

# Level 4 Potential Conservation Area (PCA) Report

Name North Vallejos Creek

Site Code S.USCOHP\*25231

## IDENTIFIERS

Site ID 2169 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 370708N  
State Colorado Longitude 1051319W

<u>Quad Code</u>	<u>Quad Name</u>
37105-B3	Taylor Ranch
37105-A2	Culebra Peak
37105-A3	La Valley
37105-B2	El Valle Creek

### 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 North Vallejos Creek from its headwaters to a point about 1.75 miles above its confluence with South 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. North Vallejos Creek supports an historic population of Rio Grande cutthroat that is at risk (1999 survey; no barrier; brook trout and rainbow trout present; Alves 2004). It is not certain if the population in North Vallejos Creek are pure strain (Alves 1998, Alves 2004 pers. comm. to J. Sanderson), and there are rainbow trout in North Vallejos Creek, so mixing between North and South Vallejos Creek should be avoided. Action on North Vallejos Creek is not yet as high of a priority as the creeks to the south (South Vallejos through Cuates) because of questions about purity and the presence of rainbow. In the future, if the North Vallejos Creek cutthroat population is found to be genetically pure and if rainbow are eliminated, 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 North Vallejos Creek, although 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 North 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 lower part of the North 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

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non-point source pollution.

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## 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 North 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 1,667.78 Acres

674.93 Hectares

## SITE SIGNIFICANCE

Biodiversity Significance Rank B4: Moderate 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 rainbow trout found among the cutthroat. Unlike the other cutthroat sites on the ranch, the Biodiversity Rank was not elevated from B4 to B3 because although this is a historic (i.e., not stocked) population of fish, their genetic purity is not certain and rainbow trout co-occur with the cutthroat. 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>
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. <i>Journal of Forestry</i> 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. <i>Bulletin 18, Pacific Salmon Fish Commission, New Westminster, B.C.</i>
192657	Griffith, J. S. 1988. Review of competition between cutthroat trout and other salmonids. <i>American Fisheries Society Symposium</i> 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. <i>Journal of Forestry</i> 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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