

The American River's Hidden Fish Kill: 181,000 Salmon Die Before Spawning

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The Klamath fish kill of September 2002, when 68,000 salmon died because of low, warm water conditions on the lower river, is considered the largest of its kind in U.S. history. However, another "hidden fish kill" that took place on the American River in the fall of 2001, 2002 and 2003 is now vying for this dubious distinction.

Only a few short miles from the State Capitol, an unprecedented environmental tragedy took place on the American River in the heart of Sacramento metropolitan area over the past three years. Huge numbers of adult chinook salmon returned from the ocean to spawn, but 181,709 of these fish perished before spawning.

River advocates and fishery biologists blame the fish kills on bad water management by the U.S. Bureau of Reclamation and on the continuing lack of flow and water temperature standards on the American, while federal officials claim that they are forced to balance the needs of different users in managing the river.

Thirty-seven percent of the run of 2003 - 58,651 fish out of 158,516 fish - died before spawning in the 22 miles of the river below Nimbus Dam in the fall of 2003. The vast majority of the total run, 147,103 fish, were natural spawners, according to Mile Healy, associate fishery biologist for the California Department of Fish and Game, who coordinated a crew of workers to count and record the carcasses on the river during the annual post-spawning carcass survey.

Huge die-offs of salmon before spawning also occurred in 2002 and 2001. The 2002 run lost 30 percent of the run, 35,432 fish before spawning. The 2001 run was the worst of all, with 87,626 fish perishing (67 percent) perishing before spawning.

Healy blames the abnormally high pre-spawning mortality to lethally warm water conditions on the river. "When you get a large run that encounters warm water conditions, a large proportion of the fish will be wiped out," said Healy.

The exact causes for the fish deaths are not known because no fish pathologists examined the fish. The salmon could have died from the outbreak of diseases such as "Ich" and "Columnaris" that spread when the fish are crowded in low, warm water conditions. Or they could have perished from low levels of dissolved oxygen or the lethally warm water itself.

The large numbers of salmon that returned were a surprise for many biologists, since the American has traditionally seen runs of around 35,000 king salmon. Then suddenly in 2000 a big run of over 100,000 fish arrived in the river. Good ocean conditions, a series of wet years, and habitat improvements resulting from the enforcement of the Endangered Species and Central Valley Project Improvement acts are among the factors that led to the large salmon returns.

Unfortunately, the situation this fall looks as bad or worse than it did in the autumn of 2001. "We

anticipate another large fish kill like that of 2001 unless we can figure a way to dump into the system more cold water," said Healy.

The river releases from Nimbus Dam were only 1,000 cubic feet per second during the fall run of 2001. Similar low flows occurred during the fall of 2002 and 2003.

The sad thing is that apparently little can be done to avert another huge fish kill rivaling that of 2001 this fall. "The Bureau dropped 194,000 acre feet of water down the river in July," said Healy. "There are minimal reserves and no cold water is coming into the lake now."

The data documenting the pre-spawning mortality is as solid as it gets. A crew of 6 to 7 people on crews counted, marked and cut the fish three to four days a week from mid October through the end of December or into early January, depending on the year.

"These are real numbers, not an estimate, since the Fish and Game actually counted and cut the fish," emphasized Felix Smith, the retired federal wildlife biologist who was the whistleblower in the Kesterson Wildlife Refuge scandal in the early 1980's.

The fact that the fish died before spawning is tremendous loss to the potential for fish restoration on the river. Each female salmon lays approximately 4000 to 5000 eggs, depending upon the size and year class of the fish.

"We're talking about a serious egg loss and potentially millions of fish," said Smith, a board member of the Save the American River Association. "These fish kills on the American are like a knife in the ribs of the river's fishery. We just can't afford to lose such large numbers of fish."

He blamed the yearly disasters on the lack of adequate water flow and temperature standards on the American. The Save the American River Association, California Sportfishing Protection Alliance, Sacramento Valley Water Forum and other groups are supporting the establishment of flow standards for the American River to protect fisheries and aquatic resources and continue steps to restore the river - and to prevent the loss of thousands of fish before spawning.

The Water Forum, with the support of state and federal fishery agencies, has developed standards after years of hard work. They came out with a draft document in January 2004 that they would like to put before the State Water Resources Control Board in 2005.

Jeff McCracken, spokesman for the Bureau of Reclamation, claims the federal agency is doing everything it can to balance the interests of different water users in the midst of a low precipitation year. He attributes the low state of Folsom to a surprisingly dry spring and the need to meet water quality requirements for Delta smelt.

"We never got the spring melt that we anticipated," said McCracken. "We had projected 870,000 acre-feet of water, when all we got was 650,000 acre-feet in Folsom. It was the driest spring in 80 years."

He said the Central Valley Project and California Department of Water Resources have to meet water quality requirements for Delta smelt. 400,000 acre-feet of water is required, 100,000 of which was taken from Folsom for this purpose this year, according to McCracken

Then there was the Jones Tract levee break, when federal and state water exports out of the Delta were cut. Once the Jones levee break was equalized, big releases from Shasta and Folsom began "freshen the water for export use" in the federal and state water projects, said McCracken.

"We're doing every thing we can to keep the cold water pool in Folsom," contended McCracken. "We spent \$20,000,000 on a water temperature control device so that we can have cold water for the fish. It's a tough balance trying to keep everybody happy."

However, John Beuttler, conservation director of the California Sportfishing Protection Alliance, said the problem is that CalFed, the joint federal and state interagency group that attempts to balance water for fish and wildlife with water export demands, "stops at the State Capitol."

"The Bureau can short the American of its water because there is no real obligation by the Bureau to protect the resources of the river without these water standards," said Beuttler. "Nobody is being held accountable to providing flows for fish."

Fish and Game Code 5939 requires the operators of any dam in the state of California to provide flows "to keep fish in good condition." Releasing lethally warm, low flows where thousands of salmon die before spawning is not keeping fish in "good condition."

For 51 years, the federal government has ignored this mainly because the Bureau has the ability to cost river proponents millions in litigation - and fishery advocates are reluctant to intervene because the cost of litigation is so high.

"The Bureau prefers to whack the flows of the American River because it is easy to do so," said Beuttler. "Every presidential administration has said they would achieve flow standards on the American River. The Water Forum has done a commendable job working with the different agencies and groups to develop water standards for the river."

Unfortunately, the Bureau of Reclamation wants a permanent dedication of "b2 flows" (water dedicated to fish and wildlife under the Central Valley Project Improvement Act) if they are to support the standards. "We have trouble with BOR on this, since use of b2 water is supposed to be determined by the U.S. Fish and Wildlife Service annually, based upon changing needs and conditions," he explained.

Leo Winterwitz, executive director of the Water Forum, emphasized that the flow standards are designed to protect fish, but don't impact the water supply. "The standards only rearrange the timing of releases to benefit the fish," said Winterwitz.

Winterwitz noted that one reason why Folsom is so low is because it is used as the "work horse" by the Bureau to meet Delta water quality standards. It takes only one day for water from the American to reach the Delta, whereas releases from Shasta Lake into the Sacramento River take 4 to 5 days to reach the Delta.

Meanwhile, as water standards are still in limbo, another enormous fish kill is expected on the American this fall - and very little can apparently be done about it because Folsom Lake is so low, with little cold water pool left. Folsom had only had 411,000 acre-feet of water, 43 percent of capacity, left at press time. The cold water pool is only a small proportion of this remaining water.

This looming loss of wild chinook salmon comes at a time when the federal and state agencies, fishery conservation groups and environmental organizations are working so hard to restore salmon and steelhead populations throughout the West. The loss of these fish is a tremendous waste, especially when you consider that they could have provided a substantial boost to the fishery and the economy of northern California.

"For the past three years, we've had unbelievable fish kills on the American," said Smith. "The fact that sport and commercial fishermen couldn't catch them and utilize them before they died without

spawning is a great tragedy. These fish could have provided a substantial enhancement of the economy. The fish, a public trust resource, died because of insufficient temperature and flows."

Not only are king salmon impacted by the current management of the American, but steelhead, a listed species under the federal Endangered Species Act, also suffer from low, warm water conditions. Wild steelhead spend one to two years in fresh water before migrating to salt water and need cold water to thrive. While steelhead need water temperatures in the fifties, the current Bureau target for average daily water temperatures at Watt Avenue on the lower American River is 69 degrees during the summer.

Bob Strickland, president of United Anglers of California, summed up the feeling of many anglers and conservationists when he said, "Here's another case where the fish don't count. The water for farmers and other water users always comes before fish when it's supposed to be the opposite. These fish kills are just devastating to the fishery that we are working to restore."

The time for the adoption of water standards on the American River is long overdue. For more information, contact the Save the American River Association, (916) 387-1763, or the California Sportfishing Protection Alliance, (510) 526-4049.

<http://www.fishsniffer.com/dbachere/040813amerfishkill.html>