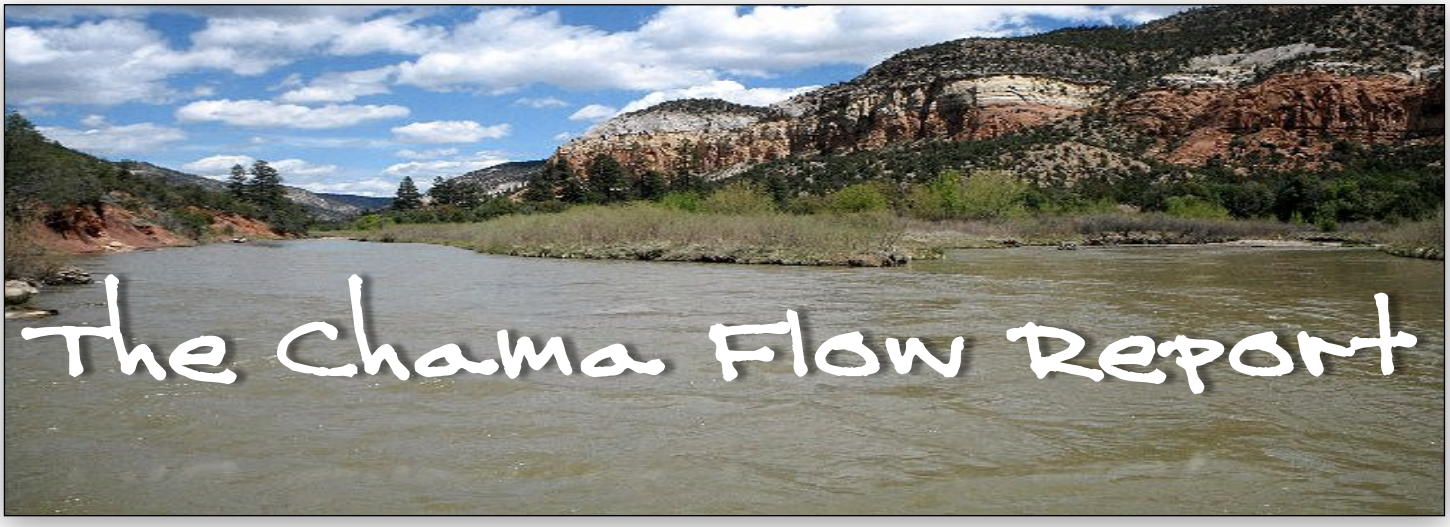

Summer 2011 Volume I, Number 1

Collaborative Flow Project Launched

Over the next four years, the 30-mile Rio Chama Wild and Scenic River will be the focus of a collaborative effort to manage river flows to reinvigorate natural functions of the river while satisfying water management objectives and improving fishing and whitewater recreation.

Now influenced by three dams and a trans-mountain diversion, Rio Chama hydrology is much altered from pre-El Vado conditions. Water storage reduces peak flows while water supply management results in wildly fluctuating flows. Abiquiu Dam was built in 1936. In 1971, Heron Reservoir added San Juan-Chama water to the Rio Chama flow. As a result of these alterations in flow, the historic river channel has been realigned, and the trees, plant, fish, and macrobenthes all have had to adapt to new conditions.

The Rio Chama Flow Optimization Project seeks a program of managed dam releases that will restore sediment transport, channel dynamics and ecological function to as close to pre-dam conditions as feasible. To accomplish this, project managers must secure agreements from the Rio Chama's key water managers, and garner the support of dozens of other stakeholders.

Managed by Rio Grande Restoration, the project officially began on May 10, 2011 with $187,000 of capital funding through the River Ecosystem Restoration Initiative.

Here is how the Project's core team envisions its work unfolding:

- Studies of ecological conditions will provide data that will enable the core team to identify flow regimes that might improve the Chama's ecological potential.
- Whitewater and fishing groups will negotiate a consensus recreational hydrograph.
- Project modelers will characterize present and historical operations, and institutional constraints.
- A water operations optimization model will be designed to suggest alternatives which best satisfy the timing and amounts of water needed to enhance economic and ecological potential.
- Model outputs will be organized as flow management alternatives that can be assessed and approved by an Advisory Council and other stakeholders. Results of the process will be provided to the Bureau of Reclamation for potential implementation.
- If implementation of an optimized hydrograph is agreed to be desirable, achievement of improved flows will be guided by an adaptive management process.

Project Calendar

Recreational Flow Workshop (fishers and boaters)
Thursday, August 26, 10 a.m.
El Vado Ranch

Advisory Council Organizational Meeting
Thursday, November 3, 10 a.m.
*Santa Fe Forest Supervisor's Office (**tentative**)*

Persons wishing to attend, please RSVP steve.harris39@gmail.com.

The Chama Flow Report

A quarterly newsletter of the Rio Chama Flow Optimization Project

Vol. I, No. 1
Andy Dennison, Editor

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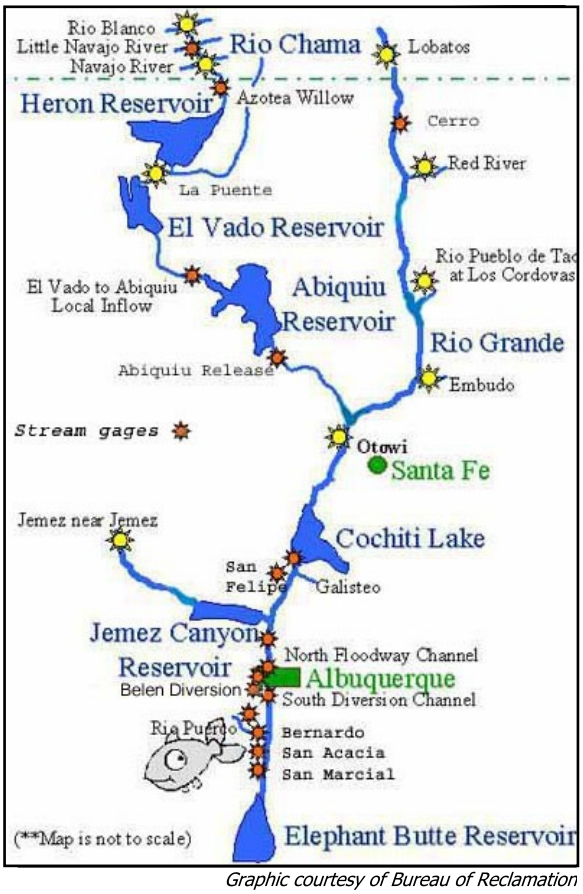
A Little History

Before the United States' conquest of the Mexican north, indigenous communities in the Rio Grande basin turned the waters of natural streams onto floodplain farms. In distributing small increments of streamflow onto their farms, they created landscapes connected to the river and their communities.

After the conquest, American technologies fostered large-scale alterations of the landscape, including the ability to divert virtually the entire flow of rivers. To date, little attention has been given to the health and sustainability of the water sources themselves. No coherent policy moderates the exploitation of rivers with their protection.

In a modest way, the Rio Chama Flow Optimization Project seeks to find a balance between the use of rivers and the care for rivers. The core team that we've assembled to assess the potential of this 30-mile reach of National Wild and Scenic Rio Chama is uniquely well qualified to harmonize important social goals, such as irrigation, municipal water supply, and hydropower, with recreational uses like fishing and whitewater boating and the needs of a healthy river environment.



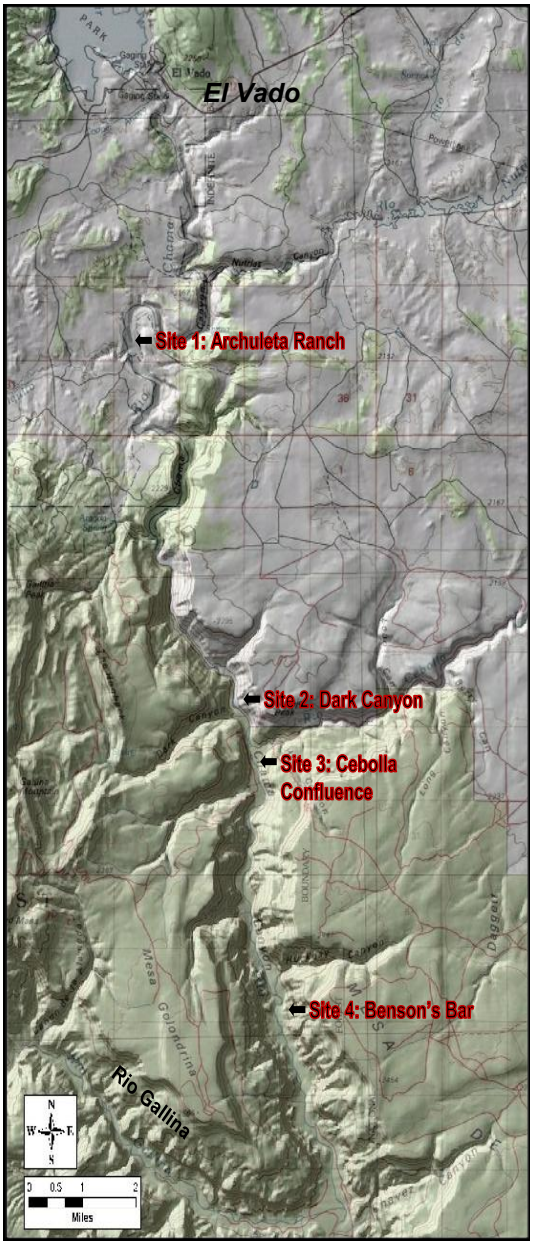
Graphic courtesy of Bureau of Reclamation

"Plumbing" Diagram: Chama reservoir operations respond to water management imperatives throughout the Upper Rio Grande.

The success of this project will depend on the support and cooperation of every person and community with an interest in the future condition of the river, engaging their minds and hearts in the difficult task of satisfying all of the many aspirations for one of New Mexico's natural treasures, the Rio Chama.

– Steve Harris

Four Sites Selected for Study



Members of the Rio Chama Flow Optimization Team will spend the summer collecting baseline data at four sites along the reach between El Vado Dam and Rio Gallina.

The data will become the foundation for a four-year study of how varying flows affect the ecology of the river while satisfying storage and delivery requirements in this highly regulated river basin. The compilation of data, flow modeling, and site monitoring will ultimately contribute to a flow management plan to modify releases through El Vado and Heron dams that satisfy downstream users and improve the river's natural ecological processes.

The selection of the locations along the Rio Chama came after a three-day raft trip in May by Core Team members, who floated from El Vado Dam to Big Eddy. During the trip, members pulled over at a half-dozen locations to walk the sites, take photos, and discuss their attributes for a multi-disciplined assessment. At each site, an examination of riparian vegetation, sediment and geomorphology, and aquatic ecology was conducted.

Several weeks later, team members selected four sites for the data-collection phase of the project. Those sites are:

• **Archuleta Ranch** -- a meandering section, with an actively changing channel, and the site of riparian vegetation restoration project.

• **Dark Canyon** – a river segment constricted by a debris fan from the side canyon, a cobble bar area disconnected from post-dam river flows, and a backwater habitat area.

• **Rio Cebolla Confluence** -- a riffle complex with limited riparian vegetation.

• **Benson's Bar** – a bar area of native riparian shrubs, pool habitat, and a bank lined with mature trees on a high terrace.

Project Notes

Vegetation survey under way

River ecologists Todd Caplan and Chad McKenna spent four days on the river June 25-28. They gathered data on riparian vegetation within the historic floodplain of the river to "capture" the existing conditions at each site.

The information will form the basis for a vegetation map of the entire reach from El Vado Ranch to the Monastery, including four individual sites. The map categorizes vegetation communities in the overstory (large trees) and understory (small trees and shrubs). Through this process, the ecologists will better determine the heights, areal coverage, and overall structure of the plant species that inhabit the Rio Chama.

Bureau on Advisory Council

After a June 17 meeting, the Bureau of Reclamation agreed to join the Advisory Council for the flow optimization project. In addition, agency personnel committed to advising the Core Team on the various constraints on operations at El Vado Dam.

The meeting included Steve Harris and Dick Kreiner, both of the Core Team; Mike Hamman, Reclamation's area manager; and, Carolyn Donnelly, the water operations chief at the Bureau.

In related news, reclamation hydrologist Dagmar Lewellyn will serve on the Core Team.

Model relies on pre-dam data

A key component of the Rio Chama RERI project will be an accurate understanding of the hydrologic characteristics of the basin, which will be determined through modeling.

The process includes an estimate of flooding frequency on the Rio Chama prior to the 1935 construction of El Vado Dam -- an important step in determining the extent of flow alterations achievable in the project. USGS gage data collected upstream of El Vado will help estimate pre-dam flood recurrence intervals. Flood frequency information will be used in conjunction with historical El Vado releases and discharge-storage rules to determine feasible modifications of future dam releases.

Flow Project Team Enlisting Partners

Since May, Dick Kreiner and Steve Harris have been meeting stakeholders to explain the Rio Chama Flow Optimization Project goals: formulating alternatives for improving the present regime of reservoir releases; and, securing partnership agreements from the Chama's key water management institutions.

Both men are well known among stakeholders. Kreiner is the former head of the Corps of Engineers' Reservoir Control Branch, with Rio Chama operational experience going back to the late 1970s. Harris also has long acquaintance with Chama issues, having worked on Wild and Scenic River protection and recreational water management since 1979.

Discussions with potential partners have been mostly favorable and upbeat. Outreach efforts began with two local water providers, the Middle Rio Grande Conservancy District and Albuquerque Bernalillo County Water Utility Authority. Both have a long history of working positively on Rio Chama water management activities. While the District was enthusiastic, the Water Utility expressed serious concerns that we will have to work through.

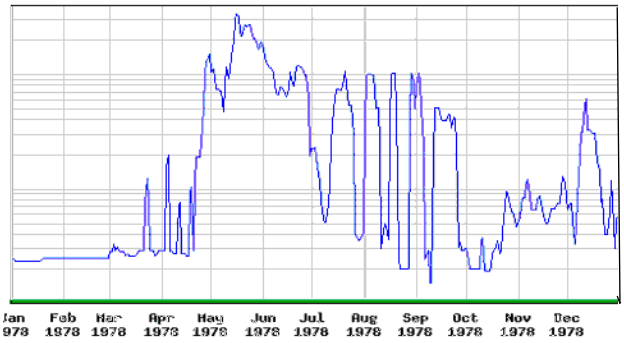
Recently, the team received favorable signals from the supervisor of the Santa Fe National Forest and area manager of the Bureau of Reclamation Albuquerque, inspiring confidence that they will join Bureau of Land Management and Interstate Stream Commission, which are already considered partners in the Project. As we go to press, we're scheduling a meeting with the district commander of the Army Corps of Engineers to enlist his agency's assistance.

In the coming months, the team plans to set up meetings with the many other groups that have significant interest in how water is managed on the Chama, such as Trout Unlimited, New Mexico River Outfitters, Adobe Whitewater Club, Rio Grande Pueblos, Los Alamos County Water Utilities, Rio Chama Acequias, Christ in the Desert Monastery, El Vado Ranch, Abiquiu Reservoir landowners, and Santa Fe city and county.

El Vado Ranch has agreed to host a "hydro-negotiation" among the recreational stakeholders in late summer. Harris is actively recruiting participants for this session, with a goal of determining how best to accommodate fishing and whitewater boating flows.

Kreiner and Harris continue to seek commitments to the Advisory Council, with the first meeting tentatively set for November.

These hydrographs from 1978 illustrate a fairly typical year on the Rio Chama. The graph at the left shows the flow at La Puenta above El Vado, while the graph at the right shows dam releases below El Vado Dam.



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