

# Level 4 Potential Conservation Area (PCA) Report

Name Sand Creek

Site Code S.USCOHP\*8443

## IDENTIFIERS

Site ID 1693 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 372151N  
 State Colorado Longitude 1064934W

<u>Quad Code</u>	<u>Quad Name</u>
37106-C7	Blackhead Peak
37106-D7	Wolf Creek Pass

## County

Archuleta (CO)

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

## SITE DESCRIPTION

<b>Minimum Elevation</b>	8,000.00	<b>Feet</b>	2,438.00	<b>Meters</b>
<b>Maximum Elevation</b>	8,840.00	<b>Feet</b>	2,694.00	<b>Meters</b>

## Site Description

The Sand Creek site encompasses a montane riparian area along Sand Creek, a tributary of the East Fork of the San Juan River, in the northeast corner of Archuleta County. Sand Creek flows northwest through a moderately narrow canyon with steep slopes and over 400 feet in relief from rim to canyon bottom. The creek flows in a dynamic and active montane floodplain which carries a large cobble and gravel bedload. Narrowleaf cottonwood (*Populus angustifolia*) and sandbar willow (*Salix exigua*) are regenerating/pioneering on the cobble bars within the floodplain, and the secondary floodplain is lined by dense stands of mature thinleaf alder (*Alnus incana*), with pockets of mature cottonwoods and blue spruce (*Picea pungens*) providing an overstory. Various willows, including park willow, Drummond's willow and dewystem willow (*Salix monticola*, *S. drummondiana* and *S. irrorata*) also occur within the floodplain along the creek, and along with the alder provide a dense streamside canopy cover. The narrowleaf cottonwood / mixed willow community occurs in mosaic with a narrowleaf cottonwood - blue spruce / thinleaf alder community along the length of the occurrence. The herbaceous understory within the riparian zone is generally sparse, consisting of weedy species such as common dandelion (*Taraxacum officinale*), clover (*Trifolium* spp.) and various hay grasses, in addition to native mesic forbs and graminoids including bluejoint grass (*Calamagrostis canadensis*), field horsetail (*Equisetum arvense*) and Rocky Mountain willow herb (*Epilobium saximontanum*). This herbaceous layer is especially sparse close to the creek banks where the cobble is exposed with little soil development. Higher cobble terraces with better soil development occurring above the floodplain exhibit both upland and riparian herbaceous and woody species, with more dense herbaceous cover. The floodplain is broader at the lower end of the site near the confluence of Sand Creek/East Fork of San Juan River, and narrows as the elevation increases and the valley narrows. The lower end of the site is also near a major forest service road, and the area receives high recreational use including camping and horseback riding, but the riparian plant communities on Sand Creek at this location continue to be very productive and diverse. A trail follows the creek for a short distance from its confluence with the San Juan River at the forest service road before climbing onto the hill northeast of the creek. After two miles, the trail drops back down to the streamside and follows along the riparian area of Sand Creek. The recreational activity at the trailhead and along the trail could introduce new populations of non-native plants and increase erosion through reduction of vegetation cover and destabilization of the slope above the creek.

## Key Environmental Factors

The creek morphology is intact, and fluvial processes are dynamic and active. There is evidence of lateral movement by the creek in the form of secondary/abandoned channels. The creek carries a high cobble and gravel bedload, depositing it near the confluence with the East Fork of the San Juan River where the topography flattens and the valley widens. Sandy sediment deposition is also apparent within the floodplain and on the first terrace, and supports sparse native vegetation as well as weedy species in the herbaceous

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understory. The creekbanks are well vegetated by woody species, but the herbaceous cover is sparse due to the cobbly substrate. This type of dynamic channel with high amounts of sediment deposition and movement is a key feature for both the narrowleaf cottonwood community types found within the site.

## Climate Description

No Data

## Land Use History

No Data

## Cultural Features

No Data

## SITE DESIGN

Site Map P - Partial

Mapped Date 06/10/1997

Designer Kettler, S.M. and K.K. Fayette

## Boundary Justification

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 shrubland and forest along Sand Creek. It should be noted that the hydrological processes necessary to the riparian communities are not fully contained by the site boundaries. Given that the riparian communities are dependent on natural hydrological processes associated with Sand Creek and its tributaries, upstream activities such as water diversions, 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. The boundary also includes an approximate 1,000 foot buffer to control sedimentation, protect the aquatic and plant communities from direct disturbance such as trampling (Karr and Schlosser 1978), and to allow additional individuals to become established over time.

Primary Area 892.67 Acres

361.25 Hectares

## SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

## Biodiversity Significance Comments

This site contains a good (B-ranked) occurrence of the globally vulnerable (G3/S3) narrowleaf cottonwood / mixed willow (*Populus angustifolia* / *Salix (monticola, drummondiana, lucida)*) woodland. This woodland association is known from Colorado, Utah and Nevada, and is found on active floodplains of dynamic stream and river systems where flooding is frequent and alluvial material is regularly being deposited. Barren moist sandbars provide an excellent environment for the germination of both cottonwood and willow seed, and with its dynamic nature, it is not uncommon to see a patchwork of stands of different age classes. The herbaceous understory is typically sparse. A good (B-ranked) occurrence of the globally vulnerable (G3/S3) narrowleaf cottonwood - blue spruce / thinleaf alder (*Populus angustifolia - Picea pungens / Alnus incana*) montane riparian forest also occurs within this site. This plant association is a common riparian woodland in Colorado. Stands have a mixed deciduous-evergreen tree canopy with narrowleaf cottonwood and blue spruce as co-dominants. Frequently, other conifer trees are present, but not as abundant as blue spruce. The shrub understory is typically dense and diverse, but thinleaf alder is always present.

Other Values Rank No Data

## Other Values Comments

No Data

## LAND MANAGEMENT ISSUES

## Land Use Comments

The extreme downstream end of the site is impacted by heavy use at a popular Forest Road, trailhead, and campsite occurring adjacent to the downstream extent. Upstream, the creek is within the South San Juan Wilderness, and the only anthropogenic impacts are from the Quartz Ridge Trail (TR 570), which often runs uphill from the creek and as far away as 0.5 mile from the creek. The hydrology of Sand Creek is intact, and no logging occurs within the watershed due to Wilderness designation.

## Natural Hazard Comments

No Data

## Exotics Comments

The riparian understory has a sparse cover due to the cobbly substrate, but has a high percentage of weedy species such as common dandelion (*Taraxacum officinale*), clover (*Trifolium* spp.), and hay grasses such as

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orchardgrass (*Dactylis glomerata*), Kentucky bluegrass (*Poa pratensis*), timothy (*Phleum pratense*), and redtop (*Agrostis gigantea*).

## Offsite

Hydrological processes originating outside of the planning boundary, including water quality, quantity, timing and flow must be managed to maintain site viability.

## Information Needs

No Data

### 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>
24823	<i>Populus angustifolia</i> - <i>Picea pungens</i> / <i>Alnus incana</i> Woodland	Montane Riparian Forests	G3	S3	Yes
24808	<i>Populus angustifolia</i> / <i>Salix (monticola, drummondiana, lucida)</i> Woodland	Narrowleaf Cottonwood/Mixed Willows Montane Riparian Forest	G3	S3	Yes

### REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
172808	J. R. Karr and I. J. Schlosser. 1978. Water resources and the land-water interface. Science 201: 229-234.
170844	Randolph, D., Smith, Kettler, Redders, Roy, and Aitken. 1994. San Juan National Forest Riparian Site Survey.
193472	Sovell, J., P. Lyon, and L. Grunau. 2003. Final Report: Upper San Juan Biological Assessment. Colorado Natural Heritage Program, Fort Collins, CO.

### ADDITIONAL TOPICS

#### Additional Topics

No Data

### VERSION

<b>Version Date</b>	12/15/2005
<b>Version Author</b>	Freeman, K.M.

### Disclaimer

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