

valley water alliance

Draft Restoration Strategies Report for the San Joaquin River

The Foundation for an Ongoing Process

“The crisis of our diminishing water resources is just as severe as any wartime crisis we have ever faced. Our survival is just as much at stake as it was at the time of Pearl Harbor, or the Argonne, or Gettysburg, or Saratoga.”

Jim Wright, U.S. Representative, 1966

Introduction

Friant Dam and the San Joaquin River provide vital water supplies to communities, large and small, from Chowchilla to Bakersfield and beyond. The water comes from runoff resulting from Sierra Nevada rain and melting snow. It is stored in a series of reservoirs, including Millerton Lake behind Friant Dam. Water for cities, wildlife habitat and farms is transported through the Friant-Kern Canal and Madera Canal; water that replenishes underground water supplies, benefits the region's environment and existing ecosystems, and supports businesses and family farms with an economic impact of more than \$4.5 billion annually.

These vital water supplies are now threatened. In *Natural Resources Defense Council v. Rodgers*, a lawsuit initiated in 1988, a coalition of environmental groups asserts an historic salmon run should be restored as it was more than a century ago. This raises concerns over the allocation of critical water supplies and the livelihoods of more than 2.5 million residents in the Central Valley region. Since the case began, the valley's water users have attempted to find common ground with environmental interests who want to restore the San Joaquin River's anadromous fishery.

In 2000, as part of a process to settle the on-going San Joaquin River lawsuit, both parties came together in a settlement process to jointly manage development of

studies to investigate river restoration possibilities. These ultimately included a Water Supply Report and a draft Restoration Strategies Report. The Strategies Report was not meant to be a restoration plan, but a preliminary document to set the stage for more study and research. The Natural Resources Defense Council (NRDC) and Friant Water Users Authority (FWUA) jointly managed a group of independent researchers who developed the foundation for a restoration strategy for the San Joaquin River between Friant Dam and the confluence with the Merced River.

The Report: A Preliminary Document

The Strategies Report is a beginning effort. It is **not** a restoration plan for the San Joaquin River. The numbers it contains are not definitive, although those numbers are very large. It does not conclude a naturally reproducing fishery can be established within the San Joaquin River between Friant Dam and the Merced River. It makes assumptions that may not be accurate.

The report is a conceptual document, which would require additional, more site-specific information and a broader involvement by local landowners and stakeholders. **The report by no means includes final recommendations.**

The preparation of the report was begun in 2000 and

continued on reverse

completed in May 2003. However, its release was delayed due to the NRDC's reluctance to have the report and its findings made public. The report states it would take more than just additional water supplies to restore an anadromous fishery on the San Joaquin River. The Strategies Report makes clear there is much more to be studied before a restoration plan can be developed for implementation.

Restoration Strategies

The report contains three restoration strategies, which were developed by the NRDC coalition and FWUA in collaboration with the non-partisan researchers. These general strategies include:

- **Existing flood conveyance capacity:** Restoration through expansion of the river's flood conveyance system.
- **Salmonid oriented management:** Restoration through the creation of habitat in the river channel.
- **Riparian-oriented management:** Restoration through the expansion of the river's overall ecology.

The themes facilitated the selection and design of specific restoration activities by providing researchers with the ability to categorize elements included in each strategy. Each strategy represented a different mix of options to provide researchers with flexibility in developing additional research models and a final restoration plan. Although limited in scope due to time constraints, there are some basic assertions researchers determined from the information gathered.

More water isn't enough!

It is a misconception, which has been perpetuated by the NRDC and other environmental interests, that more water is the solution to river restoration. From the Strategies Report, it is clear restoration of a naturally reproducing San Joaquin River anadromous fishery cannot be accomplished without significant, extreme and costly physical changes.

Increased water supply alone will not be enough.

Environmentalists have assumed as long as there is more water, an anadromous fishery can be restored. However,

as acknowledge in the Draft Restoration Strategies Report, there would need to be significant channel modifications to meet the needs under any of the three strategies, in any type of water year. For example, for restoration to occur in a normal year it could still take an estimated 48 to 79 percent of Friant's supplies that have been allocated for more than a half century to the urban, business and agricultural interests on the southeastern side of the San Joaquin Valley.

The cost of a comprehensive restoration strategy will be significant. Changes to the river channel as part of the restoration activities described in any of the report's three restoration strategies would cost in excess of \$650 million. This estimate is most likely on the low side and does not include future operations and maintenance expenses. It brings to the forefront the need for any restoration strategy to consider the social, cultural and economic impacts to the region. No matter which strategy is chosen, it is known from similar economic modeling impacts of water supply reductions to communities, businesses and farmers the impact would be dramatic.

How Much Water Is Needed?

Exactly how much water it would take to restore an anadromous fishery on the San Joaquin River is still in question. Despite a number of assertions (that lesser amounts are required) made by environmental interests, it is known that 385,000 – 1.8 million acre-feet could be required. In reviewing the scenarios included in the draft restoration strategies report, demands could range anywhere from 38% of the San Joaquin River's natural runoff to well in excess of 100% in a dry year. In a wet year, demands would range from 27% to 71% of the river's supply.

Thus, no matter the strategy, how sharp your pencil, or how insignificant the taking of water is made to sound, a critical amount of Friant water would be necessary for restoration. Major regional impacts would be an inevitable result.

The Difficulty of Re-creating a Natural Spawning Environment

To have a viable salmon run on the San Joaquin River would require a viable spawning environment to sustain the fish and subsequently make possible their eventual annual return to the river. Habitat must include the right mix of gravel and sediment as a result of shifting river flows.

As the river and its tributaries are currently structured, there is very little spawning area for anadromous fish; what area does exist is only a short distance from Friant Dam. As the channel exists, development of spawning habitat cannot be done in a fashion that would mimic natural conditions for salmon.

Research states flows of 20,000 to 40,000 cubic feet per second would be needed to properly mobilize gravel and sediment in the spawning region. However, the capacity of Friant Dam's release valves is only 16,400 cubic feet per second and the channel's capacity is just 8,000 cubic feet per second (cfs). Costly channel modifications such as gravel augmentation and dredging would need to be conducted.

Existing gravel pits in the Fresno area downstream from Friant Dam create additional difficulty in habitat restoration. The pits are a source of warm water which channel choking sand, and create habitat for predator fish. There would be a significant cost for any restoration plan since the gravel pits would either need to be isolated or filled-in.

Lastly, water quality is an obstacle that must be overcome for river restoration. Where San Joaquin River water mixes with Delta supplies (from the Delta-Mendota Canal) at Mendota Pool on the valley's west side, water quality is considerably lessened in comparison to pristine Sierra water. Research needs to be continued to determine how to maintain the right water quality as a result of mixing of water types to encourage salmon to be attracted to the San Joaquin River for spawning.

Cold Water Needs for a Cold Water Fishery

For purposes of the Restoration Strategies Report studies, it was assumed an unlimited supply of cold water would

be available. That is not the case. There is a significant amount of warm water to be dealt with and only a limited amount of available cold water, particularly during the summer and fall months, due to the shallow capacity of Millerton Lake. In its present and natural state, the river's 152-mile length to the Merced River confluence and the San Joaquin's nearly level profile present significant opportunities for water to warm to temperatures not suitable for salmon. This warm water would significantly impact any anadromous fishery restoration activity. More importantly, the existing fishery downstream from Friant Dam could also be impacted by shifts in water temperature.

Research Must Continue

It seems ironic after more than three years of study we have actually determined we now know enough to know there is much more to research before a viable restoration strategy can be determined. Here are just a few of the many unanswered questions:

1. Can restoration take place with additional water supplies alone?
2. How much water would it really take? Is there enough cold water for salmon restoration?
3. Is restoration of a self-sustaining salmon fishery possible? Is a lower level of restoration of a salmon fishery possible and acceptable?
4. How much would it really cost? What are the physical restoration action costs and who pays these costs?
5. What would be the impact of restoration on local stakeholders? Who would benefit and who would not?
6. What would be the impact of restoration on the existing fishery below Friant Dam and below the confluence of the Merced River?

As a result of the Draft Restoration Strategies Report, it is now clear there is a significant amount of scientific data needed before a plan for restoring an anadromous fishery on the San Joaquin River can be completed. However, the report has created a baseline for research data that will be invaluable as restoration strategies continue to be reviewed.

Conclusion

The Restoration Strategies Report will prove to be valuable as work continues among environmental interests, water users, the numerous communities and all stakeholders who would be impacted by any decision to make changes to the San Joaquin River. If restoration is to occur, it must be completed using a comprehensive regional strategy that takes into consideration the significant social, cultural and economic impacts of Friant Dam and San Joaquin River water supplies throughout the Central Valley.



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