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Fish Out of Water

How Water Management in the Bay-Delta Threatens the Future of California's Salmon Fishery

To read the full issue paper on the impacts of water management on California's salmon fishery, visit www.nrdc.org/policy

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Migrating Chinook salmon

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Chinook salmon are magnificent fish, and their presence is an indicator of a healthy ecosystem. They are prized as a healthful food, valued by recreational and commercial fishermen, and play a central role in the culture of many of California's Native American tribes. Chinook sustain local economies from the central coast of California to Oregon; commercial fishermen, charter boat operators, fish processors, hotels, and restaurants all depend on healthy salmon runs. But California faces the possibility of becoming a state where salmon fishing is a thing of the past and where wild, locally caught California salmon permanently vanishes from restaurant menus and supermarkets. The future of California's salmon, and of the many people who depend on these fish for their livelihoods, will be determined during the next few years. We must act quickly to protect this treasured resource.



WATER 4 FISH
Targeting California's Water Management



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Water Management Projects Threaten Salmon Survival

In April 2008, state and federal agencies took the unprecedented step of completely closing the commercial fishery for Chinook salmon and all but entirely closed the recreational fishery. The closure was necessary because the number of salmon returning to the Sacramento River—the backbone of California's salmon fisheries in recent years—have fallen to record lows. And next year's run could be even worse.

Several causes have contributed to the decline of Chinook salmon and steelhead, including poor ocean conditions (possibly caused by global warming), water pollution, and invasive species. Although there are a complex host of factors, one of the most significant—and reversible—is the operation of the State Water Project and Central Valley Project. The impacts of the water projects on salmon include:

- the reduction of available cold, clean water needed for salmon to migrate and spawn caused by changes to upstream reservoir operations necessitated by the export of water from the Delta.
- the killing of tens of thousands of juvenile salmon by the giant pumps used in the Delta to export water.
- the blocking by dams of salmon attempting to migrate to their spawning grounds.

A federal judge recently found that approximately 40 percent of some populations of juvenile salmon are killed by the water projects before they reach the ocean, and that plans approved by the federal government in 2004 to operate the water projects to export more water could increase mortality rates up to 66 percent for some runs.

Operating the state and federal water projects with a business-as-usual approach that neglects the plight of salmon would have far-reaching effects: no locally caught, wild salmon available on restaurant menus or at the market; fishing boats tied up at the dock, with fishermen, river guides, and local communities devastated by the economic losses; and the health of our rivers in jeopardy because of the loss of an integral part of the river ecosystem. Unfortunately, state and federal agencies are considering several actions that could further worsen conditions for salmon in the San Francisco Bay-Delta watershed, including construction of a peripheral canal to expand water exports, executing new water supply contracts for additional water supplies, reducing the amount of water available for salmon restoration under federal law, and reducing protections for salmon in the new plan for operating the water projects.

Learning From the Coho Salmon Fishery Collapse

Coho salmon, one of five species of Pacific salmon found in California, once thrived in a habitat of coastal waters and inland streams stretching from Alaska to Monterey Bay. Coho salmon were able to survive changes in the ocean and river environments for millennia. But habitat degradation (especially from timber harvesting, road building, and urban runoff) caused coho populations to dramatically decline. In 1993 the National Marine Fisheries Service (NMFS) listed northern and central California coast coho as threatened under the Endangered Species Act (ESA). The commercial fishery was closed in 1993, and recreational fishing for coho was restricted in 1994 and closed in 1998.

Despite these actions, coho continued to decline, and in 2005, the NMFS listed the central coast population as endangered. There is no near-term prospect of restoring this once-rich fishery. The loss of the coho fishery is a stark reminder that without early action, sustainable fisheries can be lost for decades—if not permanently.

Salmon Is My Bread and Butter



Jacky Douglas believes that she owes a debt of gratitude to the salmon. "Salmon is my bread and butter. I wouldn't be here if it weren't for that salmon. They put my kids through college," Douglas says. She tears up as she recounts stories of introducing salmon fishing to families and the joy she has seen on the faces of children reeling in their first fish.

A veteran party-boat skipper out of San Francisco Bay, Douglas has been fishing since 1955 and has devoted her life to protecting salmon. Her passion for the fish led her to testify at congressional hearings and speak at press conferences, putting a human face on the

industry. Now she mourns the closure of the industry that has meant so much to her and to the families who introduced her to the business.

While the closure pains her, it certainly wasn't shocking news. "I knew something was wrong a few years ago, when we were just catching big salmon. When there's no small fish there's something happening," she explains. While Douglas has had a lifetime of fishing, she worries about younger generations and how the closure affects other industries. "Because I'm older I can look at it differently. If I have to, I can sell my boat, but I'm not worried about it. I'm thinking of everyone else. We could have avoided all this if we had put more effort into saving the salmon."

“The closure of the salmon fishery is among the nation’s worst man-made fisheries disasters. But we believe that we can bring back our fishery. If we do the right thing and put water back in our rivers, we can save our salmon, and save our birthright.”

ZEKE GRADER, PCFFA, AND DICK POOL, WATER-4-FISH

Better Water Management Can Help Restore the Salmon Fishery

Fortunately, we can solve these problems and restore healthy salmon runs while still meeting the water needs of the public. We can reduce diversions from the Bay-Delta ecosystem and develop fish-friendly ways to replace the water needed for people, including investments in water conservation, efficiency, groundwater management, water recycling, and urban stormwater management. We can develop better ways to divert water so that some of the dams could be eliminated, allowing salmon to reach their spawning habitat. And we can restore fish habitat and improve water quality.

Salmon are tough, resilient fish. When we have made concerted efforts to recover California’s salmon populations, the fish have returned. When we made more water available for Central California Chinook salmon in the 1990s, and made other changes to better protect salmon habitat, their numbers rebounded. In addition, although the Central Valley Project eliminated salmon from spawning in the San Joaquin River decades ago, state and federal governments, environmentalists, and water users are now

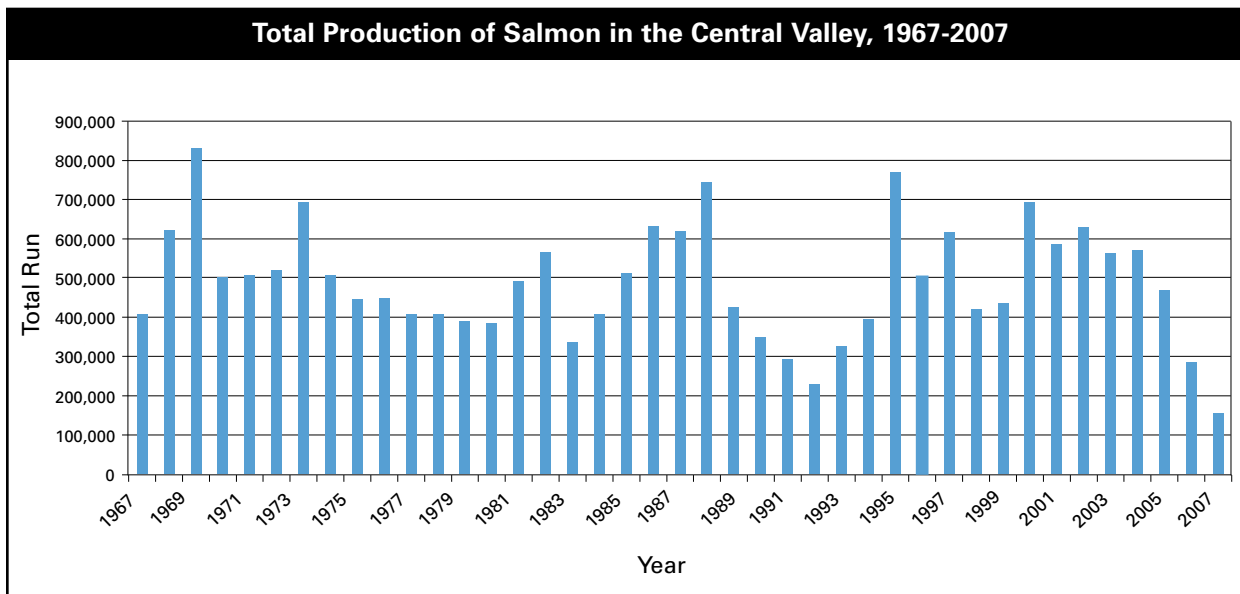


Commercial Fishing Boats in San Francisco

Image by Werner Krutein/Photovault.com

collaborating on a historic multiyear effort to restore flows and salmon to the river. And habitat restoration measures in the past decade have dramatically increased the numbers of spring-run Chinook returning to spawn in Butte Creek.

These measures alone, however, are not enough. Restoring central California’s salmon populations will require state and federal agencies and legislators to make salmon restoration a high priority and to take prompt and comprehensive action. If they fail to do so, California’s salmon fishery could be lost forever.



Source: California Department of Fish and Game, Anadromous Fish Restoration Program, www.delta.dfg.ca.gov/afrp/index.asp

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Recommendations for State and Federal Action

The future of California's salmon, and the futures of the many people who depend on these fish, will be determined during the next few years. We must act quickly and adopt comprehensive solutions to restore and sustain this treasured resource. We urge the governor, legislature, and state and federal agencies to take prompt action to:

■ **Implement the State's Salmon Doubling Goal:** The governor should issue an executive order making the recovery of salmon runs, and achieving the state's existing salmon doubling requirement, a high priority for all state agencies working on water issues, including the Department of Fish and Game, the Department of Water Resources, and the State Water Resources Control Board. The executive order should require the state's doubling goal and salmon recovery to be key goals of the strategic plan under development by the Delta Vision Task Force and of the plan being developed by the Bay Delta Conservation Plan process.

■ **Reduce Water Diversions:** Reduction of water withdrawals from the Bay-Delta ecosystem are needed to meet the habitat needs of salmon and to restore environmental health and sustainable fisheries. To meet water supply needs, California should dramatically increase investments in fish-friendly water supply alternatives, including water conservation, water recycling, groundwater management, and urban stormwater management. In the current legislative session, the legislature and the governor can enact AB 2175, a water conservation bill that would reduce per capita water use by 20 percent by 2020.

■ **Reform Management of the Water Projects:** A new state agency should be created to regulate the operations of the federal Central Valley Project and the State Water Project in order to ensure that they contribute to salmon doubling and the recovery of the Bay-Delta ecosystem. The Department of the Interior should reform CVP contracts to reduce water subsidies and incorporate needed reductions in pumping. Finally, an equitable funding mechanism should be developed to restore salmon populations and the Delta ecosystem, including the creation of a water user fee for all water diversions.

■ **Restore Salmon to the San Joaquin River:** The historic San Joaquin River settlement agreement should be fully implemented to restore flows and reintroduce salmon to the river.

What You Can Do to Help Restore Salmon

We can all pitch in to help restore the salmon. In addition to writing to elected officials to support the recommendations in this report, one of the most important things we all can do is to conserve water. You can reduce your consumption by fixing leaky plumbing; installing low flow shower heads, faucets, and toilets; and using drought-tolerant landscaping, to name a few measures. More water saving tips are available online at www.nrdc.org/cities/living/gover.asp#water. By working together to conserve water, we can reduce the need to divert water from the Bay-Delta and help protect salmon.

The System Has Failed



A commercial salmon fisherman working out of Half Moon Bay, Pietro Parravano has been fishing since 1982. This is the first time he has had to hang up his hooks. Since the closure of the salmon fishery in May, many commercial salmon fishermen in California and Oregon have been out of work. Parravano's crew has adjusted by fishing for Dungeness crab or halibut. But he wonders how long that will last, and whether they are shifting the burden onto another species of fish. "Our identity is salmon fishing, and people are concerned with what will take its place."

As Parravano describes it, the agencies and others responsible for managing California's fisheries have simply not done their job. "For the first time in history, we've had to close down an industry. This speaks volumes about how awful the situation is." He believes that the salmon industry has been at the brink for decades, as competition for water resources and habitat loss has increased. The agencies didn't take into account how vital Sacramento River salmon are to the entire industry. "This is a failure of many systems. The fact that failures in one river system can shut down fisheries in two states is beyond belief."

Parravano says that salmon need improved fishery habitat and that salmon protection should be on a level playing field with agriculture in water management decisions. "If we had some level of equality, it would set the stage to resolving this issue."