

COMMENTS ON BULLETIN 160-93

by

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JANUARY 24, 1994

I've been fortunate to have been associated with Mr. Clair Hill for the past 40 years. The Shasta County Department of Water Resources was established in 1954, just when Bulletin 3, the California Water Plan, was coming together. I interviewed with Clair for the position of the County's Director of Water Resources at that time. Later, as the Director, I had the privilege of participating in the final formulation of the plan, representing the interests of the local area. A total of \$10 million and 10 years of intensive investigations went into the plan, which was finally approved by the State legislature in 1957. This initial plan was only a guide to how water development should occur. The State Water Project was a logical first step in meeting the immediate needs of California's growing population.

Since completion of the initial elements of the State Project, many site-specific studies have been conducted, but the only additional Project unit that has been implemented is the San Luis Dam and Reservoir. The Department conducted many additional studies of storage sites on the west side of the Sacramento Valley to supplement the water supply to the State Water Project. However, for a variety of reasons, including environmental concerns, each was abandoned.

The Delta crossing facility, known as the "infamous" Peripheral Canal, was proposed by a joint Federal-State Task Force. The Task Force was headed by Joe Gomez, then Chief of Engineering at the Sacramento District Corps of Engineers. California Fish and Game has continued to support the concept of bypassing the Delta with the exported water, but that concept has been rejected by the State's voters.

Having followed all these activities since 1948, I must say that Bulletin 160-93 is the most comprehensive compilation of data on the status of California water development since Bulletin 3. It contains extensive background data, with much of the document devoted to the institutional constraints associated with processing a project under today's flood of regulations.

I believe the authors of Bulletin 160 have been too modest or too fearful of their own conclusions. The summary does not focus the obvious (from anticipated supply deficits cited in the report) need for new water supplies, not 30 years from now but as soon as possible. Let's face it, the Water Bank is bankrupt and Bulletin 160 does not offer a plan for recovery. Both Shasta and Oroville reservoirs are already heavily overworked, and new operational requirements will only exacerbate this situation.

Significant supply deficiencies are real today. This is evidenced by the 50% reduction in water delivered to San Joaquin farms last year. The demand side of the water supply "balance" appears to be more complete, except for the uncertainty associated with the environmental water supply needs. This uncertainty is associated with the continuing mandates from Congress and the EPA, and the changing requirements of the Endangered Species Act and the Clean Water Act.

It makes no sense to establish new authorities to protect fish and wildlife at the expense of other significant long-standing economies. California's water supply system was the product of farsighted people from the farms and the cities who were interested in the livelihood of all Californians, and they did a good job. Until the last few years, most of the projects were successful in achieving the objectives they were designed to meet. Unfortunately, the fishery and other environmental needs, for the most part, were offered only "incidental protection" stemming from regulations, not from specific plans for preservation and enhancement.

It is now time to initiate a fully integrated planning effort to develop the water for environmental needs without destroying other major economies in the process. Planning by regulation has put California's water program in a terrible state of regression that now seriously threatens the future economic stability of the State.

A relatively minor event, but one that is typical of many other situations where regulations (and the effects of the ESA) have been counterproductive, occurred about 20 years ago on the Sacramento River in Redding. The local Fish and Game fisheries manager hired a bulldozer for a couple of days to manipulate gravel in a bypass channel of the Sacramento River at Turtle Bay. He reported that 400 fish were actively spawning there within days. That's equivalent to about a 1 million egg hatchery, except it was under natural conditions and the price was right. After high water this sometimes had to be redone. The third attempt a couple of years ago was stopped by the environmental (regulatory) arm of Fish and Game on the grounds that a winter run salmon redd might be disturbed. I could cite a number of other similar overzealous, unnecessary, and in many cases counterproductive conditions that have been placed on actions intended for fish habitat improvements.

At one time, particularly during the '50s and '60s, the Sacramento River had a significant salmon fishery in the Redding area. The most valuable species was the winter-run Chinook salmon. The population of the winter run exploded after Shasta Dam was completed, from a few thousand in 1945 to over 120,000 in 1969. (See U.S. Fish and Wildlife Service. 1963. Special Scientific Report-Fisheries No. 461)

If the energy spent on listing of the winter-run salmon and the related flood of regulations were instead spent in assessing the ecological conditions that caused the winter-run population explosion from 1945 to 1969, we probably could have restored the run. The three principal factors in the upper river contributing to the reduced runs are the lack of temperature control at Shasta Dam (the '76 and '77 runs were decimated by warm water), the

gradual movement of spawning gravel downstream, and the fish passage deficiencies at the Red Bluff Diversion Dam, which have forced up to 60 percent of the run to spawn in warm water below the dam. The Shasta temperature control structure has been under design for more than 10 years and the same can be said for the remedies for the fish ladders at Red Bluff. The regulators have come forward with a myriad of alternatives, but no decisions. The gravel replacement program has been successful in placing several thousand tons of gravel in the river in the last 5 years; however, it has been plagued by cumbersome, unnecessary regulations placing contingency on contingency as to how, when, and where to place it.

The reason cited repeatedly in the press and in Agency publications for the need to "list" the winter-run under ESA is that the population has fallen from more than 120,000 to as few as 200. There are two fallacies to this statement. First, the 120,000 figure was the peak of a population explosion occurring between 1945 and 1969. The concluding sentence in the Special Scientific Report-Fisheries-No. 461 states: "Little evidence is extant that this run was distributed widely or that it ever was composed of large populations prior to Shasta Dam." And, if you analyze the extremely small stream reaches in the watershed (limited mostly to the upper McCloud River) with the required ecological conditions for the winter run to survive, it obviously was a small run before Shasta. Furthermore, the number of 200 in 1991 was arrived at by a dubious formula, not an actual observed count. Trapped out-migrants at a Fish and Game trap at their screen at the Glenn-Colusa Irrigation District pump station showed a significant increase for that year over the previous year. It is time to not only look at the downturns of the run and fully identify the specific cause, but also to look at the ecological conditions that caused the population explosion and then plan and design to duplicate those conditions within the limits of the resources available. Many other positive events could be researched for cause and effect. Positive evaluations by those in responsible charge might show that we can learn something from the conditions associated with positive events. Whatever is learned

should be put into a development plan and implemented. To accomplish this, there is a desperate need to include competent hydraulic engineers and economists on the planning team. Left solely to the biologists and regulatory "policemen" the objectives will be difficult, if not impossible, to accomplish.

With timely implementation of the plans to correct the three major deficiencies affecting the winter run, there is little doubt that we can reconstitute a highly valuable fishery in the few miles below Keswick Dam. The previously cited USF&W Service report states that an estimated 11,000 winter-run salmon were caught by anglers on the Sacramento River below Keswick during the 1961-62 migration. A harvest of 5,000 to 10,000 fish in the local area is an achievable objective if we could just accelerate the actions already identified.

Bulletin 160 clearly shows that the Delta is the "hub" of California's water supply. The principal overall environmental concern in the Delta is the impacts to the hydraulic conditions caused by export pumping. Until the Delta is fixed few of the water supply management options discussed in the report can be implemented. Even the Los Banos Grande project will not have a water supply without some significant Delta plumbing changes.

It's time to take a broader overview of the State's entire water supply system, and to revisit Bulletin 3 (The "California Water Plan,") and the State's supplemental studies of the 60s and 70s. The Westside Sacramento Valley Storage and Conveyance Concepts, as briefly described in Bulletin 160 under "Options for Balancing Water Supply and Demand," actually stems from those previous studies. Units from those studies, conjunctively operated and with slightly modified plumbing, present an unlimited variety of alternatives to manage the water supplies in the best interest of the environment. At the same time, we can provide the opportunity to improve system reliability, which is so lacking today. Like the East Bay and San Francisco interests who went to the sources to

to get their high quality water, this system, too, would draw from high quality sources (namely Shasta and Oroville). By separating the water from the fish and also from the Sacramento River Canal and the Delta, the high quality source then can be connected to the M & I users of the Bay Area and the State Aqueduct in an environmentally safe fashion. The West Side Conveyance connection to the State Aqueduct could be operated either to supplement the Peripheral Canal, if built, or as an alternative. The Delta pumps could still be operated during periods of high Delta outflow without significant adverse impacts on the Delta fishery. The additional stored water could supplement the low Delta outflows, when appropriate, and the Sacramento River could be operated to more closely meet the needs of the fisheries.

At the ACWA conference last fall, I sat in on a discussion of "transfers and exchanges." A City of San Francisco representative used the analogy of power marketing contracts as a success story on exchanges. The reason power marketing and exchanges are possible is because of the extensive power transmission network. It extends throughout the western states and from Mexico to Canada. If the plumbing options offered by the Westside Sacramento Valley storage and conveyance concepts were in place exchanges, transfers, conjunctive groundwater management, and all sorts of other options could be facilitated in an environmentally sound manner. They could also offer many opportunities for environmental enhancements and improved recreational opportunities.

I strongly recommend that these concepts and their myriad of options be given full consideration in the State's long-range planning efforts, including those outlined in Levels I and II Options in Bulletin 160. Studies on these and other options should be started now because implementation will take a significant amount of time. These efforts should not supplant or detract from ongoing efforts associated with conservation, wastewater reclamation, retirement of margin agricultural lands, and other demand management options.

We planned and implemented our current water supply systems to meet the needs of the State as perceived in the 40s and 50s. Now what is needed is to set some logical, reasonable environmental objectives and then focus on the planning, design, and implementation measures that can best meet those objectives. "Planning by regulation" won't do it.

Some say we can't afford all these things. I believe we can't afford not to do them and we are already paying a steep price for inactivity for the following reasons:

- . Bypass water for fish within the Shasta-Trinity system in 1992, using \$20 oil for energy replacement, cost us \$25 million
- . Lost agricultural production and its valuable related economies has severely affected the State's economic health
- . Lost revenue associated with both the sports and commercial fisheries has had further economic impacts
- . Lost revenues and recreation opportunities associated with the overworked water bank at Shasta and Orville reservoirs have adversely affected Northern California's economy
- . Unreliable water supplies have hampered economic development and caused some businesses and industries to relocate elsewhere
- . The costs for providing treatment of the low quality water served out of the Delta will increase dramatically with new Federal drinking water requirements.

These and any other economies foregone should be quantified and put into the "balance." Bulletin 160 does a good job of generally describing economic impacts under the title of "Economic Costs of

Unreliability." But these are not quantified and are not presented in a manner that adequately conveys our current crisis. Nor does Bulletin 160 describe plans to mitigate these costs.

In summary, I question what's happened to our positive thinkers? The regulators have completely frustrated a logical planning process. Therefore, I offer the following general recommendations:

- . Broaden the scope and extend the planning horizon for meeting the State's water needs of the 21st Century.
- . Complete a more detailed analysis of the economic costs of our unreliable water supplies and show plans to mitigate these costs.
- . Establish realistic desirable environmental objectives and plan for the development and allocation of the resources to best meet those objectives.
- . Find ways to revise, simplify, or streamline the regulatory process so that a positive planning process can move forward.

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