank include common reed (*Phragmites australis*), saltgrass (*Distichlis spicata*), sedges (*Carex* spp.), rushes (*Juncus* spp.), and bulrush (*Schoenoplectus acutus*). The secondary floodplain terrace is dominated by a dense stand of wild privet (*Forestiera pubescens*), sagebrush (*Artemisia tridentata*), and rabbitbrush (*Chrysothamnus* sp.). Gambel's oak (*Quercus gambelii*), Utah juniper (*Juniperus osteosperma*), Mormon tea (*Ephedra* sp.), and sagebrush (*Artemisia* sp.) cover nearby slopes, reaching up to cliffs with inaccessible ledges. Much of the area is dominated by aggressive non-natives such as tamarisk, Russian knapweed (*Acroptilon repens*), white sweetclover (*Melilotus alba*), and alfalfa (*Medicago sativa*). Upstream hydrologic diversions have altered the hydrologic regime. Dense stands of tamarisk along riverbanks which were historically dominated by herbaceous species or sporadic cottonwoods may also be disrupting typical flooding patterns by slowing water velocity and subsequently increasing sediment deposition (Nature Conservancy 1998). This can cause the river channel to narrow and incise leaving many historical wetlands too high above the water table for wetland vegetation to survive. Soils are derived from alluvium and vary in texture depending on geomorphic position. Organic matter accumulation is minimal except near the banks of sloughs and/or backwaters where small O- and thick A-horizons may form. Much of the floodplain is mapped as the Glenberg series, coarse-loamy, mixed (calcareous), mesic, Ustic Torrifluvents (Soil Conservation Service 1978). These soils mainly occur on secondary floodplain terraces along the Dolores River. Sewemup Mesa, also included in this site, is a large mesa west of the Dolores River Canyon. A series of parallel drainages coming off the mesa, end at the cliffs above the Dolores River, where they form seasonal waterfalls or seep into the ground to emerge again in box canyons and alcoves to sustain hanging garden seep communities. One of these hanging gardens supports

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one of only two populations of the Kachina daisy (*Erigeron kachinensis*) in Colorado. Rare hanging garden associations dominated by Mancos columbine (*Aquilegia micrantha*) and Eastwood's monkeyflower (*Mimulus eastwoodiae*) are also found at some of these seeps, which are located on the steep sandstone cliffs surrounding the mesa at the contact between the Wingate and Chinle formations. State imperiled species such as southern maiden-hair (*Adiantum capillus-veneris*) and helleborine orchids (*Epipactis gigantea*) are also found in these seeps. Ditch reedgrass (*Calamagrostis scopulorum*) and common reed (*Phragmites australis*) are other common species found growing in these seeps. Uplands on Sewemup Mesa have pinon - juniper woodlands, with some excellent patches of native bunchgrasses. Typical grasses here are needle-and-thread (*Hesperostipa comata*), blue grama (*Bouteloua gracilis*), alkali sacaton (*Sporobolus airoides*), galleta (*Hilaria jamesii*), Indian ricegrass (*Achnatherum hymenoides*), and sand dropseed (*Sporobolus cryptandrus*). Common shrub species of the mesa include snakeweed (*Gutierrezia sarothrae*), Mormon tea (*Ephedra* sp.), yucca (*Yucca harrimaniae*), four-wing saltbush (*Atriplex canescens*), single leaf ash (*Fraxinus anomala*), antelope bitterbrush (*Purshia tridentata*), cliff rose (*P. stansburiana*), serviceberry (*Amelanchier utahensis*), and mountain mahogany (*Cercocarpus montanus*). Soil crusts of mosses, lichens and micro-organisms are well developed on the red sandy soils. Soils below the hanging gardens are typically saturated and have organic matter accumulation. The Dolores Canyon South PCA continues south along the Dolores River north of Uravan, Colorado. It contains a combination of privately owned land and BLM land. It is situated on sediments of the Jurassic Period including the Morrison Formation: stream sands, shale, gravel, and ash; the Summerville Formation: an extensive marine sequence; and the Entrada Formation: dune sand, weak calcareous cement. The soil layer composition is Zyme characterized by mesic, clayey substrates. The vegetation surrounding the canyon within the site is dominated by pinon - juniper woodland. The San Rafael milkvetch was found on benches above the canyon in the Morrison Formation. The sandstone milkvetch was located in soil pockets in the Entrada sandstone. The giant helleborine orchid is found in wet areas below seeps in the Wingate Sandstone. Roundtail chubs and flannelmouth suckers are known to occupy the Dolores River from around the old townsite of Slick Rock, Colorado to its termination in Utah.

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 12/01/1996

Designer Lyon, M.J.

Boundary Justification

The boundary is drawn to include the Dolores River floodplain and slopes below the steep cliffs, which rise on both sides of the river. The boundaries incorporate an area that will allow natural hydrological processes such as seasonal flooding, sediment deposition, and new channel formation to maintain viable populations of the riparian elements. It should be noted that the hydrological processes necessary to the riparian elements are not fully contained by the site boundaries. Given that the elements are dependent on natural hydrological processes associated with the Dolores River, any upstream activities such as water diversions, impoundments, and development could potentially be detrimental to the elements. The area contains extensive habitat, which is suitable for the Dolores skeletonplant although the occurrences are patchy. This boundary indicates the minimum area that should be considered for any conservation management plan.

Primary Area 25,321.05 Acres

10,247.10 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B1: Outstanding Biodiversity Significance

Biodiversity Significance Comments

This site is a hotspot for rare plants in Colorado. Most significant are fair (C-ranked) occurrences of the globally critically imperiled (G1G2/S1) Dolores skeletonplant (*Lygodesmia doloresensis*), good (B-ranked) occurrences of the globally critically imperiled (G5T1/S1) horseshoe milkvetch (*Astragalus equisolensis*), a good (B-ranked) occurrence of the globally imperiled (G2/S1) kachina daisy (*Erigeron kachinensis*), excellent (A-ranked) and good (B-ranked) occurrences of the globally imperiled (G2G3/S1) San Rafael milkvetch

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(*Astragalus rafaensis*), an excellent (A-ranked) occurrence of the globally imperiled (G2G3/S2S3) *Aquilegia micrantha* - *Mimulus eastwoodiae* hanging gardens and a fair (C-ranked) occurrence of the globally critically imperiled (G1G2/S1) *Forestiera pubescens* foothills riparian shrubland. In addition, there are multiple excellent (A-ranked) and good (B-ranked) occurrences of globally vulnerable and state rare plants and natural communities, and American Peregrine Falcons (*Falco peregrinus anatum*) have been documented breeding in the site. Breeding populations are rare in Colorado (G4T4/S2B).

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

steep cliffs, some loose rocks

Exotics Comments

Tamarisk is found along the river.

Offsite

No Data

Information Needs

The Dolores skeletonplant (*Lygodesmia doloresensis*) was found along the highway in 1979, 1985 and 1993. At that time it was noted that the population might not be viable, as it appeared to be preferentially grazed by domestic livestock and wildlife. Recent searches have failed to relocate it. However, since the entire range of the species is extremely limited, it would be worthwhile to continue the effort.

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>
23491	<i>Adiantum capillus-veneris</i>	southern maiden-hair	G5	S2	No
23346	<i>Erigeron kachinensis</i>	kachina daisy	G2	S1	Yes
24511	<i>Bouteloua gracilis</i> - <i>Pleuraphis jamesii</i> Herbaceous Vegetation	Shortgrass Prairie	G2G4	S3	No
17626	<i>Epipactis gigantea</i>	helleborine	G4	S2S3	No
20453	<i>Astragalus linifolius</i>	Grand Junction milkvetch	G3Q	S3	No
20451	<i>Astragalus sesquiflorus</i>	sandstone milkvetch	G3G4	S1	No
21230	<i>Mimulus eastwoodiae</i>	Eastwood monkey-flower	G3G4	S1	No
22406	<i>Astragalus rafaensis</i>	San Rafael milkvetch	G2G3	S1	Yes
21230	<i>Mimulus eastwoodiae</i>	Eastwood monkey-flower	G3G4	S1	No
22406	<i>Astragalus rafaensis</i>	San Rafael milkvetch	G2G3	S1	No
17355	<i>Pellaea atropurpurea</i>	purple cliff-brake	G5	S2S3	No
24055	<i>Sporobolus flexuosus</i>	mesa dropseed	G5	S1S2	No
18026	<i>Astragalus eastwoodiae</i>	Eastwood milk-vetch	G3	S3	No
17400	<i>Gilia haydenii</i>	San Juan gilia	G3	S2	No
20635	<i>Polygala subspinosa</i>		G4?	S1	No
44146	<i>Acer negundo</i> - <i>Celtis laevigata</i> var. <i>reticulata</i> Woodland		GNR	SNR	No
20453	<i>Astragalus linifolius</i>	Grand Junction milkvetch	G3Q	S3	No
24556	<i>Pinus edulis</i> - (<i>Juniperus monosperma</i> , <i>Juniperus osteosperma</i>) / <i>Hesperostipa comata</i> Woodland	Xeric Western Slope Pinyon-Juniper Woodlands	G2?	S2	No
21647	<i>Astragalus naturitensis</i>	Naturita milkvetch	G2G3	S2S3	No
21654	<i>Plecotus townsendii pallescens</i>	Townsend's Big-eared Bat Subsp	G4T4	S2	No

REFERENCES

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<u>Reference ID</u>	<u>Full Citation</u>
193456	Briggs, M.K. 1996. Riparian Ecosystem Recovery in Arid Lands. Strategies and References. The University of Arizona Press. Tuscon, AZ.
193457	Bureau of Land Management. 1990. Dolores River Instream Flow Assessment, Project Report. U.S. Department of Interior. Report # BLM/YA?PR-900/003+7200. Denver, CO.
173289	Lyon, P., C. Pague, R. Rondeau, L. Renner, C. Slater, and C. Richard. 1996. Final Report: Natural Heritage Inventory of Mesa County, Colorado. Colorado Natural Heritage Program, Fort Collins, CO.
193465	Sala, A.S., S.D. Smith, and D.A. Devitt. 1996. Water use by Tamarix ramosissima and associated phreatophytes in a Mojave desert floodplain. Ecological Applications 6, 888-898.
191938	Soil Conservation Service. 1978. Range site descriptions for Colorado. Technical Guide, Section II-E. USDA Soil Conservation Service, Colorado State Office, Denver.
193462	The Nature Conservancy. 1998. Element Stewardship Abstract for Tamarix ramosissima, T. pentandra, T. chinensis, and T. parviflora (Tamarisk). Prepared by Alan T. Carpenter, Land Stewardship Consulting, Boulder, CO for The Nature Conservancy, Arlington, VA.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 12/01/1996

Version Author Lyon, M.J.

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