

# Level 4 Potential Conservation Area (PCA) Report

Name San Juan River at Carracas

Site Code S.USCOHP\*25834

## IDENTIFIERS

Site ID 2275 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 370016N  
 State Colorado Longitude 1071619W

<u>Quad Code</u>	<u>Quad Name</u>
37107-A3	Carracas
36107-H3	Bancos Mesa

## County

Rio Arriba (NM)  
 Archuleta (CO)

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

## SITE DESCRIPTION

<b>Minimum Elevation</b>	6,120.00	<b>Feet</b>	1,865.38	<b>Meters</b>
<b>Maximum Elevation</b>	6,150.00	<b>Feet</b>	1,874.52	<b>Meters</b>

## Site Description

The San Juan River at Carracas site consists of a broad river floodplain associated with the San Juan River in the southwest corner of Archuleta County. Mountains rise beyond the floodplain on the south bank of the river on the border with New Mexico. North of the river, rolling hills and mesas covered with pinon pine, juniper and sagebrush (*Pinus edulis*, *Juniperus* spp. and *Artemisia* spp.) rise gently from the floodplain to an elevation of nearly 8,000 ft. The San Juan River is very active in this reach, with many signs of channel migration across the floodplain. The floodplain is readily accessible by the river, and signs of recent seasonal flooding include scouring, sediment deposition, and drift lines. Many old, abandoned or secondary river channels occur within the larger floodplain, contributing to a high diversity of habitats, including riparian forests, scrub-shrublands, and emergent wetlands. In the immediate floodplain, secondary or abandoned channels often hold standing water or saturated soils which support stands of silver buffaloberry (*Shepherdia argentea*), Pacific willow (*Salix lucida* ssp. *lasiandra*), sandbar willow (*Salix exigua*), and narrowleaf cottonwood (*Populus angustifolia*) saplings, and herbaceous hydrophytic species such as baltic rush (*Juncus balticus*) and cattail (*Typha* spp.). Gravel bars in the immediate floodplain are dominated by pioneering cottonwood saplings and sandbar willow, with scattered silver buffaloberry shrubs. The riparian vegetation is dominated by a large, broad mosaic of cottonwood/silver buffaloberry woodland, cottonwood - Rocky Mountain juniper woodland (*Populus* spp. - *Juniperus scopulorum*), and silver buffaloberry shrubland associations. The secondary terraces are dominated by several cottonwood species including Rio Grande cottonwood (*Populus deltoides* ssp. *wislizenii*), narrowleaf cottonwood, and lanceleaf cottonwood (*Populus x acuminata*) with Rocky Mountain juniper in an open canopy. The understory is very weedy, with cheatgrass, smooth brome, and sweetclover (*Bromus tectorum*, *Bromus inermis*, and *Melilotus* spp.) being very common especially on drier ground. An old railroad grade, slightly higher than the surrounding floodplain, runs through the site on the north bank and contributes to the microtopography in the area. The associated soil disturbance may have provided access for invasive weedy species noted on the higher, drier areas, but also supports sporadic hairy false golden-aster (*Heterotheca villosa*) and an unidentified cactus species. Although the entire north bank of the river has been previously grazed and is invaded by a weedy herbaceous layer, the tree and shrub layers are native, vigorous, and regenerating. The south bank is largely inaccessible except by boat, and appears to be in better condition with more dense woody growth and fewer weeds. Russian olive (*Elaeagnus angustifolia*) occurs infrequently on both banks. A major county road occurs within 1/4 mile of the site, and irrigation diversions and agricultural practices upstream and downstream of the site create a fragmentation of riparian communities along the banks of the San Juan River. Navajo Reservoir begins one mile downstream of the site when water levels are normal, and Navajo Dam is more than 15 miles downriver. A small population of roundtail chub (*Gila robusta*) occupies a 22 mile stretch of the San Juan River between Navajo Reservoir and the small community of

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Trujillo upriver, as documented by an electroshocking survey. However, the presence of smallmouth bass (*Micropterus dolomieu*) poses a significant threat to the ongoing viability of this small population. The San Juan River channel has migrated significantly since it was photo-revised on the 1971 USGS 7.5' topographic quadrangle map, and currently is quite active and braided, supporting many areas of bare sandbars and islands, cobble point bars, and pioneering sandbar willow colonies. Many ill-defined secondary and overflow channels occur within the site due to the migratory activity of the main channel. This creates a very interesting mosaic of microtopography and habitats.

## Key Environmental Factors

The surface geology is mapped to show mostly Modern Alluvium formation (comprised of unconsolidated surficial deposits and rocks) in the upper half of the site and on the north side of the river channel, and San Jose formation (comprised of siltstone, shale and sandstone) in the lower half and on the south side of the river channel (Tweto 1979). A soil survey has not been prepared for this area of Archuleta County, but onsite soil investigations show the immediate floodplain is made up of finer soils such as silt and sand, as well as gravels. Secondary terraces consist of finer soils as well. The riverbed and banks consist of gravels and cobbles. Old, abandoned or secondary channels are saturated, with gleyed silty clay.

## Climate Description

No Data

## Land Use History

No Data

## Cultural Features

No Data

## SITE DESIGN

Site Map Y - Yes

Mapped Date 01/09/2006

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. It should be noted that all the hydrological processes necessary to support the riparian communities and the fish population are not fully contained by the site boundaries. Given that the riparian communities are dependent on natural hydrological processes associated with the river and its tributaries, upstream activities such as water diversions and impoundments, improper livestock grazing, 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 273.15 Acres

110.54 Hectares

## SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

## Biodiversity Significance Comments

The site supports a fair (C-ranked) occurrence of the globally imperiled (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 riparian communities supported within the site include a fair (C-ranked) occurrence of the globally imperiled (G2G3/S2S3) narrowleaf cottonwood - Rocky Mountain juniper (*Populus angustifolia* - *Juniperus scopulorum*) montane riparian forest, and a fair (C-ranked) occurrence of the state rare (G3G4/S1) silver buffaloberry (*Shepherdia argentea*) foothills riparian shrubland.

Other Values Rank No Data

## Other Values Comments

No Data

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## LAND MANAGEMENT ISSUES

### Land Use Comments

Residential housing and agricultural development in the form of irrigated pastures, hay meadows, and livestock grazing are the most common land uses. Fishing access points occur along the SUIT-owned lands. Irrigation diversions are common along the entire length of the San Juan River, and adjacent upland terraces are commonly irrigated for hay meadows or irrigated pasture. Scattered residences and outbuildings also occur. An old railroad grade passes through the site, and Trujillo Road (County Road 500), a maintained gravel road, borders a portion of the site. River rafting trips float through this stretch of river, but typically do not disembark within the riparian zone during their trips. In high water years, Navajo Reservoir begins one mile downstream of the site boundary.

### Natural Hazard Comments

No Data

### Exotics Comments

Russian olive (*Elaeagnus angustifolia*) occurs within the site and saltcedar (*Tamarix ramosissima*) is known to occur downstream at Navajo Reservoir. Taking immediate steps to eradicate existing plants and establish a monitoring program to track the potential spread of these very invasive, quickly spreading species would be beneficial to the native riparian communities. The riparian communities along the San Juan River typically exhibit an herbaceous layer that is quite weedy and lacking native species due to the many years of grazing pressure and agricultural development. Typical weeds found within the understory include but are not limited to: cheatgrass (*Bromus tectorum*), Kentucky bluegrass (*Poa pratensis*), musk thistle (*Carduus nutans*), black medic (*Medicago lupulina*), yellow sweetclover (*Melilotus officinalis*), white sweetclover (*Melilotus alba*), common dandelion (*Taraxacum officinale*), and salsify (*Tragopogon dubius*). In addition, smallmouth bass (*Micropterus dolomieu*) have been identified as a potential predatory species for the roundtail chub within the river (Japhet 2003).

### Offsite

Weeds, non-native fish populations and recreational use increase dramatically one mile downstream at Navajo Reservoir.

### 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 State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>	<u>Global Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
24496	<i>Populus angustifolia</i> / <i>Salix ligulifolia</i> - <i>Shepherdia argentea</i> Woodland	Narrowleaf Cottonwood Riparian Forests	G3	S3	No
17439	<i>Shepherdia argentea</i> Shrubland	Foothills Riparian Shrubland	G3G4	S1	No
24963	<i>Populus angustifolia</i> - <i>Juniperus scopulorum</i> Woodland	Montane Riparian Forest	G2G3	S2S3	Yes

## REFERENCES

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## Reference ID

## Full Citation

160903	Carsey, K., D. Cooper, K. Decker, D. Culver, and G. Kittel. 2003. Statewide wetlands classification and characterization: Wetland plant associations of Colorado. Prepared for Colorado Department of Natural Resources, Denver, CO by Colorado Natural Heritage Program, Fort Collins, CO.
193633	Freeman, K.M., March, M.A. and D.R. Culver. 2006. Final Report: Survey of Critical Wetlands and Riparian Areas in Archuleta County. Colorado Natural Heritage Program, Fort Collins, CO.
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 <a href="http://www.natureserve.org/explorer">http://www.natureserve.org/explorer</a> . (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. << <a href="http://www.ag.state.co.us/CSD/Weeds/mapping/counties/Archuleta.html">http://www.ag.state.co.us/CSD/Weeds/mapping/counties/Archuleta.html</a> >> 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.

## ADDITIONAL TOPICS

### Additional Topics

No Data

## VERSION

Version Date 01/09/2006

Version Author Freeman, K.M.

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