

**UCI Law**



The Center for Land, Environment, and Natural Resources  
and Brown Rudnick LLP present

# **Desalination: A Solution to Drought and Clean Water Demands?**

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**THIRD ANNUAL FALL SYMPOSIUM ON EMERGING ISSUES  
IN ENVIRONMENTAL LAW PRACTICE**

**Thursday, October 15, 2015  
8:00 AM – 5:00 PM  
EDU 1131  
UC Irvine School of Law**



## Third Annual Fall Symposium on Emerging Issues in Environmental Law Practice

### *Desalination: A Solution to Drought and Clean Water Demands?*

A recurring source of conflict in many parts of the world, access to clean water is increasingly becoming one of the key challenges humans face worldwide. Water shortages, population pressure, degrading water quality, and industrial and agricultural discharges are all contributing to this growing crisis.

Desalination has been seen as part of the solution to drinking water access in certain arid parts of the world, but until recently it has struggled to gain traction as a viable alternative in the United States. Some raise concerns regarding potential environmental effects and energy demands of desalination. Water production costs has limited widespread adoption in the United States, as quickly fluctuating water costs and equipment reliability have rendered facilities virtually obsolete before construction was finished.

However, improving technology and increasing demand for water has drawn renewed discussion of desalination as a viable potential source of affordable clean water. Locally, a new facility in Carlsbad, California will instantly double the amount of desalinated seawater produced in the United States when the plant is opened. This symposium will explore many of these issues with the guidance of practitioners and policymakers at the forefront of desalination.

#### **8:00 – 8:15 Welcome and Introduction**

- Alejandro Camacho, Professor of Law & Director, Center for Land, Environment, and Natural Resources, (CLEANR) University of California, Irvine School of Law
- Geoffrey Willis, Partner, Brown Rudnick LLP

#### **8:15 – 8:45 Keynote Address**

Frances Spivy-Weber, Vice-Chair, State Water Resources Control Board

On May 6, 2015, the State Water Resources Control Board approved an amendment to the state's Water Quality Control Plan for the Ocean Waters of California to address effects associated with the construction and operation of seawater desalination facilities.

#### **8:45 – 9:15 Setting and Current Issues**

Desalinated water is one of the tools currently available to increase availability of clean, drinkable water. How are changing economic, political, regulatory and social forces shaping the pace of expansion of desalinated water production and use?

Heather Cooley, Water Program Co-Director, Pacific Institute

**9:15 – 10:45 Existing and Operating Projects: Challenges, Benefits, and Results**

Spearheading the reemergence of desalination in the U.S., advocates of the Carlsbad Desalination Project, located in San Diego County, California, at the Encina Power Station, state that it will provide 50 million gallons of desalinated seawater per day. The privately finance project will produce enough drinking water to serve 300,000 San Diegans and provide the County with approximately 7 percent of its total water supply by 2020. Poseidon secured all necessary permits for the project and successfully secured financing for construction. Commercial operations are slated to begin before the end of 2016. However, the construction of the facility has not been without opposition and controversy. What were the significant challenges and how were they resolved?

- Andrew Kingman, Executive Vice President, Poseidon Water LLC
- Paul Beard, Counsel, Alston & Bird LLP
- Joe Geever, Environmental Consultant, Surfrider Foundation and Residents for Responsible Desalination

**10:45 – 11:00 Break****11:00 – 12:00 A Contrast Between U.S. and International Desalination Projects**

Desalination has been a staple of clean water supply for years in many countries. Internationally, how has the availability of resources, legal, and regulatory frameworks, marketplaces, and environmental concerns impacted the support and growth of desalination?

- Heather Cooley, Water Program Co-Director, Pacific Institute
- Dr. Jefferey Sellers, Associate Professor, University of Southern California

**12:00 – 1:00 Lunch****1:00 – 2:30 California Drought Crisis and Desalination**

California is entering the fourth year of a record-breaking drought creating an extremely parched landscape. Governor Jerry Brown declared a drought State of Emergency in January 2015 and imposed strict conservation measures statewide. Some experts predict that the drought is expected to cost California agriculture alone US \$2.7 billion in economic costs in 2015. With increasing water costs from existing sources and improving desalination technology and affordability, is California going to commit to increased reliance on water from desalination? Will environmentalists support or oppose these efforts?

- Bill Lockyer, Counsel, Brown Rudnick LLP (Former California Attorney General and State Treasurer of California)
- Robert Harding, System and Resource Analysis Unit Manager, Water Resource Management Group, Metropolitan Water District of Southern California
- Sean Bothwell, Policy Director, California Coastkeeper

## **2:30 – 4:00 Indirect Environmental Impacts**

New or emerging technology often has unexpected benefits and consequences. How has desalination benefitted or burdened our beaches, fisheries, and recreational areas? What are the environmental impacts of desalination and how can those environmental impacts be avoided or mitigated? How might the analysis of desalination's advantages and disadvantages differ for uses other than human consumption, such as in ecological restoration?

Moderated by Elizabeth Taylor, Staff Attorney, CLEANR

- Tim Bradley, Professor, School of Biological Sciences & Director, Salton Sea Initiative, University of California, Irvine
- Ray Hiemstra, Associate Director of Programs, Orange County Coastkeeper
- Dennis Lees, Marine Ecologist, Littoral Ecological & Environmental Services

## **4:00 Closing**

## CONFERENCE CO-CHAIRS

### ALEJANDRO CAMACHO

Professor of Law & Director, Center for Land, Environment, and Natural Resources (CLEANR), University of California, Irvine School of Law



Alejandro Camacho's expertise is in environmental law, land use regulation, and government organization, with a particular focus on adaptive management, collaborative governance, and climate change. His scholarship in environmental law explores how both the design and goals of the law and legal institutions must and can be reshaped to more effectively account for the dynamic character of natural systems. Professor Camacho's interdisciplinary research involves collaborations with experts in ecology, land use planning, political science, computer science, genetics, philosophy, and sociology. He is a co-investigator on National Science Foundation-funded research, working with The Nature Conservancy to develop and study a collaborative cyber-infrastructure for facilitating information sharing on and managing the ecological effects of climate change. Professor Camacho also serves as the inaugural Director of the UCI Law Center for Land, Environment, and Natural Resources, which seeks to promote public engagement and discussion through conferences, lectures, and stakeholder facilitation on a variety of regional and national environmental issues. He is a Scholar at the Center for Progressive Reform, a nonprofit think tank devoted to issues of environmental protection and safety; Affiliated Faculty with the Newkirk Center for Science and Society; and holds a courtesy appointment in Political Science at UCI's School of Social Sciences. He is the former chair of the Association of American Law Schools' Section on Natural Resources. Before joining UC Irvine, Professor Camacho was an Associate Professor at the Notre Dame Law School, a research fellow at the Georgetown University Law Center, and practiced environmental and land use law. Professor Camacho received a LL.M. from the Georgetown University Law Center (2005), a J.D. from Harvard Law School, *cum laude* (1998) and a B.A. in Political Science, *summa cum laude*, and a B.A. in Criminology, Law, and Society, *summa cum laude*, from the University of California, Irvine (1995).

### GEOFFREY WILLIS

Partner, Brown Rudnick LLP



Geoffrey Willis concentrates his practice on matters involving the California Environmental Quality Act; the National Environmental Policy Act; water rights and quality; the Endangered Species Act; wetlands regulation; the Clean Air Act; CERCLA investigations, remediation and litigation; the California Subdivision Map Act; and local zoning and land use requirements, environmental due diligence, and audits. Additionally, Geoffrey handles matters involving the use or reuse of real property—from the development of shopping centers, large conjunctive use projects, housing communities, golf courses, industrial parks and manufacturing complexes to regulatory compliance of ongoing businesses involving air, endangered species, water and wetlands permitting. He has also worked on a wide variety of major public infrastructure projects including airports, NFL and NBA stadiums, military base closure and re-use through the BRAC process, freeways and toll roads, power plants, major water delivery systems, major publicly owned treatment works, and other large municipal facilities. Geoffrey has represented his clients' interests before all of the counties in Southern California, many of the cities in California, the State Water Resources Control Board, the Regional Water Quality Control Boards, the Army Corps of Engineers, the United States Fish and Wildlife Service, the South Coast Air Quality Management District, the Federal Aviation Administration, the High Desert Air Pollution Control District, the California Department of Fish and Game, the California Coastal Commission, the California EPA, EPA Region IX, and a number of additional state and local governing bodies. Geoffrey received a J.D. from the University of California, Hastings and a B.A. from Pomona College.

## MODERATOR

### ELIZABETH TAYLOR

Staff Attorney, Center for Land, Environment, and Natural Resources (CLEANR), University of California, Irvine School of Law



Elizabeth Taylor serves as the staff attorney for the Center for Land, Environment, and Natural Resources. Before joining the Center, she worked as an environmental attorney representing California public entities and nonprofit organizations on a variety of environmental issues. She began her legal career as a fellow with the United States Marine Mammal Commission, has served as the chair of the City of Encinitas Environmental Commission for three years, and has taught an undergraduate course on environmental law and policy. She currently serves on the board of directors of the San Diego League of Conservation Voters and on the board of directors of San Diego Coastkeeper. Prior to law school, she worked as a marine biologist for the United States Fish and Wildlife Service and NGOs in the Caribbean, Hawaii, and Australia. She graduated from the University of California, San Diego with a B.S. in Ecology, Evolution and Behavior, and received her J.D. from Lewis & Clark Law School with a certificate in environmental and natural resources law.

## KEYNOTE SPEAKER

### FRANCES SPIVY-WEBER

Vice Chair, State Water Resources Control Board



Frances Spivy-Weber of Redondo Beach was first appointed to the State Water Resources Control Board in 2007, reappointed and elected Vice Chair of the Board in 2009, and reappointed by Governor Brown in 2013 to a four-year term. Before being appointed to the Board, she served as the executive director of the Mono Lake Committee since 1997. From 1983 to 1992, Ms. Weber served as the director of international programs for the National Audubon Society. She previously was a legislative assistant for the Animal Welfare Institute from 1978 to 1982. Ms. Spivy-Weber is currently serving as Chair of the Water Policy Center Advisory Council with the Public Policy Institute of California; Member, Advisory Board of Synergy; and Member, Advisory Committee on Recycled Water and Direct Augmentation of Surface Waters and Feasibility of Direct Potable Reuse. Ms. Spivy-Weber was a member of the Bay-Delta Public Advisory Committee and co-chair of its Water Use Efficiency Committee. She also served as co-chair of the Southern California Water Dialogue and convener of the California Urban Water Conservation Council. She has served on many boards, including the Water Education Foundation, California Council of Land Trusts, and Clean Water Action/Clean Water Fund.

## PANELISTS

### PAUL BEARD

Counsel, Alston & Bird LLP



Paul Beard brings 14 years of significant appellate litigation experience to his role as counsel, including in the U.S. Supreme Court. In 2013, he argued and won *Koontz v. St Johns River Water Management District*, a landmark Supreme Court case concerning a Florida agency's attempt to exact money from a developer as a condition of approving wetland permits. The decision establishes that monetary exactions imposed in the permit process are subject to heightened constitutional scrutiny. Mr. Beard's practice focuses on permitting issues arising under the Takings Clause, California Coastal Act, Endangered Species Act, Clean Water Act, and California Environmental Quality Act ("CEQA"), among others. He also counsels project proponents on their statutory and constitutional rights in the permit process and assists them in creating the best administrative record when litigation ensues. He represents a range of clients, including developers and industry associations, in state and federal courts across the country. Before joining the firm, Mr. Beard was a principal attorney at Pacific Legal Foundation, the nation's premier public interest organization committed to litigating pro bono for property rights. For years, he led PLF's Coastal Land Rights Project, overseeing litigation against environmental permit agencies, especially the California Coastal Commission.

### SEAN BOTHWELL

Policy Director, California Coastkeeper Alliance



Sean Bothwell is the California Coastkeeper's Policy Director, and works to implement statewide initiatives to enhance the quantity and quality of California's water. Mr. Bothwell was the lead environmental advocate on the State Water Board's desalination policy, a member of the State Water Board's Public Advisory Group for the Trash Policy, and is a strong advocate for direct potable reuse. Sean tracks and analyzes proposed bills during the state's legislative sessions, and is responsible for developing and implementing CCKA's sustainable water supply program. Prior to joining CCKA, Sean provided legal expertise to the San Francisco Bay Conservation and Development Commission on permit requirements and enforcement, the public trust doctrine, and other tools to protect the area's coast. While there, he co-authored "Climate Change and the Public Trust Doctrine: Using an Ancient Doctrine to Adapt to Rising Sea Levels in San Francisco Bay," since published in the *Golden Gate University Environmental Law Review*. Sean is a member of Restore Hetch Hetchy's Board of Directors, an organization committed to returning Hetch Hetchy Valley in Yosemite National Park to its natural state. His student note on wave energy and desalination was awarded top honors by Vermont Law School. Sean holds a B.A. in Criminal Justice and a J.D. from Vermont Law School.

### DR. TIM BRADLEY

Professor, School of Biological Sciences & Director, Salton Sea Initiative, University of California, Irvine



Tim Bradley is a Professor of Ecology & Evolutionary Biology in the School of Biological Sciences at the University of California, Irvine. His laboratory is engaged in studies of the physiology, ecology, cell biology, and pathology of insects. His research interests include environmental aspects of aquatic ecology. He is also the Director of the UC Irvine Salton Sea Initiative, which the Provost created to harness UC Irvine's research, teaching, and service resources to address sustainability challenges facing the Salton Sea region. The Salton Sea Initiative views addressing the challenges at Salton Sea as multi-faceted, long term, and critical to Southern California's future.

**HEATHER COOLEY**

Water Program Co-Director, Pacific Institute



Heather Cooley is Director of the Pacific Institute's Water Program. She conducts and oversees research on an array of water issues, such as the connections between water and energy, sustainable water use and management, and the hydrologic impacts of climate change. As a Pacific Institute staff member, Ms. Cooley has authored numerous scientific papers and co-authored five books, including *The World's Water*, *A 21st Century U.S. Water Policy*, and *The Water-Energy Nexus in the American West*. Ms. Cooley has received the U.S. Environmental Protection Agency's Award for Outstanding Achievement (for her work on agricultural water conservation and efficiency) and her work was recognized when the Pacific Institute received the first U.S. Water Prize in 2011. She has testified before the U.S. Congress on the impacts of climate change for agriculture and on innovative approaches to solving water problems in the Sacramento-San Joaquin Delta. Ms. Cooley holds a B.S. in Molecular Environmental Biology and an M.S. in Energy and Resources from the University of California, Berkeley. Prior to joining the Pacific Institute, she worked at Lawrence Berkeley Laboratory studying climate and land use change and carbon cycling. Ms. Cooley currently serves on the Board of the California Urban Water Conservation Council.

**JOE GEEVER**

Environmental Consultant, Surfrider Foundation and Residents for Responsible Desalination



Joe Geever was born in Los Angeles and spent his youth playing in the ocean in Santa Monica Bay. He went to work as a commercial fisherman and left the area before finishing high school. Joe's form of a mid-life crisis involved leaving the fishing industry and pursuing the formal education he dodged as a kid. To his friends' and his own surprise, that resulted in earning a B.S. in Economics and a J.D. from the University of Virginia. Joe's professional career has focused on coastal zone management and marine resources management. For the last 15 years, most of Joe's time has been spent on advocating integrated water management. Joe's passion is restoring our coast and ocean for our kids and their kids—the beauty and bounty that Joe enjoyed and younger generations struggle to even imagine.

**ROBERT HARDING**

System and Resource Analysis Unit Manager, Water Resource Management Group,  
The Metropolitan Water District of Southern California

Robert Harding is the Unit Manager of the System and Resource Analysis Units in the Water Resources Management Group at The Metropolitan Water District of Southern California. He is responsible for the development of long-term facilities and water resources plans, including Metropolitan's Integrated Water Resource Plan (IRP) and Integrated Area Study (IAS). Robert is also Metropolitan's Seawater Desalination Program Manager and the Treasurer for CalDesal. Robert has been at Metropolitan for more than 28 years. He worked in the Engineering Section for two years before transferring to Water Resources Management. Robert worked on developing water transfers and groundwater storage programs in California's Central Valley before becoming the System and Resource Analysis Unit Manager. Robert has a B.S. in Civil Engineering from Brigham Young University and an M.B.A. from Pepperdine University.

**RAY HIEMSTRA**

Associate Director of Programs, Orange County Coastkeeper



Ray Hiemstra has a B.A. in Geography (1998) and a certificate in Environmental Studies (2000) from California State University, Long Beach. Ray has run water quality research and advocacy projects throughout the Santa Ana Watershed. His current projects include our Marine Protected Area Watch and Ocean Desalination programs. Other issues he works on include: Smartscape, Coastal Access, The Santa Ana River, Copper Boat Paint, and Grant Writing. Ray is a member of a number of boards and committees, including the Port of Los Angeles Harbor Safety Committee and Newport Bay Watershed Management Committee. Ray is a lifetime resident of Orange County and is active in his community.

**ANDREW KINGMAN**

Executive Vice President, Poseidon Water LLC



Andrew Kingman has over 30 years of experience in the development, construction, and financing of major industrial and infrastructure capital projects including over 15 years of project development and project financing experience at Poseidon. He is currently responsible for providing executive oversight of the Huntington Beach project development efforts. As Poseidon's CFO, he was responsible for Poseidon's investor relations and financing, including the Carlsbad equity and debt financing, and he was a lead on the various project contract negotiations. Before joining Poseidon, he was a vice president of AT&T Capital Corporation and General Electric Capital Corporation project finance groups, and prior to that, he was a nuclear test and startup engineer for General Dynamics' submarine business. Mr. Kingman holds a B.S. in Mechanical Engineering from the University of New Hampshire and an M.B.A. from the University of Virginia's Darden School.

**DENNIS LEES**

Marine Ecologist, Littoral Ecological & Environmental Services



Dennis Lees has over 40 years of national and international experience in the study and evaluation of estuarine, nearshore, and intertidal benthic systems ranging from California and Alaska to Micronesia and the Arabian Gulf. He has participated in numerous major field, analytical, and reporting activities as a principal investigator or project manager. He has predicted or assessed impacts for a wide spectrum of industrial development activities on coastal marine habitats around the world. He has considerable experience in evaluation of impacts from anthropogenic activities, e.g., desalination and discharge of heated and hypersaline effluents; port- and airport-related construction; construction and operation of power, petrochemical, and wastewater treatment facilities; sediment contamination in ports or from wastewater treatment facilities; oil or ore spills and related cleanup and treatment activities; and oil-and-gas or mining exploration and development. In the process of working with such a varied range of projects and environmental systems, he has become conversant with the way in which a broad spectrum of physical, chemical, and biological phenomena interact with marine organisms. He has supervised and conducted major field studies involving intertidal and subtidal benthic sampling, underwater television, diving, submersible, and trawling activities. His strong grounding in the taxonomy of marine organisms of many regions has contributed substantially to the success of numerous baseline studies in southern California as well as several poorly known regions of the world. Many of these projects were located in remote or logistically difficult regions such as Alaska (Chukchi and Bering Seas, Cook Inlet, and Prince William Sound), Micronesia, or the Arabian Gulf. Much of the information obtained during these studies was analyzed and described for use in preparation of various types of environmental impact documents required by NEPA or environmental regulations of foreign countries. During analyses for these programs, Mr. Lees has acquired considerable skill in the statistical and multivariate analyses necessary to design benthic studies and describe and evaluate benthic communities and predict or assess the impacts of man's industrial development activities and natural catastrophic events.

**BILL LOCKYER**

Counsel, Brown Rudnick LLP (Former California Attorney General and State Treasurer of California)



Bill Lockyer is a member of Brown Rudnick's Government Law and Strategies team in the Orange County office. Bill is a widely admired California politician who never lost an election. He most recently served as the 32nd State Treasurer of California, elected in 2006 and re-elected in 2010 with more votes than any other candidate in the nation. He also has served as California Attorney General. Prior to that, he served over twenty-five years in the California State Legislature, more than half that time in the State Senate, where, for the last four years of his tenure, he was chosen by his peers to be President Pro Tempore, the most powerful position of the upper legislative house. Early in his legislative career, Bill wrote the first legislation to provide state funding for emergency oil spill decontamination. One of his proudest environmental accomplishments was his 1987 bill to create a Bay Trail, a 500 mile-long hiking and bicycle path that spanned between San Francisco and San Pablo Bays, harboring bay shore parks and protected natural habitats (in California Bill is known as the "Father of the Bay Trail"). Bill is considered to be one of the most effective Attorneys General in California history. In 2003, he was chosen as President of the National Association of Attorneys General. Over the course of his eight years as State Treasurer, Bill managed the State's multi-billion dollar Pooled Money Investment Account (PMIA) through the 2007-09 recession without losing a penny of principal; protected taxpayers from high-interest rates by reforming the way credit rating agencies grade bonds issued by states and local governments; led the successful effort to keep corruption out of public pension funds and ensure investment decisions serve workers and taxpayers first and foremost; sold more bonds than any Treasurer in California history to finance critical infrastructure projects; expanded access to health care for Californians who depend on rural clinics by increasing the availability of low-cost loans to build facilities and buy equipment; and helped families cope with rising college costs by expanding ScholarShare, California's "529" college savings program. As State Treasurer, Bill also sat on the governing boards of the nation's two largest public pension funds—the California Public Employees' Retirement System and the California State Teachers' Retirement System.

**DR. JEFFEREY SELLERS**

Associate Professor, Department of Political Science, University of Southern California



At the University of Southern California, Jefferey Sellers is an Associate Professor in the Department of Political Science and the Program in Environmental Studies at the Dornsife College of Letters, Arts and Sciences, with a courtesy appointment in the Sol Price School of Public Policy. He researches urban, environmental, and social policies and their politics around the world. His research agenda centers around comparative analysis of institutions and state society relations from the "bottom-up" perspective of cities and communities. Initially focused on Europe and North America, this agenda is now global in scope. One current project examines the varieties of multilevel local linkages between state and society across the developed and developing worlds, and their historical origins. Another has organized a global network of researchers into the largest international collaborative study of metropolitan politics and governance. A third project pioneers in the application of remote sensing to compare trajectories of urbanization in China, India, and other developing countries. He has authored or edited four books, and published in such journals as *Environment and Planning C*, the *European Journal of Political Research*, *Governance*, the *International Journal of Urban and Regional Research*, the *Journal of Urban Affairs*, *Landscape and Urban Planning*, the *Law and Society Review*, the *Urban Affairs Review*, the *Yale Law Journal*, and in numerous edited volumes. He is the co-founder and co-coordinator of the International Metropolitan Observatory Project, coordinates the Asia-Pacific Urban Environmental Governance study, and was a lead researcher in the First World Report on Decentralization and Local Democracy. He earned his J.D. from Yale Law School and his Ph.D. in Political Science from Yale University.