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NEWS

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In this issue

The History of Water Law in the United States

by Joseph L. Sax

From the very earliest origins of our legal system, going back more than two millenia to the principles of Roman law, water has always held a special place as a uniquely public resource. That does not mean it was unavailable for private use; on the contrary, precisely because water was so vital to human use, it was safeguarded so that individuals and entities of various types would be able to use it and enjoy it in ways that maximized benefits both to individuals and to the society.

Because water was not something that could be owned and held in private like a favorite garment or a precious jewel, but was rather something that had to be used in common with others' uses, and that was a mobile—one might even say continuous—resource, its private and community character have always been treated in a special way. Sometimes we talk about that specialness in physical terms: water is a moving resource; what you use today is used by your neighbor tomorrow or next week. Sometimes we talk about it in terms of its importance: water is literally the essential precondition of life. And sometimes we talk about in legal terms: water is incapable of ordinary ownership, is held in stewardship by the state, is the subject of a public trust.

What is perhaps most significant and least understood about water, however, is how the law has adapted its status, and the rights and responsibilities that go with it, to the changing needs of the community and its citizens as time and circumstances change.

For example, in Roman times 2000 years ago, the great jurist Justinian explained that the sea and the seashore were to be open to all. That is the principal source of one of the most important and most universally accepted of all legal precepts, the universal right of navigation on the open sea, and the right of all to the bounty of the sea as a source of food. So well rooted is this conception that most of us are hardly even conscious of the fact that Justinian's principle describes the rare idea of a community resource where private interests are able to benefit, but only subject to the broader needs of the community.

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California Colloquium on Water 2003-2004

This year's Colloquium brought record crowds to hear from experts in hydrology, history, engineering, public policy, water management, and environmental activism. Videotapes of lectures are available for loan at WRCA.

The series opened with a bang in September with Sylvia McLaughlin's "Four Decades of Saving the Bay." Since 1961, when she co-founded Save The Bay with Kay Kerr and Esther Gulick, McLaughlin has been a primary force in conserving Bay resources for people and wildlife, changing the course of history for San Francisco Bay.

October brought "A Paranoid's View of the Colorado River"—that "paranoid" being Thomas Levy, consultant and former General Manager & Chief Engineer of Coachella Valley Water District. Levy recounted the difficulties involved in appropriating water in the Colorado River, leading to the Quantification Settlement Agreement.

In November, Jack Schmidt, Associate Professor of Aquatic, Watershed & Earth Resources at Utah State University, spoke about "Channel Change of the Colorado River: A Mandate for Restoration?" Schmidt talked about flow and sediment transport, highlighting loss of sediment in the downstream reaches of the Colorado.

In December, Tom Box, Vice President of Geothermal Resource Management at Calpine Corporation, spoke about "The Geysers: The Nature, Development & Preservation of a Unique Resource." Calpine makes electricity from steam from The Geysers, the world's largest geothermal energy source, located in Lake and Sonoma Counties.

Ignacio Rodríguez-Iturbe began the spring semester with "Frontiers of Hydrologic Research in the 21st Century." Professor of Environmental Studies and Civil and Environmental Engineering at Princeton University, Rodríguez-Iturbe explained the fractal nature of river basins and the applications of this area of hydrology to river restoration.

In February, Gray Brechin explored "Rotten Foundations: The Reclamation Act & Urbanization of the West." A research fellow in the UC Berkeley Department of Geography, Brechin traced the roots of water development in California—largely influenced by a few wealthy families and their business endeavors.

April's focus was "Desalination Issues in the United States," presented by Kevin Price, Manager of the Water Treatment Engineering Research & Development Group at the U.S. Bureau of Reclamation. Price coauthored the *Desalination and Water Purification Technology Roadmap*, and spoke about both the history and the future of this technology.

David Kennedy, former director of the California Department of Water Resources, closed out the year. He discussed three themes that have dominated "The Evolution of California Water Policy": growing legal requirements to protect environmental resources, the end of the era of new large reservoirs and aqueducts, and increased cooperation among agencies that own and operate water facilities.

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Newsletter by Nancy Novitski except as noted otherwise.

Life's a Beach: Two Collections from Prof. Wiegel

Robert L. Wiegel is a professor emeritus of Civil & Environmental Engineering at UC Berkeley. Over the course of fifty-seven years, coastal engineering has taken Prof. Wiegel from his office (next door to WRCA) to every coastal state in the United States and to 55 other countries. From California to Cape Verde and Hawaii to Hong Kong, Prof. Wiegel has researched and evaluated coastlines.

Prof. Wiegel has been Chairman of the Coastal Engineering Research Council (American Society of Civil Engineers), President of the International Engineering Committee on Oceanic Resources (advisor to UNESCO), and editor of Shore & Beach (American Shore & Beach Preservation Association). He is a member of the National Academy of Engineering, an Honorary Member and Fellow of ASCE, and a Fellow of the American Association for the Advancement of Science. Prof. Wiegel has written and edited several books, and is the author of more than 155 papers and 100 technical reports.

Coastal Slides Catalog Goes Online

WRCA is pleased to announce a new searchable online catalog: the *Robert L. Wiegel Coastal Slides Catalog*. This recent addition to the WRCA Web site indexes Professor Emeritus Wiegel's collection of almost 12,000 slides and photographs, which he recently donated to WRCA.

The subjects of the slides and photos include beaches, waves, breakers, rip currents, river mouths, erosion, structures, and beach nourishment, as well as some dams and inland waters. In addition to his own images, Prof. Wiegel has collected some by Joe W. Johnson, William J. Herron, Jr., Orville T. Magoon, the U.S. Army Corps of Engineers, and others.

While the images themselves are not online, the catalog greatly facilitates access to this unique collection. Prof. Wiegel originally created a catalog of these slides and photos using the Papyrus Bibliography System. Former WRCA staff member Marisa Escobar imported these records into a more current format. Paul Atwood, WRCA's Technical Services Librarian, has worked with UC Berkeley Library's Digital Publishing Group to make this information available on the WRCA Web site. The online catalog is searchable by country, state, and county (U.S. locations), as well as by date and other keywords.

The catalog is now available online at *http://www.lib.berkeley.edu/WRCA/wiegel_intro.html*. The collection is housed at WRCA and is available for viewing. For more information, contact Paul Atwood at *patwood@library.berkeley.edu*.

Kanapali Beach, Maui, Hawaii. Slide #8812.

Beach Sand on Display

Have you ever picked up some sand at the beach, let it sift through your fingers, and wondered where it came from? Those tiny grains of sand are the result of complex processes and may be millions of years old. Prof. Wiegel has been collecting sand from beaches around the world since 1946.

A new exhibit at UC Berkeley pairs Prof. Wiegel's sand collection with materials from WRCA, including books, journals, and photos from the Wiegel Coastal Slides Collection.

If you are on the Berkeley campus in June or July, stop by the 3rd floor display cases in Moffitt Library (ground floor, across from the elevators) for a look at Prof. Wiegel's unique assortment of sands and a sampling of WRCA's wealth of information about coasts and beaches, from technical reports to travel guides.

The exhibit was prepared by Linda Vida, WRCA Director, and Professor Wiegel, with graphic design and installation by Heather Nicholls.

L.A. Aqueduct Photos to Go Online

It's no wonder that the photo albums of Joseph B. Lippincott are some of the most requested manuscript materials at WRCA. Along with Lippincott's papers, the approximately 4,000 photographs in the Lippincott Collection provide unique and dynamic documentation of the construction of various turn-of-the-century water projects in the West.

Until now, access to these historical photos has been limited to on-site visits to WRCA and professional scanning or print duplication for a fee. But it's about to get a lot easier. Thanks to a grant funded by the Library Services and Technology Act, you will soon be able to view about 680 of these images online, specifically photos from the two albums that document the building of the Los Angeles Aqueduct between the Owens Valley and Los Angeles.

The grant funds cover digitization of the photographs by UC Berkeley's Digital Imaging Lab and making the images available on the Web, linked from the existing Lippincott Collection finding aid through the Online Archive of California (OAC). WRCA is working with a freelance archivist, Dayna Holz, to create and implement the required metadata for this project. Technical Services Librarian Paul Atwood is the Project Manager for this grant. The digitized images are expected to be available online in August.

Lining the conduit in Mojave Division. Oct. 1908. Photo by J. B. Lippincott. Joseph B. Lippincott Collection; LIPP Box 78, no. 304.

Check here for updated information:
http://www.lib.berkeley.edu/WRCA/aqueduct.html

Upon completion, the Los Angeles Aqueduct Photograph Digitization Project will greatly improve access to these historical materials while helping to preserve them into perpetuity.

Travel Grant for Students

WRCA is pleased to offer a travel grant to students at the southern UC campuses interested in doing research at WRCA as part of water-related research projects.

Apply now before funds run out!

What is it?

- One-time award of up to $300.
- For travel to UC Berkeley. May cover air and/or ground transportation and one night's lodging.
- Original receipts must be submitted to WRCA for reimbursement within 10 days of travel.

Who is eligible?

- Graduate students & upper-division undergraduate students researching water-related topics.
- Must be currently registered at UC Irvine, UCLA, UC Riverside, UC San Diego, or UC Santa Barbara.

History of Water Law

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That powerful notion was transported into the English common law centuries later, and then was brought to this country, most prominently as the right of free navigation on all the navigable waters of the United States. One important source of American law was Lord Hale's Treatise on the law of sea, which said that "the common people of England have regularly a liberty of fishing in the sea, or creeks...as a public common...and may not, without injury to their right, be restrained of it [except where the King makes an exception, but in fact since Magna Carta this common right has been preserved for the benefit of the people]."

By the time the United States Supreme Court declared in 1913 that private ownership of the running water in a great navigable stream is "inconceivable", the special status of water was a familiar feature of American law. It was obvious even to the least tutored citizen that no one can charge a toll to us to go down the Mississippi or to navigate the Great Lakes. But this right of passage is one of our fundamental rights only because we are inheritors of the great notion of a public entitlement to water that came down to us from Justinian, through Lord Hale in England 500 years ago, and then through our own courts.

Perhaps the earliest court decision in this country was a New Jersey case, *Arnold v. Mundy*, which determined in 1821 that the right of oystering on the public seashore could not be privatized to the detriment of the public. Then, in 1892, the U.S. Supreme Court, in a very famous decision, held that the shoreline of Lake Michigan in Chicago could not be sold away from the public and turned over to a private railroad company. Nearly a century later, in 1971, the California Supreme Court held for the first time that the public trust in water extended to the protection of ecological values within the marine environment. Most recently, just within the last few years, the Hawaii Supreme Court determined that the use of waters—whatever their source within the Islands, including groundwater—could not be owned to the detriment of the traditional rights of its native people.

> In 1971, the California Supreme Court held for the first time that the public trust in water extended to the protection of ecological values within the marine environment.

What is most interesting and most important about any examination of the history of water is how our law has unfailingly shown itself adaptable to new and changing needs of the community, to changing technologies, and to the evolving economy. As each generation's needs changed, those changes were acknowledged and incorporated into our water law, and everyone had to adapt in turn to accommodate that evolutionary legal process. While it seems to be the view among some that such adaptation is something new and unprecedented, and has come about only in the modern era of environmental protection, quite the opposite is the case. The mutual evolution of public and private rights and responsibilities in water is as old as the nation, indeed as old as the legal system itself.

> The mutual evolution of public and private rights and responsibilities in water is as old as the nation, indeed as old as the legal system itself.

For example, in the Colonial and post-Colonial era, the common law doctrine throughout the country was natural flow, that is, the right of each riparian owner to have the water flow down to him unimpaired in quantity and quality. It was only when industrialization began in northern New England, and mill dams began to be built as the primary source of power for that industrial revolution, that the reasonable use doctrine made its appearance, and for many years the courts and legislatures struggled to work out the new accommodation that was needed if America was to fulfill its economic destiny.

As settlement moved westward, and the great white pine forests of the Upper Great Lakes began to be cut to build the new cities of the Midwest, a new problem arose. Except in winter time, when logs could be skidded across the ice on sleds, the only way to move the lumber to market was to float them down tributary streams into Lake Michigan. But under the common law as we inherited it from England, the public had the right to use rivers only for navigation, and historically navigation was understood to

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History of Water Law

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mean movement on ships. Beyond that, navigable water under English common law applied only to tidal waters (not surprisingly, since all or virtually all the waters navigable in fact in England were affected by the tides). That of course was not true of the Great Lakes, which are freshwater seas. Moreover, the logs coming down their tributary streams were not ships by any definition known to the existing law.

Yet without hesitation, the U.S. Supreme Court expanded the understanding of navigation to meet the new technology and the needs of the times, and again required riparian landowners to accommodate, just as had been done with the mill dams of the previous century. The leading case was *The Genessee Chief*, 53 US 443, decided in 1851.

As pioneers moved across the plains and onto the east slope of the Rocky Mountains, as well as into the foothills of the Sierra in California, yet a new economy burst forth. Precious metal mining was creating wealth of a sort never before seen, but again water was at the center of a legal conundrum. Like the rest of the country (except for Louisiana), the Colorado Territory and the new state of Colorado adopted the common law of England, but the common law of water was the law of riparian rights. Indeed, riparian rights were pretty much the only water rights known to those who settled these areas, and it is quite clear from a study of the territorial statutes of 1861 and 1862 that legislators enacted the only law they knew, the law of riparian rights.

Of course, riparianism simply didn't work in that arid mining community. The mines were often far from the streams, and water had to be carried to the source so the ore could be separated. Even more importantly, the miners and early ranchers were not landowners—they were permittees on federal land—so they were incapable of holding riparian rights. When the lands on the rivers were finally sold or given to settlers (usually a good many years later), they claimed an entitlement to the water for exclusive use on their riparian tracts, which was exactly what the common law required.

This conflict finally reached the Colorado Supreme Court in 1882 in a very famous western case called *Coffin v. Left Hand Ditch Company*. The case is famous because it set the standard for virtually all western water law, asserting that riparian rights did not exist, and never had existed, in Colorado, and that the law of prior appropriation was the law in the arid region because no other rule would work; what the court called the law of "imperative necessity" must prevail.

A similar process explains the evolution of groundwater law. It used to be that a rule called absolute ownership governed groundwater. Even after all the western states had adopted permitting systems to manage the use of their surface streams, it was still considered acceptable for anyone who could drill a well to do so, and take as much water as they could get, without regard to the impact on others. The origin of this anarchic rule was the language of an 1843 English case called *Acton v. Blundell*, which effectively said that the movement of groundwater is so unknown and unknowable that it is incapable of being managed.

An 1843 English case called *Acton v. Blundell* effectively said that the movement of groundwater is so unknown and unknowable that it is incapable of being managed. Of course, that is no longer the case.

Of course, that is no longer the case. We know quite well the behavior of groundwater. It is perfectly capable of being administered effectively, and it is effectively managed in most states. That advance in knowledge, along with the development of the high-powered electric pump, which permitted vastly increased groundwater pumping to occur (to the detriment of many smaller users who relied on relatively shallow wells) spelled the end of the absolute ownership theory and of the common law of groundwater, and the rise of rules like that of correlative rights, which requires reasonable sharing among groundwater pumpers. In a number of states, groundwater and surface water, once legally separate, are now integrally managed in recognition of hydrologic realities. In this case, changes in knowledge and technology have spawned appropriate legal adaptations.

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Book Review

San Francisco Bay: Portrait of an Estuary
by John Hart, photographs by David Sanger.
Berkeley: University of California Press, 2003.
194 pages. WRCA G201 P3-1.

For living in a region known as the "Bay Area," locals are remarkably apt to forget the vast namesake waters that define these communities. Writer John Hart and photographer David Sanger offer a cure for this ignorance in their recent book *San Francisco Bay: Portrait of an Estuary*.

Through well-crafted prose, Hart easily navigates the complex and often extremely contentious waters of water politics. With sponsors like the Bay Institute and the Audubon Society, Hart does give special attention to environmental concerns and restoration projects, but even more striking is his even-handedness in covering different industries.

Starting with the days when abundant marine life attracted native Californians to marshy Bay shores, Hart tracks the changes to San Francisco Bay, from fishing to housing developments, from water diversions to pollution. He charges that today's San Francisco Estuary—the whole system of the Bay and the delta formed by the Sacramento and San Joaquin Rivers—is a shadow of its former self, and he details the demands that people continue to make of it. But Hart also explores the efforts of San Francisco Bay Area residents to give back to the Estuary.

Sanger's photographs illustrate the many and varied pieces of this story, from a trip up the San Joaquin on an ammonia tanker to endangered least terns nesting on a defunct navy runway in Alameda. Throughout, Hart and Sanger also introduce the reader to the people who make the Bay what it is, whether they depend on it for their livelihood, make restoring it their life's work, or simply enjoy the beauty or pleasure it adds to their lives.

More than anything, *San Francisco Bay* aims to awaken readers—locals and visitors alike—to a Bay they never really knew before.

More than anything, *San Francisco Bay* aims to awaken readers to a Bay they never really knew before.

David Sanger's stunning photographs achieve this by juxtaposing familiar sights with new discoveries in a way that invites the reader to explore the unfamiliar nearby. Hart gives context to many of these contemporary realities. As well as inspiration, readers will find in the appendices specific suggestions for trips throughout the Estuary, selected readings, and organizations to contact for more information. (Add WRCA to that list!)

This is one coffee table book that you'll never want to take off your coffee table—except to return it to WRCA, of course.

History of Water Law

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It is interesting to note that much of the adaptive revision of water law has been in support of community values that were economy–driven, and that without doubt the greatest reinterpretations and modifications of traditional property rights were effected to increase economic productivity, not, as is sometimes thought, simply to advance environmental interests in recent decades. Water law has been in a continual state of change to adapt to contemporary societal needs, whether to advance economic productivity, to meet the challenge of new knowledge, or to protect public interests in navigation, fisheries, recreation, or environmental protection. The watchwords have been change, accommodation, adaptation, and balancing public and private rights in the interest of the larger social agenda.

Joseph L. Sax is the James H. House & Hiram H. Hurd Professor of Law, Emeritus, at Boalt Hall School of Law, UC Berkeley. A version of this paper was presented as the Order of the Coif Distinguished Lecture at West Virginia University on April 2, 2004.

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Baylands Ecosystem Habitat Goals: A Report of Habitat Recommendations. *San Francisco Bay Area Wetlands Ecosystem Goals Project. 1999.*

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- Research and Educational Institutions.
- Selected Hospital Waste Streams.

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Delivering Timely Water Quality Information to Your Community: The Jefferson Parish Louisiana Project. *U.S. EPA Office of Research and Development. 2001.*

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Small Hydroelectric Systems: A Guide to Development in California. *California Energy Commission. 1981.*

Floods of December 1982 to May 1983 in the Central and Southern Mississippi River and the Gulf of Mexico Basins. *U.S. Department of the Interior. 1991.*

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- Water Quality in the White River Basin: Indiana, 1992-96. *USGS Circular 1150. 1998.*

- Water Quality in the Georgia-Florida Coastal Plain: Georgia and Florida, 1992-96. *USGS Circular 1151. 1998.*

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- Water Quality in the Apalachicola-Chattahoochee-Flint River Basin: Georgia, Alabama, and Florida, 1992-95. *USGS Circular 1164. 1998.*

- Water Quality in the Hudson River Basin: New York and Adjacent States, 1992-95. *USGS Circular 1165. 1998.*

- Water Quality in the Potomac River Basin: Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia, 1992-96. *USGS Circular 1166. 1998.*

- Water Quality in the South Platte River Basin: Colorado, Nebraska, and Wyoming, 1992-95. *USGS Circular 1167. 1998.*

- Water Quality in the Lower Susquehanna River Basin: Pennsylvania and Maryland,, 1992-95. *USGS Circular 1168. 1998.*

- Water Quality in the Red River of the North Basin: Minnesota, North Dakota, and South Dakota, 1992-95. *USGS Circular 1169. 1998.*

- Water Quality in the Las Vegas Valley Area and the Carson and Truckee River Basins: Nevada and California, 1992-96. *USGS Circular 1170. 1998.*

- Water Quality in the Trinity River Basin: Texas, 1992-95. *USGS Circular 1171. 1998.*

- Water Quality in the Long Island-New Jersey Coastal Drainages: New Jersey and New York, 1996-98. *USGS Circular 1201. 2000.*

- Water Quality in the Erie-Lake Saint Clair Drainages: Michigan, Ohio, Indiana, New York, and Pennsylvania, 1996-98. *USGS Circular 1203. 2000.*

- Water Quality in the Kanawha-New River Basin: West Virginia, Virginia and North Carolina, 1996-98. *USGS Circular 1204. 2000.*

- Water Quality in the Santee River Basin and Coastal Drainages: North and South Carolina, 1995-98. *USGS Circular 1206. 2000.*

- Water Quality in the Lower Illinois River Basin: Illinois, 1995-98. *USGS Circular 1209. 2000.*

- Water Quality in the Upper Mississippi River Basin: Minnesota, Wisconsin, South Dakota, Iowa and North Dakota, 1995-1998. *USGS Circular 1211. 2000.*

- Water Quality in the Central Arizona Basins: Arizona, 1995-98. *USGS Circular 1213. 2000.*

- Water Quality in the Upper Colorado River Basin: Colorado, 1996-98. *USGS Circular 1214. 2000.*

- Water Quality in the Sacramento River Basin: California, 1994-98. *USGS Circular 1215. 2000.*

WRCA Wish List

-Cafeteria-style folding tables
-Digital camera

If you'd like to make our wishes come true, please contact Linda Vida at (510) 642-2666 for more details about how to give.