Rio Blanco Restoration:
Adopted Rocks and Homemade Jelly Help Fund Demonstration Project

The Rio Blanco, a tributary to the San Juan River, originates at the Continental Divide in Archuleta County, Colorado. Elevation ranges from more than 13,000 feet to around 6,400 feet at the confluence with the San Juan River. Land ownership is mixed: the headwaters lie within the Southern San Juan Wilderness area, and the confluence is on the Southern Ute Reservation. Private land is interspersed, but primarily in the lower 12 miles. The river runs about 30 miles from source to confluence. The watershed averages about 250 inches of snow in the winter and 13 inches of rain in the summer.

In the 1950s Congress appropriated funding to construct the San Juan–Chama Diversion Tunnel. The tunnel would take water from the Rio Blanco, which is part of the Colorado River Basin, under the Divide into the Rio Grande Basin for use in New Mexico. The diversion is located about 12 miles from the confluence.

The system began operation in 1971 and diverted approximately 70 percent of the in-stream flow of the Blanco. A basin summary prepared in 1990 by the U.S. Forest Service found that:

- Fish habitat was poor.
- Sediment loads were high because of flow changes and streambank erosion.
- Sediment supply was greater than stream transport capacity.
- Water temperatures were high.
- Diversion and land use practices had created a wide, shallow stream with little pool and cover habitat.

The J-hook in the foreground is typical of the structures installed in the river. It directs stream flow toward the thalwag and away from the banks.

The Rio Blanco is classified as an Aquatic Life Cold Water Class 1, Recreation Class 1 stream. Those uses, however, are not attained, resulting in the river's being listed on Colorado's 1998 303(d) list for sediment. A Total Maximum Daily Load (TMDL) is scheduled for June 30, 2006. Colorado also holds an in-stream flow water right that provides for 29-cubic-foot-per-second (cfs) flows from May 1 to September 30 and for 20-cfs flows from October 1 through April 30. The right was appropriated in 1974 to protect fish and aquatic life in the river; however, the physical structure of the river precluded adequate habitat under those flows.

The diversion had created a completely new flow regime in the river. The principle being applied in Colorado's Nonpoint Source Management Program for Hydrologic Modification is to make the best use of the water remaining in the stream and to restore the stream to its designated uses.

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Hydrologic modification projects In 1997 the San Juan Water Conservancy District and Colorado Water Conservation Board initiated a demonstration project under Colorado's Nonpoint Source Management Program for hydrologic modification. The goal of the project was to improve stream water quality and aquatic habitat through Colorado's Nonpoint Source Management Program for hydrologic modification. The goal of the project was to improve stream water quality and aquatic habitat through (1) reducing low-flow water temperatures by narrowing and deepening the channel and creating overhead and in-stream cover and (2) reducing sediment loading by stabilizing banks and enhancing sediment transport capacity by increasing the stream width/depth ratios.

A total of $96,000 of 1997 section 319 funds were used in the demonstration. Matching funds totaling more than the required $64,000 were provided by contributions from the San Juan Water Conservancy District, Southwest Water Conservation District, Colorado Division of Wildlife, Colorado Water Conservation Board, Archuleta County Commissioners, Pagosa Public Schools, Wetlands Hydrology, Lower Blanco Property Owners Association, and local landowners.

Match contributions were collected in unique ways, including an "Adopt a Rock" campaign that allowed people to sponsor a rock for use in the restoration. Also, the local homeowners association sold homemade chokecherry jelly, offering the proceeds as match. The Bureau of Reclamation provided a significant contribution by providing staff and equipment to haul large boulders to strategic sites along the river.

Early signs of restoration

The project overcame considerable opposition on the part of some adjacent landowners, who feared the reconstruction would adversely affect the water level in their alluvial wells. The project was finally constructed in fall 1999 over 1.1 miles of the river below the San Juan/Chama diversion. Some of the early observations include the following:

- Pools within the river are now nearly 7 feet deep; previously, they were nonexistent or less than 2 feet deep.
- The channel is well defined and meanders, instead of braiding through the width of the riverbed.
- Water levels in alluvial wells have increased by 7 to 10 inches.
- Within a week of the completion of construction, children were again catching 10- to 16-inch fish in this segment of the river.

Aquatic habitat was improved by adding a drop structure. The pool in this area is 7 feet deep and supports trout.

These observations are particularly notable because the river was at its lowest flow of the year, approximately 17 cfs, when data were collected. Data collected after construction are still being evaluated.
The goal for the Rio Blanco has now expanded from demonstration to full restoration of the impaired segment of the river. An application has been made for FY2001 319 funding to complete the next 2.2 miles, with the intent of restoring the entire 12-mile segment.

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