Level 4 Potential Conservation Area (PCA) Report

Name Lower Piedra River **Site Code** S.USCOHP*25831

IDENTIFIERS

Site ID 2272 **Site Class** PCA

Site Alias None

Network of Conservation Areas (NCA)

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

LOCATORS

Nation United States **Latitude** 370944N

State Colorado **Longitude** 1072100W

Quad Code	Quad Name
37107-B3	Chimney Rock

County

Archuleta (CO)

Watershed Code	Watershed Name
14080102	Piedra

SITE DESCRIPTION

Minimum Elevation	6,240.00	**Feet**	1,901.95	**Meters**
Maximum Elevation	6,800.00	**Feet**	2,072.64	**Meters**

Site Description

The Piedra River flows north to south through canyon, mesa and foothill topography in the west-central part of Archuleta County, before entering Navajo Reservoir at the state line to the south. The river passes through U.S. Forest Service lands, Southern Ute tribal lands, and privately owned properties. The Piedra River meanders well within its broad floodplain, and carries a high bedload of cobble and gravel, depositing these materials on many large islands and point bars. The floodplain along the Piedra River typically supports large narrowleaf cottonwood (*Populus angustifolia*) galleries with a riparian shrub layer dominated by a mix of willow species (*Salix* spp.), and patches of silver buffaloberry (*Shepherdia argentea*). At the upper end of the site, two miles south of where Highway 160 crosses the Piedra River, the foothills of the HD Mountains on the west bank and the ridge of Chimney Rock on the east bank begin to pinch the floodplain of the river before drawing away downstream and widening the floodplain again. Within this pinched floodplain area, a moderately dense gallery of narrowleaf cottonwood occurs with an understory of riparian shrubs. At the immediate river's edge within the bankfull channel and on cobble bars and islands, the vegetation is dominated by pioneering sandbar willow (*Salix exigua*), narrowleaf cottonwood saplings, and silver buffaloberry. The first terrace above the river is dominated by sandbar willow, mountain willow (*Salix monticola*), and silver buffaloberry, with an overstory of mature narrowleaf cottonwood and scattered boxelder (*Acer negundo* var. *interius*) and Rocky Mountain juniper (*Juniperus scopulorum*). Cottonwood saplings are present throughout the first terrace, though never in dense patches. This pattern is typical and continues down the length of the Piedra River. Some areas support a dominating cottonwood-juniper overstory, some areas have high concentrations of cottonwood with a silver buffaloberry shrub layer, and other areas are mostly cottonwood with sandbar willow. Other typical species often occurring on the first terrace with cottonwood and silver buffaloberry include river hawthorn (*Crataegus rivularis*), Woods' rose, (*Rosa woodsii*), skunkbush sumac (*Rhus trilobata*), Colorado barberry (*Berberis fendleri*), and scattered ponderosa pine (*Pinus ponderosa*). The herbaceous understory is nearly always dominated by hay grasses such as cheatgrass, smooth brome, and Kentucky bluegrass (*Bromus tectorum, Bromus inermis,* and *Poa pratensis*) with weedy forbs like thistles (*Cirsium* sp. and *Carduus* sp.), oxeye daisy (*Leucanthemum vulgare*) and yellow sweetclover (*Melilotus officinalis*). The native vine western white clematis (*Clematis ligusticifolia*) is often found trailing and climbing densely through the buffaloberry, willows, and hawthorns along the bankfull level of the floodplain. The uplands on the valley floor above the first terrace are often open, weedy meadows or irrigated pastures or hay meadows. Adjacent hillsides have sandstone and shale outcrops, and are dominated by Rocky Mountain juniper, Utah juniper (*Juniperus utahensis*), skunkbush sumac, mountain mahogany (*Cercocarpus* spp.), and ponderosa pine.

Key Environmental Factors

The upper end of the site is mapped as Pictured Cliffs Sandstone and Lewis Shale formation. The Piedra River then passes through a section of Kirtland Shale and Fruitland formation (shale, sandstone and major coal beds), and then a short section of Animas formation (sandstone, shale and conglomerate with abundant

volcanic materials). The entire lower half of the site is mapped as Modern Alluvium deposits (Tweto 1979). Soils all along the river and within the community are mapped as Riverwash, comprised of sand, gravel and cobble, usually mixed. The higher soils on the terraces are mapped as Pescar Sandy loams, derived from alluvium of mixed parentage (USDA 1981). Soils tested within the site are typically alluvial, with cobbles and sand deposits in the immediate floodplain, and cobble and finer sediments such as silty loam soils on the terraces just above the floodplain.

Climate Description

No Data

Land Use History

No Data

Cultural Features

Chimney Rock Archeological Area abuts the site to the east, and it is possible other historic Native American sites or artifacts may occur within the site. The Stollsteimer family, who settled the area in the late 1800's, built a small adobe Catholic chapel near the confluence of the Piedra River and Stollsteimer creek, which still stands.

SITE DESIGN

Site Map Y - Yes **Mapped Date** 01/03/2006

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 lower Piedra River. The broad floodplain and the steep slopes adjacent to the occurrence 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 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 Piedra River, upstream activities such as water diversions and impoundments, improper livestock grazing, and development are detrimental to the hydrology of the riparian area. This boundary indicates the minimum area that should be considered for any conservation management plan.

Primary Area 1,442.08 **Acres** 583.59 **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 to vulnerable (G2G3/S2S3) narrowleaf cottonwood - Rocky Mountain juniper (*Populus angustifolia - Juniperus scopulorum*) montane riparian forest. The site also 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. Several known occurrences are within Archuleta County along the Piedra River and the San Juan River. A fair (C-ranked) occurrence of the globally apparently secure (G4/S4) narrowleaf cottonwood / sandbar willow (*Populus angustifolia / Salix exigua*) riparian forest is also supported at this site.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGMENT ISSUES

Land Use Comments

Cattle, horse, and sheep/goat grazing is the most common land use. Fishing access points occur along the SUIT lands. Adjacent upland terraces are commonly irrigated for hay meadows or irrigated pasture, and scattered residences occur. Fosset Gulch Road, a maintained gravel road, parallels the Piedra River along the length of the site, and a portion of Highway 151 runs through the southern 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.

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Natural Hazard Comments

Western poison ivy (*Toxicodendron rydbergii*) is scattered throughout.

Exotics Comments

Several specimens of saltcedar (*Tamarix ramosissima*) and one Russian olive (*Elaeagnus angustifolia*) 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 both saltcedar and Russian olive species 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 Lower Piedra 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*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), prickly lettuce (*Lactuca serriola*), black medic (*Medicago lupulina*), yellow sweetclover (*Melilotus officinalis*), oxeye daisy (*Leucanthemum vulgare*), common dandelion (*Taraxacum officinale*), rough cocklebur (*Xanthium strumarium*), Russian thistle (*Salsola* sp.), tansy-mustard (*Descurainia* sp.), tumble mustard (*Sisymbrium* sp.) and redstem stork's bill (*Erodium cicutarium*). Other species occurring on the terraces but not necessarily within the communities include alfalfa (*Medicago sativa*), field bindweed (*Convolvulus arvensis*), and white clover (*Trifolium repens*).

Offsite

No Data

Information Needs

This area could be an excellent restoration project focusing on maintenance of native riparian shrub cover and eradication of noxious weeds and non-native grasses.

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element State ID	State Scientific Name	State Common Name	Global Rank	State Rank	Driving Site Rank
24738	*Populus angustifolia / Salix exigua* Woodland	Narrowleaf Cottonwood Riparian Forests	G4	S4	No
24496	*Populus angustifolia / Salix ligulifolia - Shepherdia argentea* Woodland	Narrowleaf Cottonwood Riparian Forests	G3	S3	No
24963	*Populus angustifolia - Juniperus scopulorum* Woodland	Montane Riparian Forest	G2G3	S2S3	Yes
24496	*Populus angustifolia / Salix ligulifolia - Shepherdia argentea* Woodland	Narrowleaf Cottonwood Riparian Forests	G3	S3	No

REFERENCES

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.
172808	J. R. Karr and I. J. Schlosser. 1978. Water resources and the land-water interface. Science 201: 229-234.
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.
193423	USDA, SCS. 1981. Soil Survey of Piedra Area, Colorado; Parts of Archuleta, Hinsdale, La Plata, Mineral, and Rio Grande Counties. In cooperation with the United States Forest Service and the Colorado Agricultural Experiment Station.

ADDITIONAL TOPICS

Additional Topics

No Data

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VERSION

Version Date 01/03/2006

Version Author Freeman, K.M.

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