

Level 4 Potential Conservation Area (PCA) Report

Name Gateway

Site Code S.USCOHP*146

IDENTIFIERS

Site ID 329 Site Class PCA
Site Alias Gateway North
Site Alias John Brown Canyon

Network of Conservation Areas (NCA)

<u>NCA Site ID</u>	<u>NCA Site Code</u>	<u>NCA Site Name</u>
-		No Data

County

Grand (UT)

Mesa (CO)

SITE DESCRIPTION

Site Description

At the foot of the monolithic Palisade, the Dolores River emerges from its narrow canyon and develops a wide floodplain. The riparian areas are dominated by scattered Rio Grande cottonwood (*Populus deltoides* ssp. *wislizeni*), coyote willow (*Salix exigua*), tamarisk (*Tamarix ramosissima*), big sagebrush (*Artemisia tridentata*), skunkbrush (*Rhus trilobata*), and wild privet (*Forestiera pubescens*). The largest cottonwood gallery along the Dolores River in Mesa County occurs just north of Gateway. Tamarisk is fairly prevalent in the stand. The wild privet stand occurs on a sandy bench above the river and forms an impenetrable thicket. Coyote willow and skunkbush also occur in the stand. There is very little herbaceous understory. Gentle slopes with pinyon (*Pinus edulis*), juniper (*Sabina osteosperma*) and blackbrush (*Coleogyne ramosissima*) lead up to vertical Wingate sandstone cliffs, where Peregrine Falcons are known to nest. County roads lead northwest from Gateway to follow the river on both the east and west. Along these roads, in the alluvial soils deposited by the river, are found two of the rarest plants in Colorado, the Dolores skeletonplant (*Lygodesmia doloresensis*) and the Fisher Towers milkvetch (*Astragalus piscator*). They grow among the common desert shrub species shadscale (*Atriplex confertifolia*), greasewood (*Sarcobatus vermiculatus*), prickly pear cactus (*Opuntia polyacantha*), and Indian rice grass (*Oryzopsis hymenoides*). There is a large diversion dam a few miles north of Gateway. Hay meadows dot the floodplain on a few benches. The entire stretch of river through this site is heavily infested with tamarisk and Russian knapweed (*Acroptilon repens*) and is heavily grazed by domestic livestock. Roundtail chub and flannelmouth sucker are found in this stretch of the Dolores River (Bureau of Land Management 1990). However, records of these fish are not in CNHP's database. 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. Tamarisk removal and control of Russian knapweed is needed at this site. However, removing dense stands of tamarisk and subsequently planting cottonwoods and willows without restoring the historical flooding regime will require extensive follow-up management (Smith and Devitt 1996 as cited in The Nature Conservancy 1998). Upstream, the regulation of water discharge from McPhee Reservoir has reduced the capacity for the Dolores River to seasonally flood, scour, and transport/deposit sediments along its course. Efforts to work with upstream water users, especially those who use water from McPhee Reservoir, to reestablish spring flooding would greatly assist in cottonwood regeneration along the Dolores River. The timing, quantity, and duration of these spring floods should attempt to mimic seasonal flooding patterns prior to the construction of McPhee dam. Otherwise, cottonwood and willow plantings may require irrigation until their root systems have reached the groundwater table. Depending on groundwater depth, the plantings may require irrigation until their root systems have reached the groundwater table. However, depending on soil types and the amount of irrigation water applied, irrigation may only wet the top 35-70 ft³ of the vertical soil profile, which may not allow tree roots to grow deep enough to access the groundwater table (Briggs 1996). Carothers et. al (1990, as cited in Briggs 1996) suggest that plantings be given an overabundance of irrigation water to ensure the entire soil profile down to the water table is wetted. Because tamarisk is known to release excessive amounts of salt to soils and that many areas have accumulated salts due to a lack of flooding, some areas may have to be treated for excess salts prior to revegetation efforts (Sala et al. 1996). Various methods exist to accomplish this, such as flooding the area with water that has a lower soluble salt content than the soil. This should be conducted in the winter months when plant uptake is minimal. Another treatment option is to amend the soils with gypsum to neutralize the effects of sodium.

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Key Environmental Factors

No Data

Climate Description

No Data

Land Use History

No Data

Cultural Features

No Data

Minimum Elevation 4,500.00 **Feet** 1,372.00 **Meters**

Maximum Elevation 6,800.00 **Feet** 2,073.00 **Meters**

SITE DESIGN

Site Map Y - Yes

Mapped Date 12/10/2008

Designer Lyon, M.J.

Boundary Justification

The boundary is drawn to include the rare plants and significant plant communities, and additional potential habitat for these elements. The site includes the Dolores River floodplain and slopes below the steep cliffs, which rise on both sides of the river. The area contains extensive habitat, which is suitable for the Dolores skeletonplant and the Fisher Towers milkvetch, although the occurrences are patchy. 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. This boundary indicates the minimum area that should be considered for any conservation management plan.

Primary Area 62,761.22 **Acres** 25,398.60 **Hectares**

SITE SIGNIFICANCE

Biodiversity Significance Rank B1: Outstanding Biodiversity Significance

Biodiversity Significance Comments

This site supports multiple occurrences of the globally critically imperiled (G1G2/S1) Dolores skeletonplant (*Lygodesmia doloresensis*), including the best known (globally) occurrence of this species which is in good (B-ranked) condition. The Dolores skeletonplant is known only from Mesa County, Colorado, and no place else in the world. The site also supports two excellent (A-ranked) occurrences of a globally critically imperiled subspecies (G5T1/S1), Horseshoe milkvetch (*Astragalus equisolensis*). An excellent to good (AB-ranked) occurrence of the globally imperiled (G2G3/S1) Fisher Tower milkvetch (*Astragalus piscator*) is also found at this site. The Fisher Tower milkvetch is known from three counties in eastern Utah, and in Mesa County. In Colorado it is known only from the Dolores River Canyon north of Gateway. The site also supports the globally imperiled (G2/S1) Kachina daisy (*Erigeron kachinensis*), the globally imperiled (G2G3/S2) Osterhout cat's-eye (*Oreocarya osterhoutii*) and the state imperiled (G4/S2) Utah penstemon (*Penstemon utahensis*). The globally critically imperiled (G1G2/S1) wild privet community, *Forestiera pubescens*, occurs along the riparian area of the Dolores River. The wild privet association occurs in Colorado and is expected to occur in New Mexico, Arizona, and Utah. In Colorado, this association is known only to occur along the Dolores and San Miguel rivers. It is threatened by inappropriate stream flow alterations. Two additional pinon pine associations occur in the uplands. Although the site was not drawn for these species, records of breeding Peregrine Falcons and Black-throated Sparrows have also been documented as well as the state imperiled longnose leopard lizard and globally vulnerable Townsend's big-eared bat.

Other Values Rank No Data

Other Values Comments

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

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<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>
22406	<i>Astragalus rafaensis</i>	San Rafael Milkvetch	G3	S2S3	N
21035	<i>Lygodesmia doloresensis</i>	Dolores River Skeletonplant	G1G2	S1S2	N
21230	<i>Mimulus eastwoodiae</i>	Eastwood Monkeyflower	G3G4	S1S2	N
21063	<i>Oreocarya osterhoutii</i>	Osterhout Cat's-eye	G2G3	S2	N
21654	<i>Corynorhinus townsendii pallescens</i>	Townsend's Big-eared Bat Subsp	G4T3T4	S2	N
23491	<i>Adiantum capillus-veneris</i>	Southern Maiden-hair	G5	S2	N
21035	<i>Lygodesmia doloresensis</i>	Dolores River Skeletonplant	G1G2	S1S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
20021	<i>Tantilla hobartsmithi</i>	Southwestern Blackhead Snake	G5	S2?	N
24872	<i>Salix exigua</i> / Mesic Graminoids Western Wet Shrubland	Coyote Willow/Mesic Graminoid	G5	S5	N
19160	<i>Dryophytes arenicolor</i>	Canyon Treefrog	G5	S2	N
19162	<i>Phragmites australis ssp. australis</i> Western Ruderal Wet Meadow	Western Slope Marsh	GNA	S5	N
21035	<i>Lygodesmia doloresensis</i>	Dolores River Skeletonplant	G1G2	S1S2	N
18216	<i>Eleocharis rostellata</i> Marsh	Emergent Wetland	G3	S2	N
22091	<i>Frasera paniculata</i>	Tufted Green Gentian	G4	S1	N
19709	<i>Forestiera pubescens</i> Wet Shrubland	Foothills Riparian Shrubland	G1G2	S2	N
18046	<i>Bolboschoenus maritimus</i> Marsh	Emergent Wetland (Marsh)	G4	S2	N
21035	<i>Lygodesmia doloresensis</i>	Dolores River Skeletonplant	G1G2	S1S2	N
24552	<i>Aquilegia micrantha</i> - <i>Mimulus eastwoodiae</i> Hanging Garden	Hanging Gardens	G2G3	S2	N
22735	<i>Astragalus piscator</i>	Fisher Towers Milkvetch	G2G3	S1	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
24946	<i>Pinus edulis</i> - <i>Juniperus osteosperma</i> / <i>Coleogyne ramosissima</i> Woodland	West Slope Pinon Woodland	G3	SU	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
22406	<i>Astragalus rafaensis</i>	San Rafael Milkvetch	G3	S2S3	N
21725	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4	S2B	N
24780	<i>Pinus edulis</i> - <i>Juniperus osteosperma</i> / <i>Purshia stansburiana</i> Woodland	Xeric Western Slope Pinyon-Juniper Woodlands	G4?	S3?	N
21035	<i>Lygodesmia doloresensis</i>	Dolores River Skeletonplant	G1G2	S1S2	Y
19709	<i>Forestiera pubescens</i> Wet Shrubland	Foothills Riparian Shrubland	G1G2	S2	N
19709	<i>Forestiera pubescens</i> Wet Shrubland	Foothills Riparian Shrubland	G1G2	S2	N
21725	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4	S2B	N
19709	<i>Forestiera pubescens</i> Wet Shrubland	Foothills Riparian Shrubland	G1G2	S2	N
24362	<i>Oreocarya longiflora</i>	Long-flower Cat's-eye	G3	S3	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N
20954	<i>Enneapogon desvauxii</i>	Spike Pappusgrass	G5	S2	N
24881	<i>Pinus edulis</i> - <i>Juniperus</i> spp. / <i>Pseudoroegneria spicata</i> Woodland	Xeric Western Slope Pinyon-Juniper Woodlands	G4	S4	N
17400	<i>Aliciella haydenii</i>	San Juan Gilia	G3	S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
24340	<i>Astragalus coltonii</i> var. <i>moabensis</i>	Colton Milkvetch	G4T3?	S2S3	N
21035	<i>Lygodesmia doloresensis</i>	Dolores River Skeletonplant	G1G2	S1S2	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N

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22735	<i>Astragalus piscator</i>	Fisher Towers Milkvetch	G2G3	S1	N
22735	<i>Astragalus piscator</i>	Fisher Towers Milkvetch	G2G3	S1	N
22406	<i>Astragalus rafaensis</i>	San Rafael Milkvetch	G3	S2S3	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
21063	<i>Oreocarya osterhoutii</i>	Osterhout Cat's-eye	G2G3	S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N
17400	<i>Aliciella haydenii</i>	San Juan Gilia	G3	S2	N
40681	<i>Astragalus desperatus</i> var. <i>neeseae</i>	Horseshoe Milkvetch	G5T2	S1	N
19709	<i>Forestiera pubescens</i> Wet Shrubland	Foothills Riparian Shrubland	G1G2	S2	N
19160	<i>Dryophytes arenicolor</i>	Canyon Treefrog	G5	S2	N
19001	<i>Penstemon utahensis</i>	Utah Penstemon	G4	S2	N
18668	<i>Vireo vicinior</i>	Gray Vireo	G5	S2B	N
19709	<i>Forestiera pubescens</i> Wet Shrubland	Foothills Riparian Shrubland	G1G2	S2	N
23346	<i>Erigeron kachinensis</i>	Kachina Daisy	G3	S1	N
19160	<i>Dryophytes arenicolor</i>	Canyon Treefrog	G5	S2	N
21725	<i>Falco peregrinus anatum</i>	American Peregrine Falcon	G4T4	S2B	N
23491	<i>Adiantum capillus-veneris</i>	Southern Maiden-hair	G5	S2	N
24600	<i>Populus deltoides</i> ssp. <i>wislizeni</i> / <i>Rhus trilobata</i> Riparian Woodland	Fremont's Cottonwood Riparian Forests	G3	S3	N
18115	<i>Pediomelum aromaticum</i>	Paradox Breadroot	G3	S2	N

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

No Data

Exotics Comments

Exotics include *Bromus tectorum*, *Tamarix ramosissima*, *Centaurea repens* and *Hordeum brachyantherum*.

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.

REFERENCES

Level 4 Potential Conservation Area (PCA) Report

Name Gateway Site Code S.USCOHP*146

<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.
193458	Carothers, S.W., G.S. Mills, and R.R. Johnson. 1990. The Creation and Restoration of Riparian Habitat in Southwestern Arid and Semi-Arid Regions. In Wetland Creation and Restoration: The Status of Science, Vol. 1, Regional Reviews, edited by J.A. Kusler and M.E. Kentula, 359-376. Covelo, CA. Island Press.
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.
193466	Smith, S.D. and D.A. Devitt. 1996. "Physiological ecology of saltcedar: why is it a successful invader". Presentation at Saltcedar Management and Riparian Restoration Workshop, Las Vegas, NV. September 1996.
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.
193469	USDA Soil Conservation Service. 1978. Soil Survey of Mesa County Area, CO. U.S. Department of Agriculture.

ADDITIONAL TOPICS

Additional Topics

Original site design by Lyon, M.J. 1996-12-01.

LOCATORS

Nation United States **Latitude** 383736N
State Colorado **Longitude** 1085734W

Quad Code Quad Name

38108-F8 Gateway
 38109-F1 Dolores Point North
 38109-E1 Dolores Point South
 38109-G1 Steamboat Mesa
 38108-E7 Calamity Mesa
 38108-E8 Juanita Arch

Watershed Code Watershed Name

14030004 Lower Dolores

VERSION

Version Date 12/10/2008
Version Author Lyon, M.J.

DISCLAIMER

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