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)

NCA Site ID	NCA Site Code	NCA Site Name
-		No Data

LOCATORS

Nation United States **Latitude** 383829N

State Colorado **Longitude** 1085736W

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

County

Mesa (CO)

Grand (UT)

Watershed Code	Watershed Name
14030004	Lower Dolores

SITE DESCRIPTION

Minimum Elevation	4,500.00	**Feet**	1,372.00	**Meters**
Maximum Elevation	6,800.00	**Feet**	2,073.00	**Meters**

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 pinon (*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.

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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 affects of sodium.

Key Environmental Factors

No Data

Climate Description

No Data

Land Use History

No Data

Cultural Features

No Data

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 62,636.23 **Acres** 25,348.08 **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 impreriled (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

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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.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGMENT 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

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
22406	*Astragalus rafaelensis*	San Rafael milkvetch	G2G3	S1	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
21230	*Mimulus eastwoodiae*	Eastwood monkey-flower	G3G4	S1	No
19160	*Hyla arenicolor*	Canyon Treefrog	G5	S2	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	No
21063	*Oreocarya osterhoutii*	Osterhout cat's-eye	G2G3	S2	No
21654	*Plecotus townsendii pallescens*	Townsend's Big-eared Bat Subsp	G4T4	S2	No
23491	*Adiantum capillus-veneris*	southern maiden-hair	G5	S2	No
24872	*Salix exigua* / Mesic Graminoids Shrubland	Coyote Willow/Mesic Graminoid	G5	S5	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	No
20021	*Tantilla hobartsmithi*	Southwestern Blackhead Snake	G5	S2?	No
18115	*Pediomelum aromaticum*	Paradox breadroot	G3	S2	No
22406	*Astragalus rafaelensis*	San Rafael milkvetch	G2G3	S1	No
19160	*Hyla arenicolor*	Canyon Treefrog	G5	S2	No
19162	*Phragmites australis* Western North America Temperate Semi-natural Herbaceous Vegetation	Western Slope Marsh	G5	S3	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	No
24552	*Aquilegia micrantha - Mimulus eastwoodiae* Herbaceous Vegetation	Hanging Gardens	G2G3	S2S3	No
23491	*Adiantum capillus-veneris*	southern maiden-hair	G5	S2	No
22735	*Astragalus piscator*	Fisher Towers milkvetch	G2G3	S1	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
24946	*Pinus edulis - Juniperus osteosperma / Coleogyne ramosissima* Woodland	West Slope Pinon Woodland	G3	S2	No
20453	*Astragalus linifolius*	Grand Junction milkvetch	G3Q	S3	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
24600	*Populus deltoides* ssp. *wislizeni / Rhus trilobata* Woodland	Fremont's Cottonwood Riparian Forests	G3	S3	No
18216	*Eleocharis rostellata* Herbaceous Vegetation	Emergent Wetland	G3	S2	No

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22091	*Frasera paniculata*	tufted green gentian	G4	S1	No
19709	*Forestiera pubescens* Shrubland	Foothills Riparian Shrubland	G1G2	S1	No
18046	*Schoenoplectus maritimus* Herbaceous Vegetation	Emergent Wetland (Marsh)	G4	S2	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	No
19160	*Hyla arenicolor*	Canyon Treefrog	G5	S2	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	Yes
18668	*Vireo vicinior*	Gray Vireo	G4	S2B	No
19709	*Forestiera pubescens* Shrubland	Foothills Riparian Shrubland	G1G2	S1	No
19709	*Forestiera pubescens* Shrubland	Foothills Riparian Shrubland	G1G2	S1	No
21725	*Falco peregrinus anatum*	American Peregrine Falcon	G4T4	S2B	No
21725	*Falco peregrinus anatum*	American Peregrine Falcon	G4T4	S2B	No
19709	*Forestiera pubescens* Shrubland	Foothills Riparian Shrubland	G1G2	S1	No
19709	*Forestiera pubescens* Shrubland	Foothills Riparian Shrubland	G1G2	S1	No
21230	*Mimulus eastwoodiae*	Eastwood monkey-flower	G3G4	S1	No
21725	*Falco peregrinus anatum*	American Peregrine Falcon	G4T4	S2B	No
24780	*Pinus edulis - Juniperus osteosperma / Purshia stansburiana* Woodland	Xeric Western Slope Pinyon-Juniper Woodlands	G4?	S3?	No
24362	*Oreocarya longiflora*	long-flower cat's-eye	G3	S3	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
24340	*Astragalus coltonii* var. *moabensis*	Colton milkvetch	G4T3?	S2	No
21035	*Lygodesmia doloresensis*	Dolores River skeletonplant	G1G2	S1	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
22735	*Astragalus piscator*	Fisher Towers milkvetch	G2G3	S1	No
22735	*Astragalus piscator*	Fisher Towers milkvetch	G2G3	S1	No
22406	*Astragalus rafaelensis*	San Rafael milkvetch	G2G3	S1	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
21063	*Oreocarya osterhoutii*	Osterhout cat's-eye	G2G3	S2	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
19001	*Penstemon utahensis*	Utah penstemon	G4	S2	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
17400	*Gilia haydenii*	San Juan gilia	G3	S2	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
40681	*Astragalus equisolensis*	horseshoe milkvetch	G5T1	S1	No
20954	*Enneapogon desvauxii*	spike pappusgrass	G5	S1	No
24881	*Pinus edulis / Pseudoroegneria spicata* Woodland	Xeric Western Slope Pinyon-Juniper Woodlands	G4	S4	No
17400	*Gilia haydenii*	San Juan gilia	G3	S2	No
19709	*Forestiera pubescens* Shrubland	Foothills Riparian Shrubland	G1G2	S1	No
23346	*Erigeron kachinensis*	kachina daisy	G2	S1	No

REFERENCES

Level 4 Potential Conservation Area (PCA) Report

Name Gateway **Site Code** S.USCOHP*146

Reference ID	Full Citation
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. chinenesis, 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.

VERSION

Version Date 12/10/2008

Version Author Lyon, M.J.

Disclaimer

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