

**DIVIDING THE WATERS:
THE CALIFORNIA EXPERIENCE**

**Brian E. Gray
Professor of Law
University of California
Hastings College of the Law**

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My favorite descriptions of California's water resources system are by two reporters—William Kahrl of the *Sacramento Bee* and Peter Passell of the *Wall Street Journal*. In his definitive study of Los Angeles' development of the waters of the Owens River, *Water and Power*, Kahrl declared that the “history of California in the twentieth century is the story of a state inventing itself with water.” Passell—in a column written just before the collapse of the Soviet Union entitled *Greening California*—was even more descriptive: “California's water system,” he opined, “might have been invented by a Soviet bureaucrat on an LSD trip.”

These descriptions are apt, because the hydrology and engineering of California's water supplies *are* extraordinary. The great projects—Owens Valley, Hetch Hetchy, Boulder Canyon, the Central Valley Project, and the State Water Project—make it possible today for farms in Kern County to irrigate their crops with water from the Pit River in Modoc County, for businesses in the Silicon Valley to produce computer chips using the runoff from Mount Lyell in the Yosemite back country, for Budweiser to brew beer in the San Fernando Valley with groundwater from the Eastern Sierra Nevada, and for the residents of San Diego to drink water that originated as snowfall outside of Pinedale, Wyoming.

Yet, these projects also have caused significant degradation (and in some cases, outright destruction) of California's natural resources: The forests and meadows of Hetch Hetchy Valley rest beneath 300 feet of water. Owens Lake (at most times) is an alkaline flat. The ecosystem of Mono Lake, its sister to the north, declined for fifty years but has now escaped a similar fate. Tulare Lake—once the largest in California—is now farmland. The Colorado River ends in a puddle in the Mexicali Desert, just as the San Joaquin goes dry at Gravelly Ford before the river is recharged by the combined contributions of downstream tributaries and return flow from irrigated agriculture. And these aren't even California's most pressing environmental problems.

As Judge Esgro recently observed, the fish and wildlife resources of the Sacramento-San Joaquin Delta

reflect significant declines from historic levels. Before European settlement, the Sacramento River had roughly 1.6 to 2 million acres of riparian habitat. Due to conversion of urban, agricultural and other uses, today only four to five percent of riparian habitat remains. Additionally, due to prolonged drought, diversions of freshwater, and dramatic increases of introduced species, several native fish species are in significant decline. Species listed or proposed for listing under the federal Endangered Species Act . . . include winter-, spring-fall-, and late fall-run Chinook salmon, steelhead, delta smelt, and splittail.

She added that the Bay-Delta ecosystem also “has experienced drastic declines in water quality” caused both by the discharge of pollutants and by salinity intrusion

from San Francisco Bay during periods of low outflow from the Sacramento, Mokelumne, and San Joaquin river systems.

On top of these problems, California chronically struggles to overcome a variety of disparities between developed water supplies and demand. One such disparity is geographic—about 75 percent of the state’s precipitation falls north of where we are now dining, while 75 percent of the demand for water is located to the south. This regional imbalance means that North Coast, Sacramento Valley, and Sierra Nevada counties are consistent exporters of water, while the Bay Area, the San Joaquin Valley, Tulare Basin, and Southern California have become their permanent dependents. During relatively wet cycles, the state’s dams, aqueducts, managed groundwater supplies, and imported water from the Colorado River historically have been adequate to store and move sufficient water to avoid regional shortages. During periods of drought, however, regional shortages become acute and costly—fields are fallowed, farm workers are laid off, rural economies suffer, groundwater is mined, fisheries are stressed, and water is rationed in the cities and suburbs.

For most of the Twentieth Century—the era that UCLA historian Norris Hundley, Jr. has named “the hydraulic society”—California’s great water projects kept pace with its rapidly growing population so that long-term water shortages

were avoided. In the last 20 years, however, this rough equation between supply and demand has changed dramatically for two main reasons:

First, the era of significant water development is over, because the economic, environmental, and political costs of new dams are too high. Indeed, in its recent draft of the 2003 update to the California Water Plan, the Department of Water Resources declared that it is no longer even scouting potential dam sites. The dearth of new water supplies is compounded by a variety of legal constraints on some of the state's most important existing sources—water supplies on which we have drawn heavily in times of drought. The groundwater reserves of the Sacramento Valley, for example, are less likely to be available for use in other parts of the state, because most of the valley counties have enacted local ordinances that restrict groundwater exports. This “Balkanization” of groundwater is something of an anomaly in a state that is otherwise almost wholly dependent on interregional transfers of its water resources. In addition, as a result of the agreement reached last month, over the next decade, Southern California water users will be weaned of their long-standing reliance on Colorado River water in excess of the state's annual 4.4 million acre foot share under the Boulder Canyon Project Act.

The end of the hydraulic society does not mean, however, that California's water supplies are stagnant. The absence of new dams in the Sierra Nevada and the North Coast—and the impending reduction of Colorado River supplies—have been offset to some extent by the construction of off-stream storage, conjunctive use projects, reclamation, water conservation and transfers, and soon perhaps more extensive use of desalinated ocean water.

The second important cause of California's water shortage problems has been the enactment and implementation of laws such as the Clean Water Act, California's Porter-Cologne Act, the Endangered Species Act, and the Central Valley Project Improvement Act, which have required state and federal water managers to release more water from dams—or simply to bypass flows during certain times of the year—for the benefit of fish, to improve water quality, and to provide sufficient outflow to keep the saltwater from San Francisco Bay from intruding too far into the Sacramento-San Joaquin Delta estuary. According to the Department of Water Resources, about 46 percent of the state's developed water supplies are now allocated to these types of environmental uses.

The concomitant reallocation of water from consumptive users as needed to fulfill these environmental commitments has created for some users a “permanent regulatory drought.” These persistent water shortages have been felt most acutely on the west side of the San Joaquin Valley. Until 1992, farmers in the San Luis

Unit of the Central Valley Project received their full contract entitlements in all but one of the preceding 30 years. That year was 1977, which was the single worst drought year in California's recorded history. Since 1993, the San Luis contractors have received an average of less than 70 percent of their contract entitlements.

Why this change in fortune? 1993 was the year that the biological opinions for the Sacramento River Winter-Run Chinook Salmon and the Delta Smelt were published. These documents placed a variety of constraints on the operation of the Central Valley Project and the State Water Project to ensure the survival of these two threatened species. It also was the first year that the Central Valley Project Improvement Act required the Bureau of Reclamation annually to dedicate 800,000 acre feet of project yield to fish and wildlife, habitat restoration, water quality, and other environmental uses.

So where does this leave us?

1. We have a developed water endowment that, because of legal, economic, environmental, and political constraints, is unlikely to be expanded significantly in the future.
2. We also have a massive water supply and distribution infrastructure that enables us to move water *from* almost every region in the state *to* almost any other region in California.

3. There will be increasing strain on California's existing water supplies as population continues to grow and the demographics of the state change; as the economy evolves; as water is reallocated from some long-standing consumptive users to competing environmental uses; and as cities, farmers, and businesses seek to regain reliability in their water service in the face of these pressures.

These three facts present us with the challenge—to use Bill Kahrl's description—of reinventing California's water resources system to ensure that our infrastructure, laws, contracts, regulatory commitments, and management policies keep pace with our changing world. I believe that three themes will dominate the Modern Era in California water policy.

First, the environment will continue to be a significant force. The mandates of the Endangered Species Act, the CVPIA, and state and federal water quality laws are likely to remain in tact for the foreseeable future. In part, this is because environmental protection is politically popular. Californians have come to appreciate the aesthetic, social, *and* economic benefits of clean air, clean water, open space, wild rivers, and healthy estuaries. The public also broadly supports efforts to repair and to restore fish and wildlife populations and their habitats. To the extent the accomplishment of these goals will require additional water, or

greater protection of the sources of our water supply, the majority of Californians are likely to be supportive.

Second, there will be inexorable pressure to reallocate developed water supplies from the agricultural sector to cities, suburbs, and businesses. This pressure will come largely through market forces. Demand for water for irrigated agriculture has declined slightly since 1980, and the Department of Water Resources projects that it will remain essentially stable throughout the next 30-year planning cycle. This is the result of improvements in irrigation efficiency, conversion of about 10 percent of agricultural lands to other uses, and a dramatic increase in crop yields and agricultural productivity. In contrast, California's population has grown from 30 million in 1992 to 36 million in 2002 and is projected to increase by another 600,000 residents each year to a whopping 53 million in 2030. The Department of Water Resources estimates that 2 million to 3 million acre feet per year will be needed to supply the state's new population. When environmental demands and groundwater recharge are added to the calculus, the Department projects that new demands will exceed developed supplies by 3 million to 5 million acre feet annually.

In a world with severe limits on the development of new sources, these new demands will be served by the reallocation of our existing water supplies from lower to higher valued uses. Although both the efficiency and the economic value

of agricultural water use have increased by more than 20 percent over the past three decades, there remain areas with great conservation potential. Where water providers find themselves with temporary or long-term surpluses (Yuba County Water Agency); where water management practices are avoidably wasteful (Imperial Irrigation District); where water is used to grow low-valued crops (cotton, alfalfa, and pasture); or where there is reason to retire some agricultural lands because of poor soil conditions and drainage problems (Westlands)—there is the opportunity to make due with less water and to sell the remainder to buyers with the economic ability and willingness to pay both for the water and for the conservation measures needed to generate it. Although I agree with Professor Joseph Sax that large-scale water transfers more closely resemble complex international diplomatic negotiations than they do simple market exchanges, I believe that the Metropolitan Water District-Imperial Irrigation District long-term transfer of conserved water (which was consummated in 1988)—as well as the recently announced transfer of Colorado River water from IID to the San Diego County Water Agency—serve as models for future reallocations of existing developed water supplies to meet the projected growth in urban and suburban demand.

The third theme that will dominate California water law and policy—a theme that is closely tied to water transfers—is the imperative to improve both the

efficiency of water use and the efficiency of water allocation. California has one of the most forceful and interventionist definitions of reasonable use in the western United States. As our state supreme court declared in 1967 at the dawn of the modern era in California water policy, the determination whether a particular use of water complies with the constitutional mandate of reasonableness cannot be determined in isolation, simply by reference to the alleged wasteful or unreasonable practices of the water user in question. In the Court's words, "such an inquiry cannot be resolved *in vacuo* isolated from state-wide considerations of transcendent importance. Paramount among these we see the ever increasing need for the conservation of water in this state, an inescapable reality of life quite apart from its express recognition in [the constitution]." The Court also held that, because all water rights must be exercised in compliance with the reasonable use mandate, a reduction or divestment of the water right based on a finding of unreasonable use does not violate the property rights of the effected water user.

Although the reasonable use doctrine has been asserted sparingly, it has nonetheless applied pressure on water right holders to ensure that their water use practices are at least reasonably efficient in light of competing demands for, and potential alternative uses of, the resource. The first Imperial Irrigation District transfer of conserved water—to the Metropolitan Water District—was induced by the State Water Resources Control Board's and the California Court of Appeal's

conclusion that IID was engaged in waste and unreasonable use in violation of the California Constitution. And a principal incentive for the second IID transfer—to San Diego—was Secretary Norton’s decision to enforce the beneficial use standard of federal reclamation law against Imperial based on the district’s continuing wasteful irrigation, water storage, and delivery practices.

Most of the work required to ensure the reliability of future water supply, to promote reasonably efficient use and allocation, to encourage water transfers and conjunctive management of ground and surface supplies, and to protect the environment in the process will be undertaken by the legislative and executive branches of the state, federal, and local governments. These interagency, interdisciplinary efforts range from local water conservation planning, to regional water quality regulation, to interregional water banking and water transfers, to the higher profile struggles to accommodate water supply needs with Endangered Species requirements in the Trinity and Klamath river basins, to resolution of the Colorado River controversy, and of course the never-ending Bay-Delta, CalFed process.

But there also is an essential role for the courts to play—for they (you) are the ultimate guardians of the rights secured by the common law, statutes, the California Constitution, and in some cases the Fifth and Fourteenth amendments to the United States Constitution. Throughout our state’s history, the California

Supreme Court has guided the development, the allocation, and the reallocation of our water resources as required by changes in the state's economy, demographics, resource base, natural environment, and social values. Thus:

- In *Irwin v. Phillips*, the Supreme Court invented the law of prior appropriation (or, more accurately, borrowed it from the gold miners) to free the miners from the strictures of the riparian system and thereby to foster the continued growth of California's most important economic activity. This new form of property in water, of course, quickly came to dominate the law of the American West.
- Three decades later, in *Lux v. Haggin*, the Court resolved the great conflict between the riparian and appropriation systems by recognizing both. This decision protected farmers up and down the Central Valley, while also ensuring that water remained available to lands that could be put to productive uses even though they were not adjacent to a usable source of water.
- In a series of opinions in the late 19th and early 20th centuries, the Supreme Court added a third cornerstone to California's water resources law, declaring that the doctrine of reasonable use—previously a hallmark of the riparian system—was fully applicable to disputes between appropriators. The most important of these cases,

Town of Antioch v. Williams Irrigation District, declined to enforce the city's senior appropriative rights against upstream irrigators in the Sacramento Valley, because the location of its diversion facilities on the Carquinez Strait was so close to San Francisco Bay that excessive freshwater outflow was required to keep the ocean water from polluting Antioch's domestic water supplies. To stifle the growth of agriculture in the Sacramento Valley to fulfill the senior user's water right under these circumstances, the Court concluded, would be unreasonable. In the Court's words, "It would be hard to conceive of a greater waste for so small a benefit."

- Following the voters' decision in 1928 to enshrine the doctrine of reasonable use in the California Constitution, the Supreme Court proceeded to apply the law to disputes *between* riparians and appropriators. These decisions culminated with the Court's exegesis on the relationship between reasonable use and the property right in water to which I alluded earlier: Because all water rights must be exercised in accord with the constitutional mandate of reasonable use, an *unreasonable* use—as defined by reference to competing demands, alternative practices, and contemporary social considerations—is not simply illegal. An unreasonable use of water, *as presently defined*, in

not a protected property right. This definition of the property right in water may have startling implications for claims that the reallocation of water from consumptive to *in situ* uses as required by the modern environmental laws are takings of property.

- By the middle of the 20th Century, the California Supreme Court focused its attention on groundwater—which up to that point had developed roughly parallel to the law of surface water rights. In two cases from Southern California— *Pasadena v. Alhambra* in 1949 and *Los Angeles v. San Fernando* in 1975—the Court significantly embellished the common law of groundwater rights. Its recognition of the concept of mutual prescription in *Pasadena*, and its declaration of Los Angeles’ supreme local groundwater rights both as successor to the Pueblo de los Angeles and as importer of water from the Owens Valley, have profoundly influenced the management and use of ground and surface water in Southern California.
- The Supreme Court’s most recent forays into the field of water law have been to articulate both the benefits and limits of judicial creativity. In its famous *Mono Lake* decision, the Court unanimously recognized the public trust as a potential limit on the exercise of water rights based in part on the justices’ conclusion that the resources

protected by the public trust—navigation, fisheries, water quality, public access to the state’s lakes and rivers, protection of aquatic ecosystems, recreation, and aesthetics—must be considered along side the competing consumptive uses of California’s water resources. By incorporating the public trust into the water rights system, the Court hoped to ensure that these *in situ*, public uses would be accorded a legal stature commensurate with the public and private water rights that historically have been the foundation of the state’s water development system.

- In contrast, in its most recent water rights case—the *Mojave* groundwater adjudication—the Supreme Court unanimously declined to apply a broad and flexible theory of equitable apportionment to allocate water in overdrafted groundwater basins. The Court spurned the invitation to overhaul the law of groundwater rights because equitable apportionment would be radically inconsistent with the long-standing hierarchy of property rights in groundwater—a hierarchy whose rigidities and inefficiencies are already tempered by the doctrine of reasonable use. The grafting of a new allocational principle onto the existing water rights structure is therefore

unnecessary to ensure the reasonable use and reasonably efficient allocation of water within the basin.

In future water cases, I expect the courts to play an equally constructive role in the management of California's water resources. A principal responsibility—which will be exercised only on rare occasions—will be for the courts to hold the parties feet to the fire: to apply the established law to present clearly the consequences of adhering to hard-line positions and refusing to negotiate in good faith to achieve fair and creative solutions to the problems and challenges that we face. For example:

- The Supreme Court's *Audubon* decision and Justice Blease's opinions for the Court of Appeal in the related *Cal Trout* litigation forced the resolution of the Mono Lake controversy and the historic restoration of Mono Lake.
- The Court of Appeal's earlier application of the reasonable use doctrine to water use within the Imperial Irrigation District—coupled with then-Ninth Circuit Judge Anthony Kennedy's opinion in *United States v. Alpine Land & Water Co.* incorporating principles of reasonable use into the reclamation law's beneficial use requirement—significantly strengthened Secretary Norton's hand in her Colorado River negotiations with California water users.

- The 1986 Court of Appeal decision on Bay-Delta water quality standards—so influential that it is now widely known simply as the “Racanelli Opinion” after its author, Justice John Racanelli—will continue to guide the Bay-Delta negotiations and the CalFed process for years to come.
- The courts’ enforcement of the directives of the Endangered Species Act has contributed significantly to a variety of other on-again, off-again efforts to restore damaged river systems while accommodating the rights and interests of long-standing consumptive users of water from rivers such as the Trinity, Klamath, and San Joaquin.
- A concomitant development has been the advent of several important takings, due process, and breach of contract challenges to the implementation of the Endangered Species Act. Federal judges on the Ninth Circuit and on the Court of Federal Claims in Washington are now grappling with difficult questions of law, including definition of the property right in water, the power of Congress to alter existing contract rights to water service, and the interplay between environmental standards and the constitutional mandate of reasonable use.

I would like to conclude with a personal story. Several years ago, my family and I were traveling in Switzerland. We had visited our friends in Zurich and Bern

and had spent a week in their family's country house in the Bernese Oberland. As we continued our travels, we crossed over the Rhine River on the Schaffhausen Bridge—a magnificent, stainless steel, cable-stayed structure. Our older son Sam said: “This country is so interesting, because it is old and new at the same time.” I thought that that was an astute observation (especially for a nine year old), and it has struck me over the years that it is also a marvelous description of California and the West. We live in a world that is simultaneously old and new. The public trust doctrine and the Endangered Species Act have been plunked down along side one hundred year old water rights, and we somehow have to figure out how they can, and should, coexist.

Integration and accommodation—of our old world of farms and cities and people who have invested and built their lives in reliance on private rights to California's developed water endowment, with our contemporary world of new suburbs, new technologies, new immigrants, and new environmental demands for those same developed water supplies—is the great challenge that we face. As Californians, we look to our future with an abiding optimism—confident both in our creativity and in our willingness to put in the years (sometimes decades) of hard work required to achieve constructive solutions to our problems. Perhaps this is because there is no real alternative. As Joan Didion once said: “California is a place in which a boom mentality and a sense of Chekhovian loss meet in uneasy

suspension; in which the mind is troubled by some buried but ineradicable suspicion that things had better work here, because here, beneath that immense bleached sky, is where we run out of continent.”