Agenda

Overview of Human Impacts on US Groundwater Supplies — *W. Bowman*
- US geology and hydrology
- US water supplies and current needs
- Climate change impacts
- Current trends and expected developments
- Legal approach to groundwater in the West (Non Riparian)
- Current threats to groundwater
- Possible solutions

California Ground Water Policy in Historical Perspective — *J. Loux*

Groundwater Demand Management — *I. Kisekka*
- Pumping restrictions
- Technologies for monitoring allocation

US Groundwater Regulatory Scheme — *C. Carson, S. O'Neill*
- Riparian rights, non-riparian rights, prior appropriation, hybrid
- Public trust doctrine
- Clean Water Act, "Waters of the United States"
- Relationship of groundwater and surface water: one system

Pricing Groundwater: A Strategy for Conservation — *R. A. Hrozencik*
- Cost of groundwater
- Value of groundwater
- Environmental economics of pricing public resources
- Results of placing a value on groundwater
- Changing public perceptions and starting a new conversation about resources

Non-Price Methods to Manage Groundwater — *K. Schoengold*

Avoiding and Solving Contamination Issues to Ensure Future Supply — *J. Izbicki*

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Techniques to Promote Groundwater Conservation
Live, Interactive Webinar - Monday, May 13, 2024

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Learning Objectives

You'll be able to:

Explore US water supplies and current needs.

Examine the US groundwater regulatory scheme.

Discuss legal approaches to groundwater rights in different states.

Consider the example of California groundwater policy, past and present.

Evaluate price and non-price methods to manage groundwater.

Avoid and solve groundwater contamination issues to ensure future supply.

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Techniques to Promote Groundwater Conservation

Live, Interactive Webinar - Monday, May 13, 2024

Explore human impact on groundwater supplies

Discuss the patchwork of US groundwater rights and regulations

Explore options for managing groundwater demand

Consider price and non-price methods to manage groundwater

Solve contamination issues to ensure future groundwater supplies

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Online - Monday, May 13, 2024

Log into Webinar
8:30 - 9:00 am CDT

Morning Session
9:00 am - 1:00 pm CDT

Break
1:00 - 1:30 pm CDT

Afternoon Session
1:30 - 4:30 pm CDT

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Faculty

Warigia M. Bowman teaches water law, energy regulation, natural resources and evidence at The University of Tulsa College of Law. Her work has been cited in the *New York Times*, and she is a sought after water expert who has been interviewed by PBS, CNN, and Democracy Now. She is the director of the Sustainable Energy and Natural Resources Law Program (SERL) at The University of Tulsa College of Law. An honors graduate of the University of Texas School of Law, Bowman clerked for Justice Jack Hightower of the Texas Supreme Court, and served as an honors trial attorney in the Environmental and Natural Resources Division of the U.S. Department of Justice under Attorney General Janet Reno. She was a Harry S. Truman Scholar at Columbia College, the Barbara Jordan Scholar at the LBJ School of Public Affairs, and the Oppenheimer Scholar at the Hauser Scholar for Nonprofit Organizations at the Kennedy School, where she earned her doctorate. Ms. Bowman has published widely on telecommunications and regulatory issues and has consulted for the Kenyan Government, USAID, the United Nations, and the U.S. State Department. Before joining The University of Tulsa, she taught at the American University in Cairo, Egypt, as well as at the University of Mississippi and the University of Arkansas. Ms. Bowman's work is multidisciplinary, and is informed by the fields of history, law, science and technology studies, as well as political science.

Jeff Loux splits his time between UC Davis Extension, where he is chair of the Science, Agriculture and Natural Resources Department, and serving as an adjunct associate professor in the Landscape Architecture/Environmental Design Program in Human Ecology. Dr. Loux's primary teaching and research interests are in Sustainable Urban Planning and Design, Water Resources Policy, and Community Engagement and Collaboration around environmental, water and land use issues. In Extension, Dr. Loux is responsible for $6 million of professional education and over 5,000 professional enrollments each year in a wide array of fields including land use planning, sustainable transportation, water resources, GIS, environmental laws and policy, sustainable design, and related topic areas.

Isaya Kisekka, Ph.D. is a professor of Hydrology and Agricultural Water Management in the department of Land, Air and Water Resources and the Department of Biological and Agricultural Engineering at the University of California Davis. Dr. Kisekka also serves as the director for the UC Davis Agricultural Water Center of Excellence, where he leads efforts on sustaining groundwater use and irrigated agriculture. The overall goal of his research is to enhance sustainable water management in agroecosystems. His research focuses on quantifying the influence of irrigation on crop production, water balance, water quality, and climate change adaptation. His research is conducted at a range of scales from groundwater basin, to farm, to field to smaller scales (e.g., greenhouse and soil columns). His research involves both experimental studies, and modeling. Dr. Kisekka received a BSc. degree in Agricultural Engineering from Makerere University in Uganda, and Masters and PhD degrees in Agricultural and Biological Engineering (specializing in Hydrologic Sciences) from the University of Florida. Prior to joining UC Davis, he served as an assistant professor of Water Management at Kansas State University where he worked on irrigation and groundwater sustainability issues in the Ogallala Aquifer region.

Christine Carson is a partner with Aleshire & Wynder in Los Angeles. She serves as general counsel and advises public agencies on a broad range of issues, including water law, civil litigation, labor and employment law, the Public Records Act, CEQA, the Clean Water Act, land use, contract formation and negotiation, drafting and amending ordinances, resolutions, and personnel rules, conducting wage and hour audits, and management trainings. Ms. Carson provides advice and legal support on water, wastewater and MS4 issues for most of the firm's clients, including water quality, infrastructure, and rate-setting. She has represented county and municipal water districts, irrigation districts, mutual water companies, investor-owned public utilities, State Water Project contractors, city water departments, and transportation entities. She has litigated and advocated water rights. In her litigation practice, Ms. Carson has successfully litigated many complex cases and obtained dismissals of numerous cases through motions. She also externed with Wm. Matthew Byrne, Jr., then Chief Judge of the U.S. District Court, Central District. Ms. Carson was a certified law clerk for the Riverside District Attorney's Office, handling jury trials and preliminary hearings.

Steven O'Neill is a partner with Aleshire & Wynder in the Westlake Village office, overseeing legal matters for a wide variety of public entities and private sector clients. Mr. O'Neill represents both public and private entities, emphasizing water law, environmental law, and municipal law. His practice area includes water rights (surface and groundwater) water quality, and water supply issues. He regularly advises clients on alternative water supply issues, including the development and sale of recycled water. Mr. O'Neill also provides legislative and policy support, drafting proposed statutes and regulations concerning a wide range of issues, from water quality issues to rate setting.

R. Aaron Hrozencik is a research agricultural economist in the Conservation and Environment Branch of the Resource and Rural Economics Division at the USDA. Mr. Hrozencik's research interests lie at the intersection of production and natural resource economics, specifically how firms and individuals utilize scarce resources or environmental goods as inputs to production. His past research employs empirical and simulation modeling to understand how the agricultural sector utilizes groundwater. Future research will continue to explore the nuanced relationship between agricultural production and water resources. Mr. Hrozencik's received a Ph.D. degree in agricultural and resource economics at Colorado State University and a B.A. degree in Economics and Philosophy from the University of North Carolina at Chapel Hill.

Karina Schoengold is the associate director of the Nebraska Water Center. Dr. Schoengold joined the Department of Agricultural Economics at the University of Nebraska-Lincoln in 2005. She has a Ph.D. degree from the University of California-Berkeley in Agricultural and Resource Economics (2005), and a B.S. degree from the University of Wisconsin-Madison in Economics and Mathematics (1998). Her research program relates to a range of agri-environmental policy issues, with a significant focus on water and soil management. Specifically, she is interested in how individuals make decision regarding the use of scarce and/or polluting inputs, and how policy design affects those decisions. Her research has been funded by a range of programs, including NSF, USDA-NIFA, USDA-ERS, USGS, and the Water for Food Daugherty Global Institute at the University of Nebraska.

John Izbicki has worked for the U.S. Geological Survey for more than 40 years in Maryland, Massachusetts, and California. Dr. Izbicki retired in 2021 but continues to work for the USGS as an annuitant. In 2000 while working for the USGS, he obtained his Ph.D. in Soil Physics from University of California, Riverside. As part of the California Water Science Center, his studies have focused on understanding the physical hydrology of coastal and desert aquifer systems primarily through the application of chemical and isotopic tracers. Recent work included studies of managed aquifer recharge, trace-element occurrence in desert aquifers, submarine groundwater discharge, and bacterial source identification in urban streams and near-shore ocean water. Dr. Izbicki has worked on natural hexavalent chromium occurrence in groundwater in the Mojave Desert for more than 25 years and has worked at the Hinkley site since 2015. He holds several patents for well-bore flow and sample collection equipment and associated techniques. Dr. Izbicki was awarded the California Groundwater Resources Association, Lifetime Achievement Award for exemplary contributions to the groundwater industry. He has worked internationally for the International Atomic Energy Agency, the Indian government, and the Chinese government.