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Delta Poses “Wicked” Problems That Must Be Managed
Scientists Summarize Challenges, Complexities in Vital Estuary

SACRAMENTO, Calif. – Problems in the Sacramento-San Joaquin Delta are so complex as to fit the scientific definition of “wicked” – meaning, they cannot be ignored, defy straightforward characterization, and have no simple solutions. Yet the Delta must be managed to avoid disaster, and difficult political decisions will be necessary in the face of uncertainty.

Thus concludes a panel of four independent scientists with extensive Delta experience who summarized conflicts and challenges at the request of the California Natural Resources Agency, U.S. Department of the Interior, and NOAA Fisheries.

“Complex, wicked problems like the Delta rarely yield to the simplistic solutions directed at only one dimension of the problem,” states the report.

The scientists concluded that Delta challenges reverberate across Western states and the world. The Delta supplies two-thirds of California’s population and one-third of its irrigated farmland. Water supply issues in the Delta have ramifications for states that depend upon the Colorado River and California’s biggest-in-the-nation agricultural economy, while migratory waterfowl and fish connect the Delta to nations north and south.

The Delta is one of the most intensively studied systems in the world, but the status quo in the Delta is unsustainable and Delta problems “cannot be solved in the traditional sense,” according to the four authors, each of whom has served as Lead Scientist for the Delta Science Program under the auspices of the Delta Stewardship Council.

“Yet they must be actively managed to maximize beneficial and minimize adverse outcomes,” the scientists state.

“The message from this report is clear,” said California Secretary for Natural Resources John Laird. “While different stakeholders express strong differences about project options and proposed habitat restoration – doing nothing is worse than anything on the table. We cannot be distracted from that fact. It should motivate us to find solutions together to the complex problems outlined in this report.”

The report, “Challenges Facing the Sacramento-San Joaquin Delta,” urges Delta managers – more than 230 agencies, institutions, and stakeholders are involved -- to become more nimble and better coordinated, and to act incrementally with the understanding that any management action “typically leads to new complexities.”

“Managing the water supply system alone is complicated,” wrote the authors. “But add in the imperative to sustain the ecological and social values of the Delta and every decision becomes unimaginably complex.”

The report is available [here](#).

Secretary Laird requested the report in July 2015, along with the regional directors of the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. They asked Peter Goodwin, lead scientist for the Delta Stewardship Council’s Delta Science Program, to convene an independent science panel “to provide a synthesis of prior studies and contemporary scientific understanding of the continuation of status quo management of the Delta.”

“This report is an urgent call to action,” said Deputy Secretary of the Interior Michael L. Connor. “The Department of the Interior concurs with the authors – four of the most eminent Delta scientific experts – that the status quo of Delta water management is ‘unsustainable.’ We must adopt bold, new approaches and any necessary water infrastructure improvements should be accompanied by a portfolio of actions such as water conservation and efficiency measures, habitat improvements, and improved groundwater management and storage. We will continue to work at every level on every front to answer this call to action.”

Forty percent of California’s land mass drains westward to the Delta through the Sacramento and San Joaquin rivers. Tides push saltwater from San Francisco Bay east into the Delta. Once a vast expanse of wetlands and sloughs, the Delta has been converted to more than 60 levee-ringed islands, most farmed. The Delta is a critical point in a network of dams, pumps, canals, drains, and reservoirs, all of which are managed jointly by local, state, and federal institutions to meet goals for flood control, water supply, and environmental conservation.

The Delta also hosts more than 750 species of plants and animals, some of them listed under state and federal endangered species laws.

Federal, state and local governments have struggled for the last three decades to preserve the important economic, ecological, social, and cultural functions of the Delta in the face of demand for water that frequently exceeds available supply. The report finds that improved scientific understanding of the Delta is fundamental to progress – but tough decisions cannot wait for perfect knowledge.

“Continuously improving models and scientific understanding of the Delta problem is necessary but not sufficient to manage successfully the complex technical, political and resource challenges facing the Delta,” the authors conclude. “Difficult political decisions will be necessary in the face of uncertainty.”

Federal and state officials are working on multiple fronts to achieve dual goals in the Delta of protecting and restoring the ecosystem while providing a more reliable water supply for California. The Brown and Obama administrations seek to modernize the pumping system that diverts Delta water to 25 million Californians. California WaterFix, a \$15 billion infrastructure proposal now undergoing environmental review, would reduce ecological harm from the existing system and safeguard deliveries from natural disaster.

The state also is pursuing restoration of at least 30,000 acres of Delta habitat over the next several years and encouraging regional water supply self-sufficiency through the Department of Water Resources’ integrated regional water management planning and grants programs. The State Water Resources Control

Board is working to complete its update of the Water Quality Control Plan for the Delta and its upstream watersheds. The plan will balance competing uses of water including municipal and agricultural supply, hydropower, fishery protection, and recreation.

For more information about these efforts, see the California Water Action Plan [here](#).

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