

Level 4 Potential Conservation Area (PCA) Report

Name San Juan River at Trujillo

Site Code S.USCOHP*25833

IDENTIFIERS

Site ID 2274 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 370751N
 State Colorado Longitude 1070318W

<u>Quad Code</u>	<u>Quad Name</u>
37107-B1	Oakbrush Hill
37107-A1	Trujillo

County

Archuleta (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
14080101	Upper San Juan

SITE DESCRIPTION

Minimum Elevation	6,520.00 Feet	1,987.30 Meters
Maximum Elevation	6,740.00 Feet	2,054.35 Meters

Site Description

The San Juan River is a major tributary to the Colorado River in the southwest United States, whose headwaters begin in Mineral and Archuleta counties in Colorado. Within the site, the river flows 7.5 miles generally north to south, passing through canyon, mesa and foothill topography in the south-central part of Archuleta County. Several miles below the site to the southwest, the river enters Navajo Reservoir at the state line. The river passes through mostly privately owned properties, and a few small parcels belonging to the US Forest Service and the Southern Ute Indian Tribe. The river flows alternately through narrow canyons and broad valleys, and the channel migrates over time within its floodplain, especially in the broader valleys where it is less constricted by topography. The natural flooding regime in this portion of the San Juan River above Navajo Reservoir is intact, with the exception of many small irrigation diversions. The river carries a high bedload of cobble and gravel, depositing these materials on many large islands and point bars which in turn support pioneering sandbar willow (*Salix exigua*), and narrowleaf cottonwood (*Populus angustifolia*) saplings. In several places, stands of silver buffaloberry (*Shepherdia argentea*) and sandbar willow occur in the understory of a cottonwood gallery on the first terrace above the river. The silver buffaloberry is in dense stands, often along both sides of the river, with a nearly contiguous component of sandbar willow mixed in. Hay grasses such as cheatgrass, smooth brome, and Kentucky bluegrass (*Bromus tectorum*, *Bromus inermis*, and *Poa pratensis*) nearly always dominate the herbaceous understory, along with weedy forbs like musk thistle (*Carduus nutans*), oxeye daisy (*Leucanthemum vulgare*), and yellow sweetclover (*Melilotus officinalis*). Where cattle have not grazed regularly or cannot access the riparian zone, the riparian cottonwood-willow-buffaloberry community tends to be more dense and vigorous. Under the mature cottonwood canopy on the terrace, a mid-story canopy of boxelder (*Acer negundo* var. *interius*) may occur, and the native vine western white clematis (*Clematis ligusticifolia*) often densely climbs all over the silver buffaloberry and sandbar willow on the riverbank. Hydrophytic vegetation such as common spikerush (*Eleocharis palustris*) may exist in small, patchy fringes along the river. In general, the terraces within the floodplain of the lower San Juan River typically support a patchwork of narrowleaf cottonwood galleries, often with a subcanopy of Rocky Mountain juniper (*Juniperus scopulorum*) and scattered boxelder, and a riparian shrub layer dominated by sandbar willow, patches of silver buffaloberry, and a mix of other riparian shrubs on the terraces. Periodically along the river, the native vegetation at the riverbanks has been replaced with hay meadows, pastures or residential development, only to have stands of riparian vegetation reappear downstream and between openings. This pattern is typical and continues down the length of the San Juan River from Pagosa Springs to Navajo Reservoir. Adjacent hillsides along the river have frequent sandstone and shale outcrops, and are dominated by Rocky Mountain juniper, Utah juniper (*Juniperus osteosperma*), skunkbush sumac, mountain mahogany (*Cercocarpus* spp.), and ponderosa pine. A small population of roundtail chub (*Gila robusta*) occupies a 22 mile stretch of the San Juan River between the small community of Trujillo and Navajo Reservoir, as documented by an electroshocking survey. However, the presence of smallmouth bass (*Micropterus*

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dolomieu) poses a significant threat to the ongoing viability of this small population.

Key Environmental Factors

The surface geology of the upper half of the site is mapped as a mix of Mancos shale and Mesaverde Group, Undivided, which is composed of sandstone and shale. The lower half then enters a long stretch of Mesaverde Group, afterwards transitioning into Pictured Cliffs Sandstone and Lewis Shale (Tweto 1979). Soils within the floodplain are alluvial, with cobble and large sandy deposits on the floodplain, point bars, banks, and on the first terrace. Rounded cobbles pave the riverbed averaging 4"-15" in diameter. Soils on the first terrace are characterized by a relatively shallow horizon of sandy loam, often mottled and with few roots, over a mix of cobble, gravel and sand.

Climate Description

No Data

Land Use History

No Data

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 01/06/2006

Designer Freeman, K.M.

Boundary Justification

The boundary incorporates an area that will allow natural hydrological processes such as seasonal flooding, channel migration, and sediment deposition to continue, and to maintain viable populations of the riparian communities along the San Juan River. The broad floodplain and the steep slopes adjacent to the occurrences that would most likely impact the riparian zone if altered are also included. The boundary also reflects an approximate 1,000 foot buffer, which includes nearby roads, houses, and hay meadows where surface runoff may contribute excess nutrients, sediment (Karr and Schlosser 1978), and weed invasion. It should be noted that all the hydrological processes necessary to support the riparian communities are not fully contained by the site boundaries. Given that the riparian communities are dependent on natural hydrological processes associated with the San Juan River, upstream activities such as water diversions and impoundments, improper livestock grazing, logging, and development are detrimental to the hydrology of the riparian area. Although this site was not designed for the roundtail chub (*Gila robusta*) occurrence, these riparian communities also may provide adequate riparian vegetation for cover and possible prey (insect) needs for the fish habitat, though this may not be sufficient to ensure the persistence of the population. This boundary indicates the minimum area that should be considered for any conservation management plan.

Primary Area 1,412.29 Acres

571.53 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B4: Moderate Biodiversity Significance

Biodiversity Significance Comments

The site supports two fair (C-ranked) occurrences of the globally vulnerable (G3/S3) narrowleaf cottonwood / strapleaf willow - silver buffaloberry (*Populus angustifolia* / *Salix ligulifolia* - *Shepherdia argentea*) riparian forest. This occurrence is common on the terraces of alluvial floodplains in broad, low-elevation river valleys, and is found within Colorado in western and southwestern counties. As of 2005, several known occurrences are within Archuleta County along the Piedra River and the San Juan River.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

Residential development on 5-40 acre parcels, and agricultural development in the form of irrigated pastures, hay meadows, and livestock grazing are the most common land uses. Fishing access points may occur along the SUIT lands. Irrigation diversions are common, and adjacent upland terraces are commonly irrigated for hay meadows or irrigated pasture. Scattered residences as well as clustered residential areas also occur, and a historic cemetery exists within the southernmost portion of the site. Trujillo Road (County Road 500), a maintained gravel road, parallels the San Juan River. River rafting trips float through this stretch of river, but typically do not disembark within the riparian zone during their trips.

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Natural Hazard Comments

No Data

Exotics Comments

Several specimens of saltcedar (*Tamarix ramosissima*) were located in the southernmost part of the site, and taking immediate steps to eradicate the saltcedar is essential to prevent further spread of this very invasive, quickly spreading species. Unfortunately, larger populations of saltcedar are known to occur downstream at Navajo Reservoir, but eradication would benefit the community occurrences and prevent further spread. The herbaceous layer within the riparian zone along most of the San Juan River consists of mostly weedy species, which is a common finding in low elevation riparian zones that have experienced heavy grazing over many years (Carsey et al. 2003). Weeds commonly found include but are not limited to: cheatgrass (*Bromus tectorum*), foxtail barley (*Hordeum jubatum*), reedtop (*Agrostis gigantea*), musk thistle (*Carduus nutans*), black medic (*Medicago lupulina*), yellow sweetclover (*Melilotus officinalis*), oxeye daisy (*Leucanthemum vulgare*), common dandelion (*Taraxacum officinale*), rough cocklebur (*Xanthium strumarium*), and whitetop (*Cardaria draba*). Other species occurring on the terraces but not necessarily within the communities include alfalfa (*Medicago sativa*), field bindweed (*Convolvulus arvensis*), white clover (*Trifolium repens*), tumble mustard (*Sisymbrium* sp.) and chicory (*Cichorium intybus*). In addition, smallmouth bass (*Micropterus dolomieu*) have been identified as a potential predatory species for the roundtail chub within the river (Japhet 2003).

Offsite

No Data

Information Needs

This area could serve as excellent restoration projects focusing on maintenance of native riparian shrub cover and eradication of noxious weeds and non-native grasses. Landowners may benefit from restoration assistance programs provided by the Colorado Division of Wildlife-sponsored Southwest Wetlands Focus Group, or the Natural Resources Conservation Service (NRCS).

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>
24496	<i>Populus angustifolia</i> / <i>Salix ligulifolia</i> - <i>Shepherdia argentea</i> Woodland	Narrowleaf Cottonwood Riparian Forests	G3	S3	Yes
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REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
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169400	Japhet, M. 2003. Archuleta County Biological Inventory. Personal communication to J. Sovell of the Colorado Natural Heritage Program.
193578	NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.6. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer . (Accessed: December 8, 2005).
193472	Sovell, J., P. Lyon, and L. Grunau. 2003. Final Report: Upper San Juan Biological Assessment. Colorado Natural Heritage Program, Fort Collins, CO.
193555	State of Colorado, Department of Agriculture. No date. State Conservation Board Noxious Weed Program: Archuleta County. << http://www.ag.state.co.us/CSD/Weeds/mapping/counties/Archuleta.html >> Accessed 7 Nov 2005.
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.

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ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 01/06/2006

Version Author Freeman, K.M.

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