Finding the Balance

A VISION FOR WATER SUPPLY AND ENVIRONMENTAL RELIABILITY IN CALIFORNIA

ENVIRONMENTAL DEFENSE FUND
finding the ways that work

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Cover photo: San Francisco Bay Delta (credit: Mathew Grimm/Environmental Defense Fund).

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"Insanity can be defined as doing the same thing over and over again and expecting a different result."

~Albert Einstein (attributed)

Introduction

For decades, California has struggled to protect its fisheries while providing ever more water for agriculture and cities. We have periodically reached crises so severe that the courts have had to order the state and federal governments to list salmon and other fish under endangered species laws, and to issue increasingly stringent water quality standards. Most recently the courts have had to step in to limit pumping of water out of the San Francisco Bay Delta Estuary (Bay-Delta) to protect listed species. And while each crisis spawns a new effort to address the problem—new funding to be spent, and new research to be conducted—the cycle invariably repeats itself and the downward spiral of the Bay-Delta ecosystem has continued more or less unabated, tracked by the downward spiral of California's once flourishing fishing industry.

The Bay-Delta's survival as an ecosystem, and as a key element in the State's water delivery system, requires that we make bold changes in the way it is managed. The long cycle of conflict and uncertainty has proved devastating and expensive for both the environment and water suppliers. The past few decades have shown that water supply reliability cannot be ensured without ensuring environmental reliability.

The purpose of this paper is to present an environmental reliability vision for policy makers and others engaged in California's water future. Environmental Defense Fund has worked on California and Bay-Delta water issues for more than 30 years. In our view, there are six elements that are necessary components of any successful effort to achieve ecological health in the Bay-Delta, the revival of California's once-famed salmon fishery, and water supply reliability for much of the State. These are:

- Freshwater flows for fish
- Stable and secure funding
- New management approaches
- Legally mandated performance measures
- Accountability and enforcement
- Legal safety nets

Our premise is that restoration efforts must actually result in long-term, resilient, self-sustaining fisheries and ecosystems. For many years, and in many venues, official statements have asserted the need for ecosystem health, but restoration efforts have fallen far short of even modest goals. Not surprisingly, fishery crises have deepened to the point where some species are on the brink of extinction and water supplies from the Delta have become increasingly vulnerable to the interventions necessary to address these crises.

Leading scientists agree that many factors including chemical pollutants and invasive species have contributed to the decline of salmon and Delta fisheries. However, the time has come to recognize that continuing to take more and more water out of already overtapped streams and rivers is not compatible with the often heralded goals of "protecting and restoring the Delta" or "improving the ecological health of the Delta" or "establishing a sustainable Delta." Providing more water for the environment will not alone solve the Delta's ecological problems. But failing substantially to increase water for this depleted ecosystem would be an exercise in doing the same thing over and over again and somehow expecting a different result.

With the implementation of sound environmental and water supply policies, it is clear that there is sufficient water in California to

ensure a healthy and growing future for the State's cities and farms alongside its fisheries and fishing industries.[1] Environmental reliability can be the guarantor of water supply reliability.

Background

Strikingly, California has continued to take more water out of the ecosystem while attempting to restore its fisheries. As the Delta Vision report demonstrates, an increasing volume of fresh water has been diverted out of the Bay-Delta over time. Looking at the period from the mid-1990s to the present—when the most stringent environmental requirements have been put in place—it is clear that water diversions from the Bay-Delta have actually increased, as shown in Figure 1.

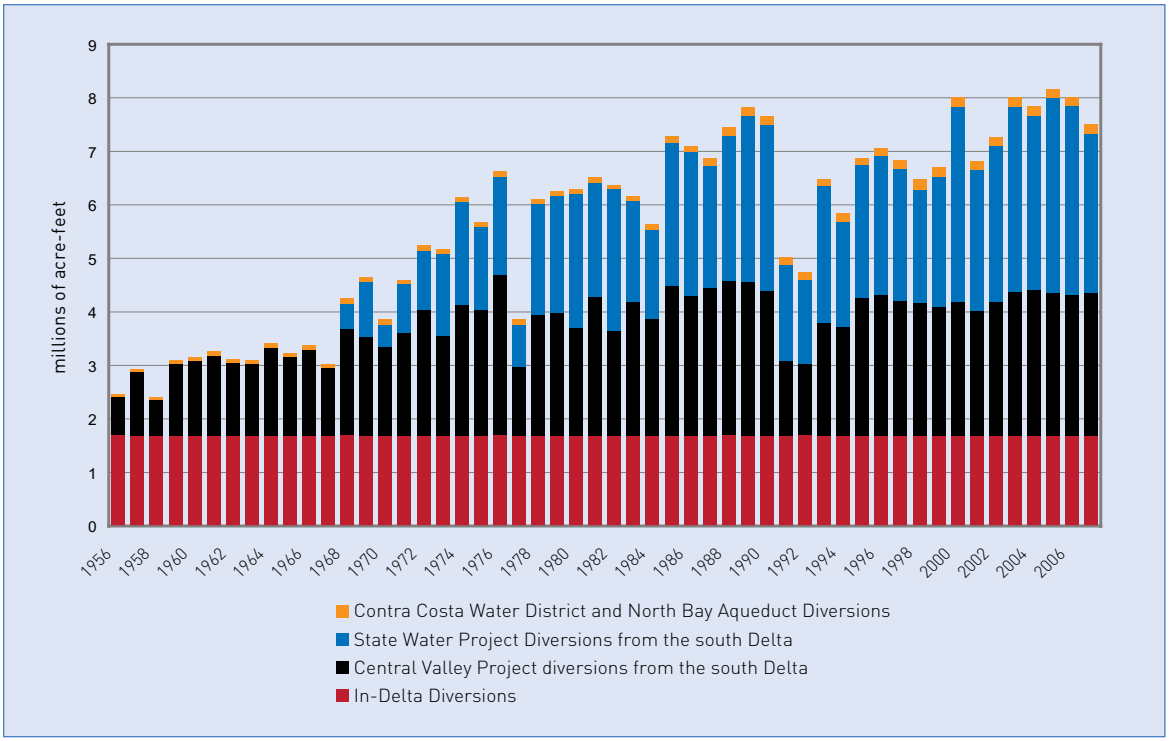
Despite enactment of the Central Valley Project Improvement Act (CVPIA), adoption of the Bay-Delta Accord, implementation of the Calfed Environmental Water Account and other recent environmental restoration efforts, little additional water has actually been provided for the benefit of the Central Valley and Delta fisheries.[2] Coincident with the increase in federal and state water project exports, Delta fisheries have crashed to their lowest levels on record (Figure 2).

1 Public Policy Institute of California, Envisioning Futures for the Sacramento-San Joaquin Delta (2007); see also Pacific Institute, California Water 2030: An Efficient Future (Sept. 2005).

2 Environmental Defense Fund. 2005. Finding the Water: New Water Supply Opportunities to Revive The San Francisco Bay-Delta Ecosystem.

FIGURE 1

CVP and SWP Diversions from the Delta



In spite of additional operating criteria to protect fisheries including the Central Valley Project Improvement Act (1992), the Water Quality Control Plan (1995) and the Calfed Environmental Water Account (2000), diversions from the Delta have reached record levels in recent years.

Source: California Data Exchange Center (also used in Delta Vision report)

Figure 2 shows that combined water project exports have noticeably increased during the years since the Bay-Delta Accord was signed and the enormous CVPIA and Calfed restoration efforts have been underway. This is not to say that some water users have not experienced substantial cutbacks in water deliveries—they have—but overall, more, not less, water has been taken out of the ecosystem over time.

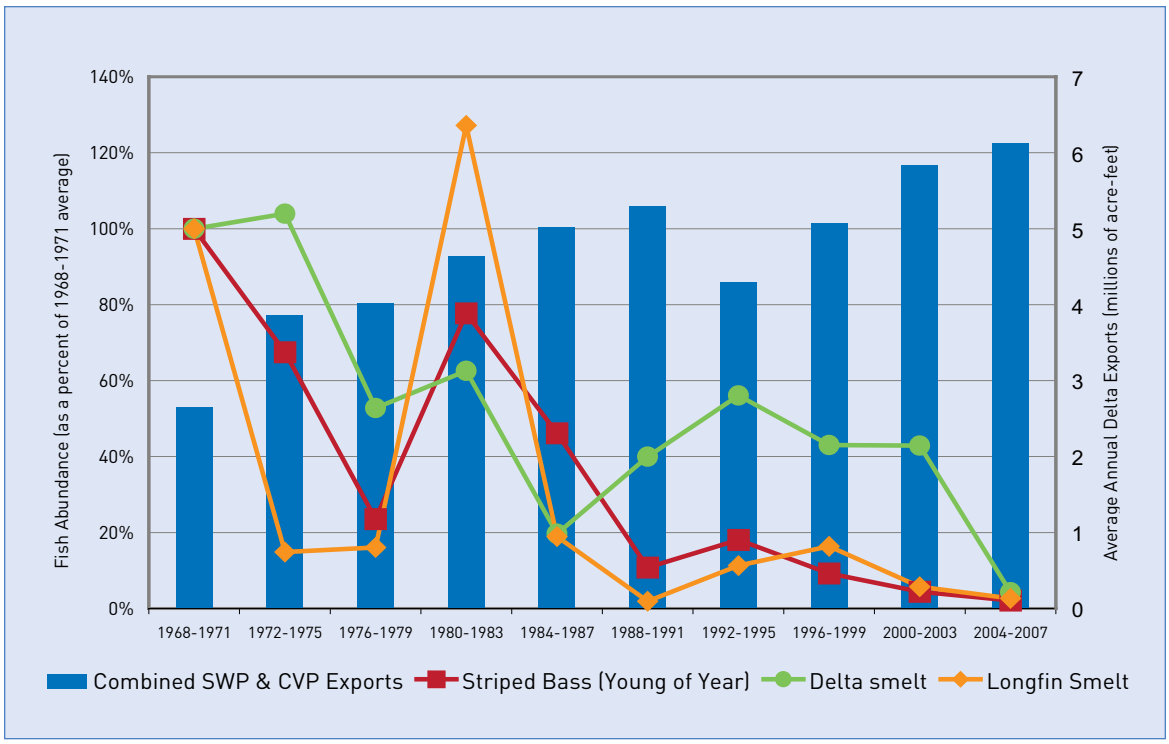
The Environmental Reliability and Water Supply Reliability Link

Most observers of California water issues have come to acknowledge that reliable water supplies require a healthy, self-sustaining ecosystem. The Bay-Delta Estuary exemplifies this relationship. Dramatic re-engineering of Central Valley rivers and streams enabling diversions of large quantities of freshwater, in addition to pesticide runoff, invasive species and other factors have devastated the ecological health of the estuary and led to serious declines in fish populations, including California's famed Chinook salmon runs as shown in Figures 3 and 4 on the following pages.

As the operation of the State Water Project (SWP) and Central Valley Project (CVP) began to take a toll on the ecosystem, the Projects found themselves in regular conflict with state and federal laws adopted over time to preserve and protect the environment. Meeting water quality standards meant that the SWP and CVP had to release more freshwater flows into the Delta to keep in check the Bay's eastward saltwater creep. Water diversions had to be modified in a piecemeal attempt to keep

FIGURE 2

Historic Delta Exports and Selected In-Delta Fish Populations



The abundance of some in-Delta species has plummeted in recent years as exports have increased.

Source: CDEC and CDFG Midwater Trawl Data

particular fish species from going extinct. In 1992, in response to mounting environmental problems, Congress amended the reclamation law governing the CVP and imposed additional requirements on federal water users. These efforts to limit environmental harm has rendered water supplies less reliable.

The safety nets provided by federal and state environmental laws, as enforced by the courts, have been somewhat effective in preventing extinctions. However, these laws were not designed—and they have not been able—to achieve lasting ecological health in the estuary. Until this is achieved, the recurring fish crises of recent years will almost certainly continue, indeed they will likely deepen, and water supplies for cities and agriculture dependent upon the Delta will remain vulnerable.

Elements of Environmental Reliability

The time is long overdue to restore the ecological health of the Bay-Delta Estuary. Learning from the failed efforts of the past, Environmental Defense Fund believes that restoration efforts at the level necessary to achieve environmental reliability will need to include each of the six policy elements outlined below.

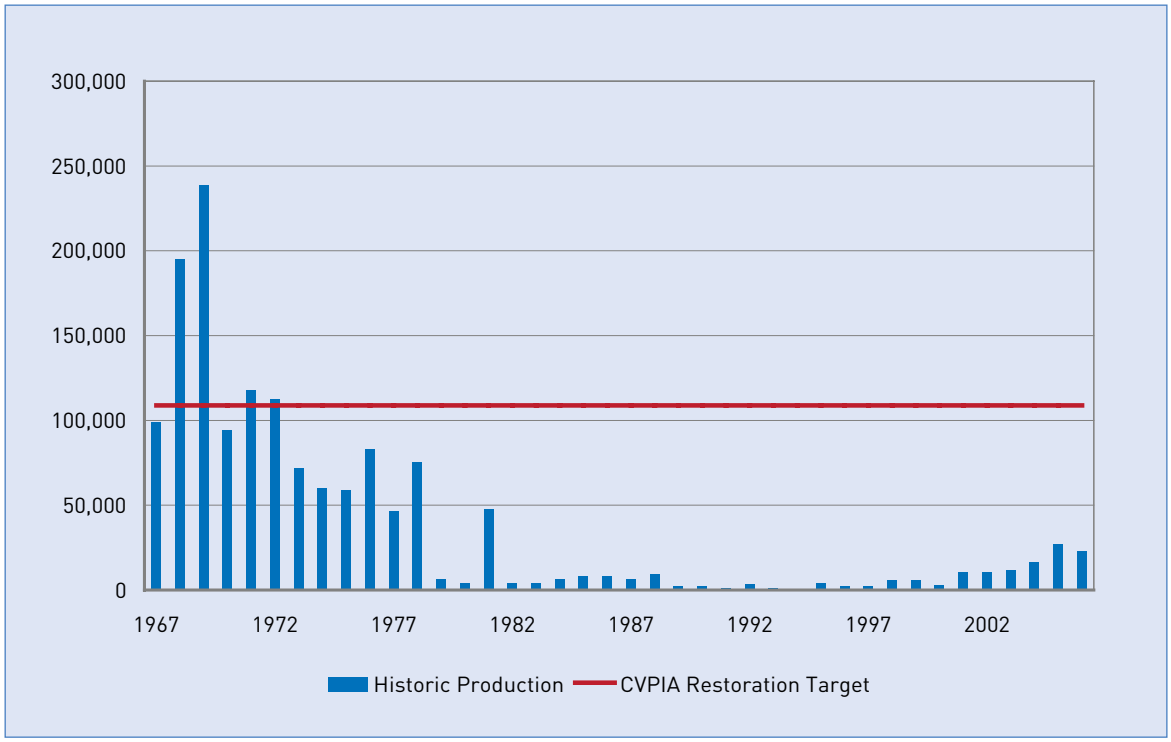
1. FRESHWATER FLOWS FOR FISH

The science is clear that additional freshwater flows are a necessary, if not sufficient, condition to achieving lasting ecological health for California's fisheries and the Bay-Delta watershed. Quantified levels of flow plus a substantial 'risk-cushion' should be established for the watershed for various water year types.[3] The

3 Owen, Dave. 2007. Law, Environmental Dynamism, Reliability: The Rise and Fall of CALFED. *Lewis and Clark Environmental Law Review*. Issue 37:4.

FIGURE 3

Winter-run—Naturally Produced Central Valley Chinook Salmon



Winter-run chinook were listed as *endangered* under the state ESA in 1989 and the federal ESA in 1994.

Source: California Department of Fish and Game Midwater Trawl

amount and timing of water for the environment should be designed to fulfill the State's duty under the public trust doctrine to protect and restore fish and habitat. Flows should be specifically geared to the achievement of the following ecological goal:

> **To restore fisheries and habitat to self-sustaining levels that can withstand the uncertainties of global climate change over at least the next 100 years.**

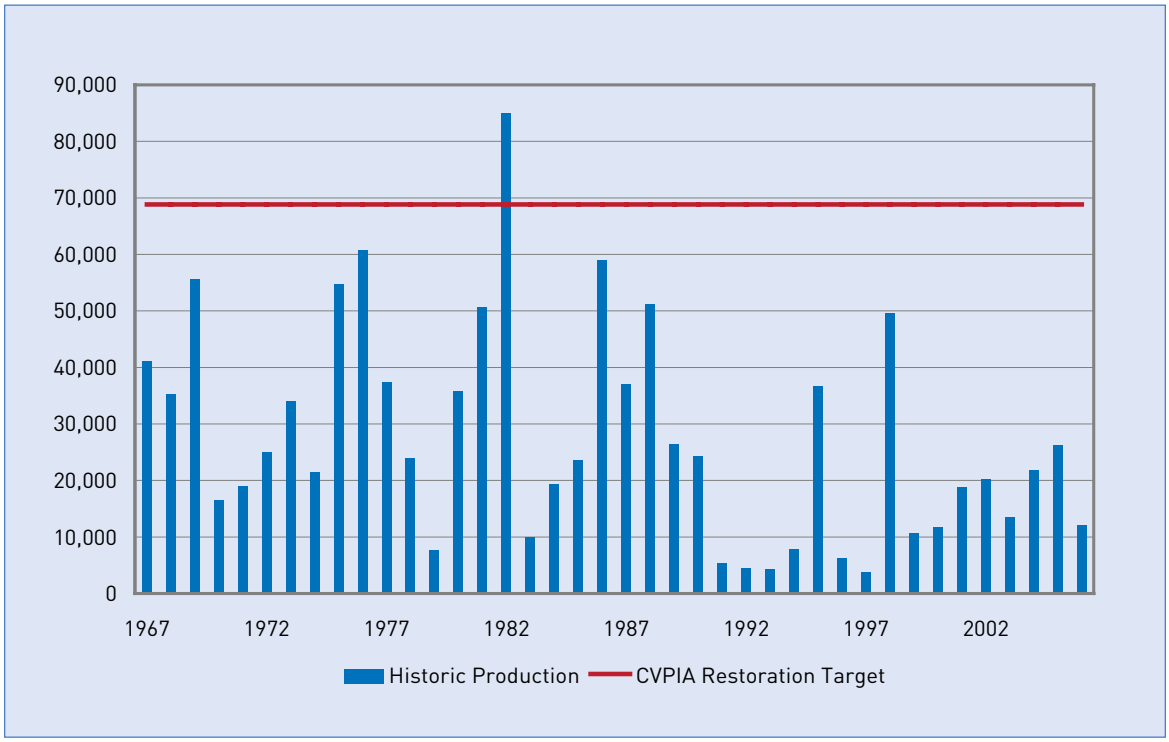
The State Water Resources Control Board (State Board) is the primary agency that serves as trustee for public trust resources. As such, the State Board is the appropriate agency to determine the water flow and other biological requirements for the trust resources of the Bay-Delta watershed. The State Board should be directed to prepare an assessment of the freshwater flows needed to achieve the goal above. This assessment should include flows upstream as well as through the Delta itself.

Substantial data has been collected to help identify the freshwater flows necessary for long-term ecological health and sustainability of Bay-Delta fisheries as part of the CVPIA salmon doubling plan and the Calfed Ecosystem Restoration effort.[4] In addition, state and federal fishery agencies are completing recovery plans for several listed species, such as the Delta smelt, which will include flow recom-

4 CVPIA Working Paper, 1995; Calfed Ecosystem Restoration Plan, 2000; *Pelagic Fish Action Plan*, 2007, Resources Agency, Department of Water Resources, Department of Fish and Game. March.

FIGURE 4

Spring-run—Naturally Produced Central Valley Chinook Salmon



Spring-run chinook were listed as *threatened* under both the state and federal endangered species acts in 1999. Source: California Department of Fish and Game Midwater Trawl

mendations as well.[5] The State Board should be directed to build upon these data collection efforts rather than start from scratch. However, it must ensure that its own assessment identifies the freshwater flow levels most likely to achieve the goal above, providing long-term health for the State's trust resources.

Once the State Board has established the biological requirements for the fish, habitat and other public trust resources of the Bay-Delta watershed, these flow requirements—plus an appropriate buffer to accommodate changed circumstances and other uncertainties—should be formally adopted by the State as enforceable mandates.

2. STABLE AND SECURE FUNDING

Stable and secure funding is critical for restoration efforts because such efforts require sustained support over long periods of time. General appropriations subject to the vagaries of state and federal budgets are politically vulnerable and, as demonstrated in Calfed and other restoration efforts, when unavailable can hamper the best of plans.[6] A variety of more reliable funding mechanisms are possible including user fees, revolving funds, and dedicated accounts.

Failure of anticipated funding to materialize for whatever reason should trigger non-discretionary changes in diversions as discussed in the next section.

3. NEW MANAGEMENT APPROACHES

In addition to establishing flow levels needed to meet ecological goals, innovations are needed to ensure that the water intended to benefit fish and the overall health of the Bay-Delta ecosystem is actually made available where and when it is required. To date, the Department of Water Resources has taken the lead in buy-

5 The Delta Vision and Bay-Delta Conservation Plan processes also include efforts to identify freshwater flows needed for the long-term health of Bay-Delta fisheries. See Ecosystem Workgroup Recommendations Strategic Plan for Restoring the Delta's Ecosystem, 2008. *Delta Vision*, May 13. These efforts should be guided by the State Board's determination of the levels of freshwater flows needed for long-term ecological health and sustainability.

6 Environmental Defense Fund. 2005. Finding the Water: New Water Supply Opportunities to Revive The San Francisco Bay-Delta Ecosystem.

BigStockPhoto

Chinook salmon run.

iStockphoto

Chinook salmon.

ing water to implement protective actions for fish, but its purchases have obviously not been sufficient to achieve the objectives set out in state and federal law. Moreover, the process in place to make decisions to protect fisheries has lacked transparency, resulting in a troubling trend in which recommended actions have on occasion been overidden for unclear reasons.

Tools to provide reliable sources of water for environmental purposes include but are not limited to:

- Establishment of a new state water right allowing for the "appropriation" of water for fish and other environmental purposes.
- Establishment of a new operational regime for the state and federal water projects elevating attainment of the ecological objectives on par with other responsibilities.
- Moving responsibility for the state and/or federal water projects to a new entity with co-equal responsibility for water supply reliability and environmental reliability.
- Creating real economic incentives for water conservation and water transfers.

4. LEGALLY MANDATED PERFORMANCE MEASURES

Achieving the ecological goal described above will require clear, performance-based measures so that all parties will know when "success" is, or is not, achieved. These measures should be codified as legally enforceable mandates that require success by a certain date, and that have consequences if they are not met. In the Delta Vision and Bay Delta Conservation Plan (BDCP) processes, for example, the performance measures under consideration should define success as the restoration of particular native fish population levels to those last experienced over a specific historic period.

Some restoration mandates already exist, most notably the salmon doubling standard enshrined in California's Salmon, Steelhead Trout, and Anadromous Fisheries Program Act of 1990, the 1992 CVPIA, and the 1995 Water Quality Control Plan. While each of these programs has made progress and produced some

benefits, California is still far short of achieving the salmon doubling objective. Indeed, salmon populations have declined so precipitously that the entire fishery has been shut down this year. Moreover, other than the protections afforded by endangered species laws, there are no mandates or performance measures yet in place for in-Delta fisheries such as Delta and smelt or Sacramento splittail.

The Delta Vision and BDCP processes may produce the performance measures needed to achieve the ecological health goal above. However, there could be substantial benefit in delegating this task to a panel of impartial, highly qualified biologists using a process similar to the one used by the San Francisco Estuary Project in the 1990s to break the impasse over Bay-Delta salinity standards.[7] There are a variety of other options as well for developing these measures. The key is that performance measures are crafted that are credible, are highly likely to achieve the ecological health goal, and are then applied consistently in all of the Bay-Delta restoration efforts.

7 San Francisco Estuary Project. 1993. Managing Freshwater Discharge to the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: The Scientific Basis for An Estuarine Standard.

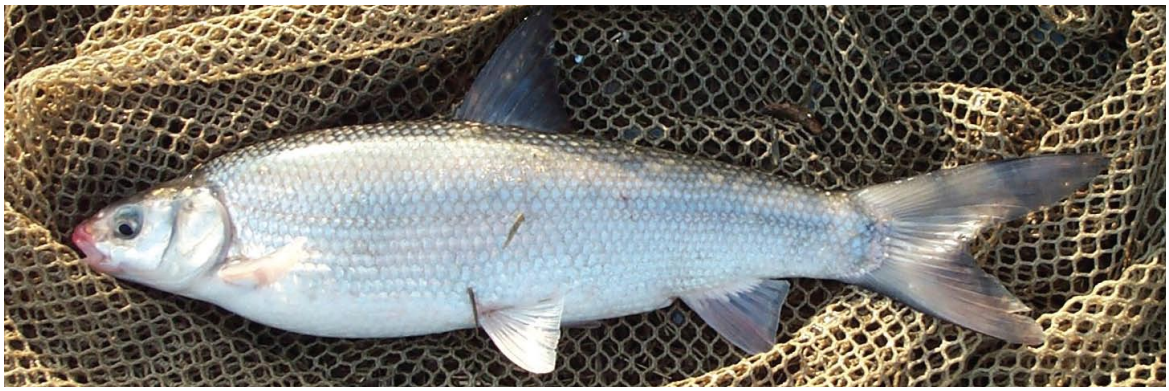
5. ACCOUNTABILITY AND ENFORCEMENT

Once performance measures are identified, they should be codified by the State legislature and made binding on all operations and facilities affecting the Delta watershed. A key problem with restoration efforts in the Bay-Delta and elsewhere has been that there have been few if any consequences for failing to reach restoration goals until crisis points are reached and endangered species laws are triggered. A bedrock element of environmental reliability is therefore a provision for automatic, non-discretionary changes in water project operations and other diversions in the event that the program elements above—such as water or money—do not materialize or the performance measures are not achieved by established deadlines.

This recommendation assumes that—just as the Calfed Record of Decision provided—Delta Vision, BDCP or other processes will assert an objective of providing to water users some level of "regulatory relief" from state and federal endangered species obligations. The purpose of this environmental reliability tool is to ensure that if the restoration effort goes astray or fails to meet its targets, water diversions throughout the system are automatically

B. Moose Peterson/USFWS

Delta smelt.



California Department of Water Resources

Sacramento splittail.

changed until the restoration effort is back on track. This tool also represents an effort to share both the burden and the investment in the restoration program throughout the diverse community of water users.

The non-discretionary nature of this tool is intended to provide the incentive necessary to ensure that environmental recovery is viewed as a full partner in the water supply system. Similarly, ESA-related promises to continue with "covered" activities in the event that environmental assurances are not met should be automatically suspended in the event that performance measures are not achieved.

The focus on attaining environmental reliability should not be on which activities are "at fault". Rather efforts should focus on those actions most likely to support achievement of the mandated goals with the understanding that some factors—such as changing ocean conditions—are beyond the reasonable reach of any near-term restoration efforts.

There is substantial precedent for this approach in the context of the ocean fishery: few if any biologists maintain that the highly regulated ocean harvest is primarily "at fault" for the dramatic decline in salmon populations. Nevertheless, there is virtual unanimity among those same biologists that closing down the ocean harvest is the best way to avoid further harm to these fish. The analogy is appropriate in the Central Valley watershed where these fish come from as well.

6. LEGAL SAFETY NETS

Citizen suit provisions should be included in any comprehensive Delta plan to ensure rights of access to courts to enforce environmental promises. In addition, continued rights to seek redress under existing law, such as state and federal endangered species acts, the public trust and reasonable use doctrines, and Fish and Game Code Section 5937, to cite just a few examples, should remain intact.

Conclusion

For many years water users have maintained that water supply reliability is essential for the continued economic vitality of their industries and the State. Environmental Defense Fund believes that this is a legitimate position. By the same token, environmental reliability is critical if we are to move beyond assertions about the need for sustainable fisheries and toward actual achievement of this goal. Water supplies will remain vulnerable as long as the environment remains at the brink of disaster. As discussed above, respected analysts are demonstrating that California has enough water for its farms, cities and fisheries. We believe that the six elements above constitute the necessary foundation for lasting ecological health, and with this, a sustainable, reliable water supply for Californians.

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