

Level 4 Potential Conservation Area (PCA) Report

Name South Vallejos Creek (Vallejos Creek No. 2)

Site Code S.USCOHP*25232

IDENTIFIERS

Site ID 2170 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 370614N
State Colorado Longitude 1051344W

<u>Quad Code</u>	<u>Quad Name</u>
37105-A3	La Valley
37105-A2	Culebra Peak

County

Costilla (CO)

<u>Watershed Code</u>	<u>Watershed Name</u>
13010002	Alamosa-Trinchera

SITE DESCRIPTION

Minimum Elevation	-	Feet	-	Meters
Maximum Elevation	-	Feet	-	Meters

Site Description

This site includes South Vallejos Creek from its headwaters to its confluence with North Vallejos Creek, plus a 0.25 mile buffer on each side of the creek. The creek is on average steep (11% grade) and narrow, with an average flow of only several cubic feet per second. The site spans from the subalpine to montane zones, flowing through mainly spruce-fir then mixed conifer forests with varying amounts of aspen mixed in. Riparian areas tend to have proportionally higher amounts of aspen. Along the creek there are several to many small stands of willow (especially *Salix drummondiana* but also *S. planifolia* at higher elevations and *S. lucida*, *S. geyeriana*, and *S. monticola* in the montane zone) with an understory including *Deschampsia caespitosa*, *Calamagrostis canadensis*, and *Senecio triangularis*. In the lowest portion of the site there are small stands of *Populus angustifolia* with mixed *Salix* in the understory. South Vallejos Creek supports an historic, genetically pure population of Rio Grande cutthroat that is at risk (1999 survey; no barrier; brook trout and brown trout present; Alves 2004). Rio Grande Cutthroat have also been found in North Vallejos Creek, but it is not certain if they are pure strain (Alves 1998, Alves 2004 pers. comm. to J. Sanderson) and rainbow trout, which interbreed with cutthroat, have been found in North Vallejos Creek. Therefore, mixing between North and South Vallejos Creek should be avoided. To protect the population in South Vallejos Creek, a fish barrier should be installed above the confluence with North Vallejos Creek. In the future, if rainbow trout are eliminated from North Vallejos Creek and if the cutthroat in North Vallejos Creek are found to be genetically pure, a barrier could be built at some point below the confluence of the two creeks. Note: John Alves is currently doing genetic tests on tissue from fish from all of the creeks on the ranch. Results from these tests should be obtained as soon as they are available. There are currently beaver in South Vallejos Creek, but they are few in number. Beaver activity (e.g., building dams, harvesting trees) should not be inhibited since they generally contribute to riparian habitat and diversity. Along South Vallejos Creek beaver may be particularly valuable when their ponds retain sediment that has run off from logging roads.

Key Environmental Factors

No Data

Climate Description

No Data

Land Use History

Much of the forest in the South Vallejos Creek watershed has been logged, and there is an extensive network of roads associated with the logged areas. Many of the roads are eroding badly and dumping sediments into the stream. Immediate action should be taken to stabilize the roads to reduce the non-point source pollution. A culvert recently washed out on the road leading to the upper half of this site. It would be best if this culvert were not re-built and the road in the upper portions of the site were abandoned. However, before abandoning the road, the road network above this point should be surveyed for areas of high sediment runoff. If high

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erosion areas are found on the roads, they should be treated (water bars, planting with native seed mix) before abandoning the roads.

Cultural Features

No Data

SITE DESIGN

Site Map Y - Yes

Mapped Date 11/19/2004

Designer Sanderson, J.S.

Boundary Justification

The boundary incorporates an area that will allow natural ecological processes such as large woody debris recruitment, adequate canopy cover (to regulate stream temperature), and new channel formation to maintain viable populations of the Rio Grande cutthroat in South Vallejos Creek. The site includes the area that has the most immediate and direct impact on the creek. Activities that negatively impact the creek (e.g., cattle grazing, logging, road construction) should be restricted from this area. The boundary indicates the minimum area that should be considered for any conservation management plan. The entire watershed above the site also impacts the creek, particularly by contributing runoff to the creek. Although the entire watershed is not within the primary boundary, any activity in the watershed (e.g., logging, road building) should be assessed for its potential impact on the Rio Grande cutthroat.

Primary Area 2,245.16 Acres

908.59 Hectares

SITE SIGNIFICANCE

Biodiversity Significance Rank B3: High Biodiversity Significance

Biodiversity Significance Comments

This site supports a fair (C-ranked), genetically pure occurrence of a globally vulnerable (G4T3/S3) fish subspecies. The population is C-ranked because there is no barrier preventing the intrusion of additional non-native fish, and there are currently both brown trout and brook trout found among the cutthroat. The Biodiversity Rank was elevated from B4 to B3 because this is a historic (i.e., not stocked) population of genetically pure fish. Recent changes in fish management in New Mexico make protection of pure-strain populations in Colorado especially critical (Alves 2004 pers. comm. to J. Sanderson). The Rio Grande cutthroat trout's range once included the entire Rio Grande and Pecos River watersheds, and possibly the upper Canadian River as well (Trotter 1987). In Colorado, the species occupies less than 1% of its former range (Alves 1996), and wild, genetically pure stock populations are especially imperiled. Artificial habitat including wells, farm ponds, and extensive canal systems as well as human activities including dewatering, fishing and stocking, transbasin diversions, release of domestic sewage, stream channelization, and agricultural chemical applications have greatly modified the original aquatic ecosystem of the San Luis Valley (Zuckerman 1984). These modifications may have contributed directly to the decline in range of the native fishes of the Rio Grande drainage. Free-flowing streams with good quality water, healthy banks, and streamside vegetation within the upper Rio Grande watershed are vital habitat for this subspecies of trout.

Other Values Rank No Data

Other Values Comments

No Data

LAND MANAGEMENT ISSUES

Land Use Comments

No Data

Natural Hazard Comments

No Data

Exotics Comments

No Data

Offsite

No Data

Information Needs

No Data

ASSOCIATED ELEMENTS OF BIODIVERSITY

Element			Global	State	Driving
State ID	State Scientific Name	State Common Name	Rank	Rank	Site Rank

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 20205 *Oncorhynchus clarkii virginalis* Rio Grande Cutthroat Trout G4T3 S3 Yes

REFERENCES

<u>Reference ID</u>	<u>Full Citation</u>
171045	Alves, J. 1998. Status of Rio Grande cutthroat trout in Colorado. Department of Natural Resources, Colorado Division of Wildlife. Denver, Colorado. March 30, 1998.
192620	Alves, J. 2004. Personal communication with John Sanderson. Colorado Natural Heritage Program, Fort Collins, CO.
184652	Alves, J.A. 1996. Fisheries Inventories: Rio Grande River Basin. Unpublished Report to Colorado Department of Natural Resources-Division of Wildlife. Denver, CO 152 pp.
192655	Amaranthus, M.P., R.M. Rice, N.R. Barr, and R.R. Ziemer. 1985. Logging and forest roads related to increased debris slides in Southwestern Oregon. Journal of Forestry 83:229-233.
192659	Behnke, R.J. 1979. Values and protection of riparian ecosystems. The mitigation symposium: A national workshop on mitigating losses of fish and wildlife habitat. USDA Forest Service Rocky Mountain Forest and Range Experimental Station, Fort Collins, CO.
192656	Cooper, A. C. 1965. The effect of transported stream sediments on the survival of sockeye and pink salmon eggs and alevins. Bulletin 18, Pacific Salmon Fish Commission, New Westminster, B.C.
192657	Griffith, J. S. 1988. Review of competition between cutthroat trout and other salmonids. American Fisheries Society Symposium 4: 134-140.
192658	Megahan, W.F. and W.J. Kidd. 1972. Effects of logging and logging roads on erosion and sediment deposition from steep terrain. Journal of Forestry 70: 136-141.
192614	Sanderson, J.S. 2004. Final Report: Natural Heritage Inventory of the Taylor Ranch. Colorado Natural Heritage Program, Fort Collins, CO.
171604	Trotter, P. C. 1987. Cutthroat: native trout of the west. Colorado Associated Univ. Press, Boulder. 219 pp.
168150	Zuckerman, Larry. 1984. Rio Grande fishes management. Annual report. July 1983 to June 1984.

ADDITIONAL TOPICS

Additional Topics

No Data

VERSION

Version Date 11/19/2004
Version Author Sanderson, J.S.

Disclaimer

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