Managing California's water: From conflict to reconciliation

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The rapid decline of salmon and the steady increase in the number of endangered fish species show that a new approach is needed to manage California's aquatic ecosystems, according to the book "Managing California's Water: From Conflict to Reconciliation," co-authored by Buzz Thompson, co-director of the Woods Institute for the Environment.

Published by the Public Policy Institute of California (PPIC), the book proposes moving away from the current strategy of taking desperate action to save one species at a time under the federal and state Endangered Species acts. Instead, the authors argue for a broader approach - creating better conditions for many species and addressing the multiple causes of ecosystem decline.

"In some ways, California is already in a crisis, but the crisis is moving so slowly that the state's leaders and residents often fail to recognize it," wrote Thompson and his co-authors. "Given anticipated changes in demographic, economic, climatic and ecosystem conditions, today's conflicts are likely to worsen unless California can quickly develop significant, forward-looking changes in water policy."

The state has run out of cheap new water sources, and agricultural and urban water users now compete among themselves and with environmental demands, the authors said. Current policies and institutions are fragmented and failing to meet growing needs for reliable, high-quality water supply, healthy ecosystems and flood

protection. Climate warming is expected to complicate these challenges, the authors noted.

"Today's system of water management, developed in previous times for past conditions, is leading the state down a path of environmental and economic deterioration," said co-author Ellen Hanak, senior fellow at PPIC. "We're waiting for the next drought, flood or lawsuit to bring catastrophe. But if we take bold steps now, we can move from an era of conflict to one of reconciliation, where water is managed more flexibly and comprehensively, to benefit both the economy and the environment."

The decline in aquatic ecosystems reflects a broader failure of water management in California, the authors said. Despite several decades of well-intentioned environmental regulations, more than 80 percent of the state's 129 native fish species are extinct or imperiled - listed as endangered or threatened, or likely to qualify for listing in the future. Piecemeal efforts to stop the declines now threaten the reliability of water supplies and flood management projects. Yet the deterioration is expected to accelerate because of continuing influxes of invasive species, increasing diversions of water, and losses of coldwater habitat.

Shifting the management focus from individual species to broad ecosystems should include a number of strategies - for example, removing or setting back levees to promote seasonal flooding, reducing the discharge of contaminants, limiting introduction of invasive species, and improving the environmental performance of some dams while removing others altogether.

New management approaches

The authors also recommend using a wider range of tools to manage water supply, quality and flooding. The current system relies too heavily

on major public works - dams, levees, conveyance facilities and treatment plants. New approaches offer more promise, including:

• **Urban conservation**. Per-capita water use has been falling, but Californians still use much more water than people in similar climates, such as Australia, Israel and Spain. Reducing water use to about 155 gallons per capita a day - 30 percent below 2000 levels - would significantly reduce urban demand for exports from the Sacramento-San Joaquin Delta.
• **Groundwater banking.** Expanding underground storage can be much more cost-effective than building new surface storage. Groundwater banking can stretch available water supplies and replace storage lost if the Sierra Nevada snowpack shrinks.
• **Water transfers**. Buying and selling water is an equitable way to accommodate changing demands and compensate water rights holders. Water marketing has considerable potential, because much farmland is planted in low-value crops. However, legal and institutional barriers must be reduced.
• **Pollution management.** Despite progress in water cleanup, runoff from farms, construction sites, and urban streets and gardens is not well managed. Cap and trade schemes can lower the costs of implementing standards for maximum daily discharge of pollutants.
• **Flood management**. Flood risks are high and increasing, and investment has been inadequate to maintain flood-protection infrastructure. Land-use planning should focus on limiting new development in flood-prone areas, improving building codes and expanding flood insurance requirements. Higher fees for properties benefitting from flood protection would bolster the state's woefully underfunded system.

Integrated system

The authors' third key recommendation is to integrate California's

fragmented water management system. One serious weakness is that hundreds of local and regional agencies separately manage supply, quality, floods and habitat. This leads to confusion and missed opportunities. The authors propose creating regional stewardship authorities, set up at the scale of watersheds, to coordinate functions.

"Some of these reforms will require changes in laws and institutions, while many build on existing efforts and can begin to be implemented now," said co-author Jay Lund, director of the UC-Davis Center for Watershed Sciences and adjunct fellow at PPIC. "California can't afford not to take bold steps now. By the time a crisis strikes, the best solutions may be unavailable or far more costly, and political positions too entrenched to overcome."

More information: www.ppic.org/main/publication.asp?i=944

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