

# Level 4 Potential Conservation Area (PCA) Report

Name Middle Fourmile Creek

Site Code S.USCOHP\*25752

## IDENTIFIERS

Site ID 2259 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 371945N  
 State Colorado Longitude 1070011W

Quad Code Quad Name  
 37107-C1 Pagosa Springs

County  
 Archuleta (CO)

Watershed Code Watershed Name  
 14080101 Upper San Juan

## SITE DESCRIPTION

Minimum Elevation	7,420.00 Feet	2,261.62 Meters
Maximum Elevation	7,480.00 Feet	2,279.90 Meters

### Site Description

The middle section of Fourmile Creek is located in north-central Archuleta County southwest of Jackson Mountain and due north of downtown Pagosa Springs, and flows generally southeast through a narrow canyon with gently sloping, 200 foot high hillsides and a broad floodplain. The hillsides support dense coniferous forests of blue spruce, Engelmann spruce, Douglas-fir, and ponderosa pine (*Picea pungens*, *Picea engelmannii*, *Pseudotsuga menziesii* and *Pinus ponderosa*). Fourmile Creek has a moderate gradient just upstream of the site boundary, but flattens as the valley broadens. The creek is broad and somewhat shallow with small banks, and the channel has very good access to its floodplain. The creek is sinuous within the floodplain, and is exhibiting signs of fluvial and flooding processes including overbanking, sediment deposition, secondary channels, and debris transport. The creek bed is cobble, and over slightly higher gradients sandy deposits begin to support dense riparian shrubs such as bluestem willow, strappleaf willow and sandbar willow (*Salix irrorata*, *Salix ligulifolia* and *Salix exigua*), thinleaf alder (*Alnus incana*), and a dense herbaceous layer including cutleaf coneflower (*Rudbeckia laciniata* var. *ampla*) and white checker-mallow (*Sidalcea candida*). The creek is undercutting the sandy banks in some areas, and the roots of the willow species and streamside grasses such as Wheeler bluegrass, Kentucky bluegrass, and redtop (*Poa nervosa*, *P. pratensis*, and *Agrostis gigantea*) are barely holding the banks intact. Narrowleaf cottonwood (*Populus angustifolia*) mature trees and regenerating poles and saplings dominate the tree layer especially on the first terrace, and mid-aged and young blue spruce trees are also colonizing the terrace. Several exotic species inhabit the herbaceous layer on these broad terraces, including Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), and oxeye daisy (*Leucanthemum vulgare*) as well as non-native pasture grasses. Deer, elk and black bear are known to utilize the riparian zone. Unidentified fish were seen in the creek, and various birds were heard or seen including White-breasted Nuthatch (*Sitta carolinensis*), Red-tailed Hawk (*Buteo jamaicensis*), American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), and possibly an Olive-sided Flycatcher (*Contopus cooperi*) whose song was only heard once, and was not repeated for verification. Fourmile Creek has several major irrigation diversions above and below the site boundary. No recent logging was noted in the area, but a part-time residence with outbuildings occurs within the forest at the uppermost edge of the site, and environmental education tours are led through the community, crossing the creek in several places. A faint ranch road also crosses the community and the creek, and is still used infrequently for accessing parts of the ranch.

### Key Environmental Factors

The geology is mapped as Mesaverde Group, Undivided, consisting of sandstone and shale (Tweto 1979). Soils are mapped as Nunn loams, deep, well-drained soils derived from shale and sandstone, and found on floodplains and alluvial fans (USDA 1981). Soils on site are alluvial, consisting of rounded cobble with sandy deposits.

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## Climate Description

No Data

## Land Use History

No Data

## Cultural Features

No Data

## SITE DESIGN

Site Map Y - Yes

Mapped Date 12/30/2005

Designer Freeman, K.M.

## Boundary Justification

The boundary was drawn to incorporate the element occurrence, the immediate watershed supporting the occurrence, and an area that will allow natural hydrological processes such as seasonal flooding and sediment deposition to maintain the riparian woodland along Fourmile Creek. Buffers to the east and west include two irrigation ditches and the maintenance trails that occur alongside those ditches, where surface runoff from maintenance activities may contribute excess nutrients and sediment (Karr and Schlosser 1978), and may promote weed invasion. It should be noted that the hydrological processes necessary to the riparian community are not fully contained by the site boundaries. This boundary indicates the minimum area that should be considered for any conservation management plan.

Primary Area 65.58 Acres

26.54 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 (G2/S2) narrowleaf cottonwood / bluestem willow (*Populus angustifolia* / *Salix irrorata*) foothills riparian woodland. This community is an early-seral type, occurring on point bars and islands within the bankfull level of meandering streams. The presence of bluestem willow and sandbar willow (*Salix exigua*) are indicators of frequent flood events and regular sediment deposition (Carsey et al. 2003). As of 2005, this is one of only two documented occurrences of this community type in Archuleta County.

Other Values Rank No Data

## Other Values Comments

No Data

## LAND MANAGEMENT ISSUES

### Land Use Comments

A residence with outbuildings occurs at the very upper edge of the site, though the house is not inhabited year round. Irrigation diversions occur above and below the site, and environmental education trails and an old ranch road crisscross the community and the creek. Grazing also occurs in the area, and residential and agricultural activities occur adjacent to the site to the west. Wildlife usage is expected to be high.

### Natural Hazard Comments

No Data

### Exotics Comments

Exotic species occur frequently in the understory, including the weedy forbs Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), oxeye daisy (*Leucanthemum vulgare*), common dandelion (*Taraxacum officinale*), and white clover (*Trifolium repens*), and pasture grasses such as Kentucky bluegrass (*Poa pratensis*), reedtop (*Agrostis gigantea*), foxtail barley (*Hordeum jubatum*), and timothy (*Phleum pratense*).

### Offsite

Within 700 feet of the creek channel but 150 feet in elevation above the creek, atop the west slope of the creek valley, cultivated hay pastures, residential and agricultural buildings, and roads occur on Fourmile Ranch. Upstream, Forest Service property surrounds the ranch, and downstream the land is divided into large, privately owned parcels. Forest Road 646 crosses the creek 0.80 of a mile upstream of the site. This road crossing washed out during high spring flows in 2005, and subsequently contributed large amounts of sediment to the stream. One of the main tributaries to Fourmile Creek is Snowball Creek, which is actually a diversion from Turkey Creek 4.5 miles northeast of the site. This, along with many irrigation diversions above and below the site represent that the flows in Fourmile Creek are highly manipulated.

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## Information Needs

The regular environmental education programs provide an excellent opportunity to do basic documentation on species composition, weed lists, and the ongoing health and vigor of thinleaf alder, which is showing evidence of branch dieback here, as it is across the county in 2005.

## ASSOCIATED ELEMENTS OF BIODIVERSITY

<u>Element</u>			<u>Global Rank</u>	<u>State Rank</u>	<u>Driving Site Rank</u>
<u>State ID</u>	<u>State Scientific Name</u>	<u>State Common Name</u>			
24827	<i>Populus angustifolia</i> / <i>Salix irrorata</i> Woodland	Foothills Riparian Woodland	G2	S2	Yes

## REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
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.
193575	Sibley, David A. 2000. National Audubon Society The Sibley Guide to Birds, First Edition. New York: Chanticleer Press, Inc.
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

## VERSION

<b>Version Date</b>	12/30/2005
<b>Version Author</b>	Freeman, K.M.

## Disclaimer

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