# Whiskey Is for Drinking: The Never Ending Battle over California Water

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Rain and snow returned to California in the winter of 2015–2016. The anticipated El Niño-driven deluge never appeared, and the severe four-year drought will extend to at least five years. The rain and snow did little to resolve the historical battle to address California's enormous long-term water supply shortfall and related environmental challenges. The state's water supply system, once the envy of the world, is in crisis.

Two decades of collaborative planning and a quarter of a billion dollars in focused environmental studies have failed to generate a political or regulatory consensus for any solution. Governor Jerry Brown's proposed solution set—an "all of the above" strategy, which includes a long-term fix to state and federal water project delivery system defects, large investments in habitat and water conservation measures, and restoration of the San Francisco Bay and Delta—faces intense political opposition in northern California and surely a decade or more of legal challenges. The alternatives that the environmental community favors, which include sharp reductions in urban and agricultural deliveries from the state and federal water projects, increased water conservation, reuse of treated effluent, and storm water capture, all face major engineering, fiscal, and political barriers.

The crisis is a century in the making. Development of distant water supplies from the Sierra Nevada Mountains to support growing population centers began in earnest at the beginning of the twentieth century. As famously caricatured in the movie *Chinatown*, Los Angeles acquired water rights on the eastern slope of the Sierra and delivered the water several hundred miles south. San Francisco followed Los Angeles's lead, beating back the opposition of the nascent Sierra Club to win congressional approval to dam the Tuolumne River in Yosemite National Park to deliver water and power to San Francisco. During the Great Depression, the federal government began work on the Central Valley Project (CVP), a system of dams and canals delivering water to the agriculture-rich Central Valley. The CVP includes large dams on the Sacramento River (Shasta Dam) and on the San Joaquin River (Friant Dam).

Spearheaded in 1960 by Governor Jerry Brown's father, Governor Pat Brown, the state's voters approved State Water Project (SWP) financing to deliver water from the Feather River in northeastern California to much of the state including Sacramento Valley, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, metropolitan Los Angeles, and San Diego. Today, the SWP includes 34 storage facilities, 700 miles of canals, and 24 pumping plants. Seventy percent of the SWP water is delivered to 25 million of California's 38 million residents, with the remainder providing water for Central Valley agriculture, which is the breadbasket of the nation and the world. Fifty percent of the state's water is used for environmental purposes (e.g., instream flow requirements and wild rivers), 40 percent for agriculture, and 10 percent for urban uses. The division between urban and agriculture use is misleading because, of course, urban residents consume food grown with water. It is estimated that the average American consumes 300 gallons of California water per week in food grown in California. The fruit, nuts, and vegetables exported by California to feed the nation and the developed world are the product of California water.

The Sacramento-San Joaquin Rivers Delta east of San Francisco Bay is the SWP and CVP water supply system's hub. Water cannot be delivered to urban and agricultural users south of the Delta (including Silicon Valley, the state's current economic engine) if it cannot be moved across and through the Delta. Water from the major reservoirs flows down the Sacramento and Feather Rivers to the south boundary of the Delta where very large pumps move the water into aqueducts for delivery to southern California, the San Francisco Bay Area, the Central Coast, and the San Joaquin Valley. When operating, the pumps reverse the natural northern and western flow in reaches of two San Joaquin River channels to varying degrees, and draw both water and fish into elaborate fish screens in front of the export facilities.

In the early 1990s, the Delta smelt and Sacramento River winter-run Chinook salmon were listed under the Endangered Species Act (ESA) and the California ESA. Populations of these fish and others subsequently listed under the federal and/or California ESA that reside for all or a portion of their lives in the Sacramento and San Joaquin River systems have declined markedly over the last two decades. Survey index values of the tiny Delta smelt, once the most abundant fish in the Delta, are at their lowest levels since surveys began five decades ago. Wild salmon runs on the Sacramento River have increased from very low levels in the early 1990s, but remain chronically low. The endangered wild salmon mix with more abundant hatchery salmon in the Pacific Ocean. Many wild salmon are harvested by the commercial salmon industry before they return to the rivers to spawn.

Converted to farming in the nineteenth century, much of the pre-Gold Rush complex of wetlands, channels, and sloughs in the Delta is long gone and will never be replaced. Oxidation of the Delta's peat soil by farming lowered the elevation of islands in the Delta by as much as 30 feet, necessitating an extensive levee system. Non-native species dominate the Delta. Some, such as the predatory striped bass, were introduced over 100 years ago to support sport fishing. Others,

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such as an Amur River clam and Asian clam (competitors with the Delta smelt for food), more recently hitched rides on ocean-going cargo ships headed for ports in Sacramento and Stockton. Non-native predatory fish, such as the striped bass, join other non-native fish in eating a large percentage of the juvenile salmon in the Sacramento River as they migrate to the ocean. In 2011, in response to sport fishing industry protests, the California Fish and Game Commission rejected a research program proposed by the state and federal wildlife agencies that would increase sport fishing limits of striped bass to reduce striped bass predation of listed species. Sacramento's regional sewage treatment system discharges large volumes of treated sewage into the Sacramento River north of the Delta, altering its chemistry and the food web that supports its native fishes. After years of litigation brought by southern California urban water districts, the California water quality agency imposed more stringent treatment requirements on the Sacramento sewage treatment discharges. Urban areas on the outer bounds of the Delta discharge untreated urban runoff further contaminating the estuarine waters. Some scientists maintain that the mix of fishes in the Delta, which is the West Coast's largest estuary, increasingly resembles that of a freshwater system in the southeastern United States.

There is a material consensus acknowledging the factors that are contributing to the decline of the Delta ecosystem and the listed species, but there is considerable disagreement regarding each factor's relative contribution to the decline.

Climate change and projected sea level rise pose other challenges. Delta communities and farmland are protected by antiquated earthen levees built many decades ago. The state's risk managers predict that the levees will fail in a major earthquake, inundate Delta farmland with salt water, and shut down the primary water supply for much of the state. Long term, climate change is projected to change the state's precipitation patterns, resulting in warmer and drier conditions with less snow and more rain, which will further complicate an already confoundingly complex system. This trend is particularly vexing because, historically, large amounts of snowpack in the winter have provided abundant natural storage, and the water supply system is engineered in reliance on that natural storage.

There is a material consensus that all of the above factors are contributing to the decline of the Delta ecosystem and the listed species, but there is considerable disagreement regarding each factor's relative contribution to the decline. The CVP and the SWP (collectively the Projects) are the key focus and targets of the regulators and environmental litigants because they are very large projects that are also convenient federal ESA litigation targets. The Projects are administered cooperatively by the federal Bureau of Reclamation and California Department of Water Resources and so have a continuing federal nexus, triggering the stringent protections of section 7 of the ESA (16 U.S.C. § 1536). The federal nexus for many of the other activities is more tenuous, requiring litigants to seek redress through state law or more challenging litigation theories under the ESA prohibition on "taking" federally listed species (16 U.S.C. § 1538). It is politically popular (especially in northern California) to blame southern California urban development and Central Valley agriculture for the problem, rather than to focus on the cumulative contribution of many activities carried out by large and small interests on behalf of tens of millions of Californians across all regions of the state over more than a century of the state's development.

Numerous users upstream of the Delta divert significant amounts of water, but with the exception of the CVP and SWP, these diversions remain largely unregulated under the federal and state ESAs. In recent years, southern California and Central Valley urban and agricultural water users have directed enforcement actions under state law and the ESA at the Sacramento sewage treatment discharges, untreated urban runoff into the Delta, Delta power plant diversions, state management of the striped bass, the Federal Emergency Management Agency's flood insurance program, non-Project water diversions, and other activities contributing to the cumulative degradation of the Delta ecosystem. Despite these enforcement actions directed at other causes of the Delta's decline, the state's two large water projects are the focus of the continuing battle.

### *The Delta Smelt and Salmonid Litigation*

At the turn of the twenty-first century, survey value indices for the Delta smelt and other pelagic organisms took a turn for the worse, triggering environmental organizations to bring ESA and NEPA challenges to the operation of the SWP and CVP. In 2007, the United States District Court for the Eastern District of California held that the biological opinion regarding impact of the SWP/CVP on the Delta smelt violated the ESA for several reasons including that (i) the adaptive management program did not require specific mitigation measures in response to trigger events, and (ii) the opinion failed to include reliable smelt population and abundance data or to adequately analyze cumulative effects. *Natural Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 522 (E.D. Cal. 2007). The court granted plaintiffs' request for injunctive relief, imposing additional restrictions on the operation of the SWP and CVP pending the preparation of a new biological opinion.

The Fish and Wildlife Service and the National Marine Fisheries Service prepared new biological opinions governing the operation of the SWP/CVP. The opinions included determinations that continued SWP/CVP operations were likely to jeopardize a number of listed species. The Services therefore imposed "reasonable and prudent" alternatives consisting of a complex set of regulations governing the Projects, including new measures regulating water deliveries during almost all times of the year. For the first time, the regulations required additional water in the autumn intended to benefit Delta smelt in the northern and western portion of the Delta in above-normal water years. When combined with the state water quality regulations, the biological opinions imposed material

restrictions on water deliveries in every season, and in every hydrologic year type, including wet years when water is plentiful. The biological opinions are implemented through a committee of agency staff who make operational decisions on a weekly basis. As a result, the biological opinions effectively transferred the day-to-day management of the CVP and SWP from the federal Bureau of Reclamation and California Department of Water Resources to the federal wildlife agencies.

This time, the California Department of Water Resources and the urban and agricultural water districts went to court to challenge the new biological opinions. The same district judge who had previously sided with the environmental group plaintiffs once again concluded that the Delta smelt biological opinion violated the ESA on numerous grounds, including the failure to use the best available scientific data in the evaluation of SWP/CVP operations, and to justify key elements of the biological opinion and the reasonable and prudent alternative, including the spring and fall export restrictions. *Delta Smelt Consol. Cases*, 760 F. Supp. 2d 855 (E.D. Cal. 2010). On similar grounds, the court concluded that the National Marine Fisheries Service biological opinion violated the ESA. *The Consol. Salmonid Cases*, 791 F. Supp. 2d 802 (E.D. Cal. 2011). The common thread of both decisions is that the Services violated the ESA's "best scientific data available" requirement by failing to use accepted statistical methods and failing to adequately document the grounds for key elements of the biological opinions.

The Ninth Circuit reversed both district court decisions. *San Luis & Delta Mendota Water Auth. v. Jewell*, 747 F.3d 581(9th Cir. 2014); *San Luis & Delta Mendota Water Auth. v. Locke*, 776 F.3d 971 (9th Cir. 2014). While acknowledging that the Fish and Wildlife Service employed a "flawed" model, the Ninth Circuit panel majority in *Jewell* concluded that "the fact that the [Fish and Wildlife Service] used one flawed model over another flawed model is the kind of judgment to which we must defer." *Jewell*, 747 F.3d at 620. The level of deference to the agency's methods and its judgment on what constitutes the "best science available" will make it very difficult, at least in the Ninth Circuit, for environmental and regulated communities alike to challenge agency ESA decisions.

### *The Fallout of the Drought and the Biological Opinions*

Water managers refer to "normal" precipitation, but "normal" is a statistical construct. Annual precipitation in California varies widely from year to year. The ability of the SWP/CVP to satisfy urban and agricultural needs greatly depends on delivering water to storage facilities south of the Delta in above normal and wet years for subsequent use in dry years. The focal point of the ongoing battle, then, is on the extent to which water in wet years will be available for storage for consumptive uses in subsequent dry years.

The wildlife agencies issued the biological opinions at the beginning of a historic drought. Following three years of devastatingly low precipitation, the state estimated the 2014–2015 Sierra snowpack to be at its lowest in 500 years. Exacerbated by the drought, the winter, spring, and fall flow regulations in the biological opinions resulted in substantial reductions in deliveries for human uses. The reductions were not limited to drought years. Large cuts in water deliveries occurred in 2011, a very wet year, and in 2016, a near-normal year when reservoir managers released water stored in full reservoirs to reduce flood risks. In 2016, federal contractors with junior water rights are limited to five percent of their contracted amount of water. State water contractors are limited to 60 percent of their contracted amounts. By some estimates, the amount of water that is not available for delivery for human uses as a result of ESA restrictions in 2016 exceeds one million acre feet—enough water for over two million residential households during the course of an entire year.

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The House of Representatives passed the Western Water and American Food Security Act in 2015 and introduced the Energy and Water Development and Related Agencies Appropriations Act in 2016. *See* H.R. 2898, 114th Cong. (2015) and H.R. 5055, 114th Cong. (2016). The Senate introduced its own version of the appropriations bill, S. 2804, 114th Cong. (2016). These pieces of legislation would provide greater flexibility to the water and wildlife agencies to allow capturing additional water for export in wet years. Senator Dianne Feinstein (D–CA) has sponsored another pending Senate bill, the California Long-Term Provisions for Water Supply and Short Term Provisions for Emergency Drought Relief Act, S. 2533, 114th Cong. (2016). All of these bills attempt to provide greater flexibility in the management of the Projects without amending the ESA or biological opinions. To achieve this objective, the legislation will need to pass through an extremely fine political, regulatory, and legal needle. Northern California interests oppose this legislation. Even if Congress manages to navigate this daunting political gauntlet, the legislation will almost certainly be challenged as inconsistent with the ESA as interpreted by the Ninth Circuit Court of Appeals in the Delta smelt and salmonid cases.

Restrictions on surface water supplies have resulted in a dramatic shift to groundwater use in Central Valley, overdrawing several basins and stimulating new groundwater use legal and legislative battles. After decades of effort, the California legislature enacted a law to regulate groundwater use for the first time in the state's history. Cal. Water Code § 10,720 *et seq.* While the state will implement groundwater regulations

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over 20 years, the legislation is projected to reduce agriculture in Central Valley communities dependent on groundwater. One recent estimate is that the combined effect of the groundwater law and the environmental restrictions on CVP/SWP operations will force the fallowing of two million acres, or 40 percent of land in irrigated agricultural production in the San Joaquin Valley. Agriculture is the dominant economic activity in the San Joaquin Valley communities. There is great fear that the economic livelihood of these communities will evaporate.

Increased water costs further exacerbate the substantial rich-poor divide in California. Adjusted for the cost of living, California has the largest percentage of its population living below the poverty line of any state in the nation.

### *The Search for a Solution*

Even though all of the state's major urban areas depend very substantially on imported water, water is the "third rail" of California politics. Water is viewed as a surrogate for population growth. In the most populous state in the nation, there is substantial political antagonism to any policy that is viewed as facilitating growth. Four decades ago, then in his initial terms, Governor Jerry Brown and the California legislature identified a partial solution to some of the Delta's problems. They authorized a project that would have allowed water to be diverted north of the Delta, eliminating the hydrology and fishery impacts of the SWP/CVP pumps in the south Delta. Despite support from the two-thirds of the state's population in southern California, overwhelming opposition in northern California to any project that might increase deliveries to central and southern California killed the measure.

With Delta resource values continuing to decline, the U.S. Environmental Protection Agency proposed to preempt state management of the Delta under the Clean Water Act in the 1990s. The Clinton administration negotiated the "Delta Accord" to avert a federal takeover of water quality regulation. A key Delta Accord feature included dedicating more spring flows to the environment and concomitant reductions in spring water deliveries to the SWP/CVP. The Delta Accord made the CVP/SWP rely even more on moving water through the Delta in other seasons and in wet years.

In 1992, Congress enacted major changes to the CVP, including the dedication of substantial water and funding for salmon habitat restoration. Pub. L. No. 102-575, 106 Stat. 4706 (1992). The CVP Improvement Act set out to double fish populations, but has failed to achieve anything close to the goal. Paradoxically, the congressional doubling goal includes native salmon and steelhead and the non-native striped bass that feed upon those fish. An expert panel that conducted an independent science review of efforts to implement the CVP Improvement Act found these doubling goals to be internally inconsistent.

Over the next decade, the state and federal government invested over a billion dollars in an elaborate Cal-Fed science program designed to identify and implement measures to restore and enhance environmental conditions in the tributary rivers and the Delta. Premised on the notion that a well-funded collaborative federal-state science and restoration program would improve ecological conditions and the reliability of the water supply, Cal-Fed is widely considered to have been a failure.

Cal-Fed's demise led to yet another collaborative effort to find common ground among the warring interests: the Bay Delta Conservation Plan (BDCP). The BDCP is a federal ESA habitat conservation plan (HCP) and a California Natural Community Conservation Plan (NCCP), which is California's version of a landscape-level, multi-species HCP. Cal. Fish & Game Code § 2800 *et seq*. The effort began with broad stakeholder support from a number of environmental groups and public water agency representatives, with active participation by state and federal agency representatives. After a decade-long study (and a $250 million expenditure funded by the state and federal water contractors), the participating interests identified a proposed project including a 40-mile long tunnel around the Delta to eliminate or minimize the adverse hydrologic and species impacts of the South Delta pumping plants, combined with a multi-billion dollar Delta habitat restoration program.

The proposal's ink was not yet dry when the already shaky consensus began to evaporate. It started with some environmental groups walking away from the process, and gained momentum as federal wildlife biologists expressed their opposition to the proposal when it was still in the planning stages. In 2015, the federal wildlife agencies signaled that they were not willing to approve long-term permits for the BDCP, or to provide any meaningful limits on future restrictions on water deliveries. The state of California then shifted to a more limited listed-species only permitting approach under the state and federal ESAs. Renamed the California WaterFix, the project includes a change in the point of water diversion to the north Delta, the tunnels, and habitat restoration to mitigate the adverse impacts from facility construction and operation. The new approach, however, excludes some of the conservation measures that the BDCP included. It also eliminates ESA "No Surprises" rule protection for the public water agencies against additional loss of water attendant to conservation obligations for new listed species and certain changed or unforeseen circumstances. The tunnel component of the project alone will cost an estimated 15 billion dollars, all to be paid for by the water users, whether or not they receive any additional water.

The shifted permitting approach failed to moderate northern California political opposition to the project. The State Water Resources Control Board has begun its review of the project under state law. Over 100 parties have intervened in the proceeding. Whatever decision ultimately emerges, some knowledgeable observers expect that the project may not

survive into 2017 due to constraints that federal and state regulatory agencies could impose. If it does survive, some predict at least a decade or more of litigation. By comparison, some of the same opponents of the project have engaged in 20 years of litigation challenging a 1995 amendment to the SWP water delivery contracts.

In 2009, the legislature enacted the Delta Reform Act to alter the governance and management of the Delta to achieve two statutory "coequal goals": providing a more reliable California water supply and protecting, restoring, and enhancing the Delta ecosystem. Cal. Water Code, § 85,000 *et seq*. Hailed at the time as a historic California water politics breakthrough, the Delta Reform Act has spawned another round of conflict. The legislation created a new entity, the Delta Stewardship Council, and directed the Council to prepare a Delta Plan (Plan) to achieve the coequal goals and other requirements. Certain local and state actions are required to be consistent with the Delta Plan, and the Council has the authority to adjudicate consistency disputes.

The Delta Reform Act political honeymoon did not last long. As soon as the Council adopted the Plan, all sides in the war challenged the Plan's compliance with the Delta Reform Act. In the summer of 2016, a state trial court rejected most of the challenges to the Delta Plan but invalidated the Delta Plan for failing to include "quantified or otherwise measurable targets" to achieve certain Delta Reform Act objectives including reduced reliance on water delivered from the Delta, reduced impacts of invasive species, restoration of more natural flows, and increased water supply reliability. *See Delta Stewardship Council Cases*, Judicial Council Coordination Proceeding No. 4758 (Sac. Sup. Ct. May 18, 2016) (Ruling on Submitted Matter). All of these issues are at the core of the conflict over the state's water supply system. The decision has been appealed to the California Court of Appeal. Whatever the ultimate resolution of the Delta Plan litigation, more conflict seems certain.

## *Conclusion*

To paraphrase H.L. Mencken, any proffered solution to California's water supply challenge that is simple or easy will also be wrong. There is no cheap water left. Southern California leads the state in water conservation. The southern California population uses the same amount of water as it did three decades ago, despite an increase in the population by several million people since then. California requires newly constructed homes and businesses to include water conservation features. Water agencies in southern California provide material financial incentives to eliminate lawns in existing homes and to convert to very low-flow toilets. Many urban water agencies impose tiered water pricing to encourage conservation and discourage profligate use, but a California appellate court recently rejected a tiered pricing scheme as a violation of one of the several voter-approved tax limitation provisions of the state constitution, thus potentially undercutting a key strategy to reduce urban water use. *Capistrano Taxpayers Assn. v. City of San Juan Capistrano*, 186 Cal. Rptr. 3d 362 (Ct. App. 2015), *aff'd*, 2015 Cal. LEXIS 5268 (Cal. July 22, 2015).

Orange County treats, stores, and reuses sewage effluent for human consumption. San Diego supplemented its import-dependent supply by entering into the largest agricultural-to-urban water transfer in the nation. Environmental groups and Imperial County farmers challenged this deal for over a decade. After 15 years of regulatory review and intense environmental group opposition, San Diego opened the first commercial desalination plant in the state in three decades.

Desalination exemplifies the state's water supply challenge. Environmental groups oppose this plant and other proposed plants because of impacts on marine organisms, high energy use, and growth impacts. Subsurface intakes can reduce impacts on marine organisms, but they increase construction and energy costs. While desalination can supplement local supplies in a few coastal communities, it is "unlikely to alter the water budget in California due to its high cost, energy demands and other factors." Stanford Woods Institute for the Environment Report, *Desalination and California's Water Future* (May 26, 2016), *available at* woods.stanford.edu/news-events/news/report-desalination-and-california%E2%80%99s-water-future. Even if all of the proposed plants overcome daunting political and regulatory hurdles, the plants will address a small fraction of statewide water needs. With existing technology, water desalination costs several times that of the cost of imported water, and San Diego has significantly increased the water's price in part because of the cost of desalination.

Other water districts have raised water rates in response to increased water conservation because reduced water sales also reduce revenue for fixed infrastructure costs. Increased water costs further exacerbate the substantial rich-poor divide in California. Adjusted for the cost of living, California has the largest percentage of its population living below the poverty line of any state in the nation.

Southern California captures and stores the flood flows on the San Gabriel and the Santa Ana Rivers. But the Fish and Wildlife Service recently designated critical habitat on both rivers, raising the specter of challenges to these important alternative southern California water supplies. The institutional mechanisms are in place for additional groundwater storage; the problem is that there is not any readily available additional water to store.

In response to market forces and increased water costs, Central Valley farmers have increasingly shifted away from commodity and field crops to higher value orchard crops. Farmers have also invested huge sums in drip irrigation, microsprinklers, and other sophisticated water conservation systems. As long advocated by the environmental community, to minimize reliance on surface reservoirs, urban and agricultural users developed large groundwater banking projects in the San Joaquin Valley. The water banks capture and store water underground in wet years for use in dry years. But these banking projects still rely on the ability to deliver water in wet years from north to south. The largest banking project is the subject of two decades of litigation from environmental groups.

California faces enormous water supply challenges, especially in light of the probability of extended dry periods associated with climate change. In the absence of a solution, the future will likely include a continuing decline in the ecological conditions in the Delta, increasing restrictions on water deliveries for consumptive uses, a material increase in the cost of water, and the risk of a catastrophic failure of the water supply system as a result of an earthquake or sea level rise.