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Juliet Christian-Smith & Peter H. Gleick, A Twenty-First Century U.S. Water Policy

BOOK NOTES

Juliet Christian-Smith & Peter H. Gleick, *A Twenty-First Century U.S. Water Policy*, Oxford University Press, New York (2012); 360 pp; \$27.95; ISBN 978-0-19-985944-3; hardcover.

The Pacific Institute (“Institute”), a respected non-profit research organization focused on natural resource policy, celebrated its twenty-fifth anniversary in 2012. Coinciding with that celebration, the Institute’s director, Peter Gleick, and senior research associate, Juliet Christian-Smith published *A Twenty-First Century U.S. Water Policy*. Through a collection of eleven essays by Gleick, Christian-Smith, and a team of Institute researchers and independent collaborators, the book describes the many challenges the country faces in terms of water use and water quality, and offers corresponding policy solutions suited for twenty-first century needs. Specifically, the Institute’s proposed “soft path” approach to water policy works to satisfy the needs of users in the most efficient way possible, abandoning the traditional “hard path” policies of the past century that led to the environmental concerns and inequitable access issues that the country faces today.

The authors argue, while state and local governments manage most water issues, the federal government has a unique role in promoting high standards of water quality and efficient practices that cater to the specific water needs of different customers. Each essay focuses on specific issues of water use and offers “soft path” policies that would improve sustainability in regard to each issue. Among the numerous policies considered, the authors especially urge the federal government to improve its data collection systems; tailor financial incentives and subsidies toward water conservation practices; work to improve inter-agency cooperation; and integrate environmental and climate change concerns into each aspect of water policy.

Chapter One provides an overview of national freshwater availability and use. It emphasizes that deficient data collections severely limit the assessment of water availability year-to-year. The United States Geological Service recently began preparations for a “National Water Census” to help gather information on surface and groundwater supplies, but funding is sparse and the USGS has repeatedly decreased its monitoring actions. Monitoring river systems and groundwater may be challenging, but governments require adequate information to understand the threats of over-allocation, pollution, and climate change.

Chapter Two delves into the legal context of water management, focusing especially on federal agency regulation and laws affecting national water use. On the national scale, water policy originates from over thirty federal agencies, including the Army Corps of Engineers, Environmental Protection Agency, USGS, and Fish and Wildlife Service. Few of these agencies, however, have a stated mission relating to water. Additionally, allocation of federal funding among these agencies dilutes the power of each to implement its water pro-

grams. In terms of federal law relating to water, the authors emphasize the accomplishments of the Clean Water Act (“CWA”) and the Safe Drinking Water Act (“SDWA”) in improving the quality of drinking water and reducing pollution in ecosystems. At the same time, litigation and deficient appropriation continue to limit the enforcement of these laws both geographically and jurisdictionally. Finally, the authors highlight the Chesapeake Bay Commission as one example of federal leadership creating an interstate program that, while voluntary, led to significant improvements in the Chesapeake ecosystem. The authors are clear that water policy should not be wholly nationalized, but emphasize that federal policies—like reinstating River Basin Commissions or encouraging interstate agreements on shared resources like the Ogallala Aquifer—possess the potential to greatly improve water use management.

Chapter Three focuses on water and environmental justice. Despite stringent national water quality laws, the authors argue that enforcement is inconsistent and leads to inequitable access to clean and safe water. Decades-long agricultural pollution in California’s San Joaquin Valley is just one example of subpar enforcement in a predominantly low-income area. The authors explain that most violations of CWA standards come from small-scale systems, often in rural areas, and that CWA violations also disproportionately affect low-income communities of color. Enforcement of water quality standards is less cost-efficient on small-scale systems, but the authors believe that protection of low-income communities is essential to environmental justice.

Chapter Four gives a brief overview of the unique water management challenges Native American tribes face. Most importantly, legislation does not typically define tribal rights to water; litigation does. This non-legislative framework can be both a blessing and a curse. In *Winters v. United States*, the Supreme Court recognized a reserved water right for tribes. But tribes still face obstacles to administering their water rights and regulating water quality on reservation land. The EPA’s “treated as states” (“TAS”) program works to expand tribal governance over environmental protection, but only about ten percent of all tribes have achieved TAS status. Because most tribal governance relating to water is non-legislative, incoherent policies continue to pose challenges to tribes in determining their rights and their ability to enforce water quality.

Chapter Five describes successes in improving water quality across the country, but also the need for new solutions to new challenges. The CWA and SDWA have contributed to a noticeable improvement in water quality nationally, but their application has been inconsistent and requires updating. Knowledge of new contaminants has improved, but integrating those new contaminants into the enforcement framework has been incomplete because of deficient funding to research their effects. The CWA and SDWA have significantly reduced point-source pollution, such as industrial and agricultural discharge. However, the statutes have had limited success with regard to non-point-source pollutants, including agricultural and urban runoff, which account for the majority of water pollution today. Some of these sources may be difficult to reduce, but the authors suggest the EPA should require states to submit management plans on nonpoint-source pollution, including plans to use porous surfaces and other green infrastructure to mitigate pollution.

Chapter Six highlights the need to protect freshwater ecosystems. Fish kills, river fires, and other environmental issues continue to decrease in frequency under the CWA, the Wild and Scenic Rivers Act, and the Endangered Species Act. However, twentieth century policies continue to hamper efforts to improve ecosystems in the twenty-first century. Utilizing the “soft path” approach, the authors suggest a number of policies for the federal government to adopt. For example, they suggest removing unsafe and aging dam systems to improve the water quality and ecological quality on many river systems. Additionally, they argue that existing dams can better mimic hydrological conditions with improved data collection and additional USGS river gauges. Moreover, the authors point out that economic tools can also help to restore ecosystems by encouraging instream flows. The Bureau of Reclamation provides water to one in five farmers in the West, providing an indirect subsidy that keeps water prices artificially low. With sounder water pricing policies, the authors contend the federal government can encourage conservation and increase the market for instream flows.

Chapter Seven outlines the traditional approach to municipal water, through which large infrastructure projects encouraged consolidation into centralized systems, making upgrades and administration more efficient through economies of scale. But with this approach came environmental issues and potentially inefficient uses of water. As the authors argue, simply supplying potable water to the public overlooks the nature of public demand and rules out the possibility of new supply-side options lowering costs and increasing conservation. States like Florida, Texas, and Arizona, for example, have begun to implement programs that reuse non-potable water for watering, thereby lessening withdrawals. By increasing State Revolving Funds, the authors argue, the federal government can provide low-interest loans for states and municipalities to supplement customer revenue and allow for more water and wastewater system improvements.

Chapter Eight focuses on the largest national use of water—agriculture—and suggests a number of conservation practices that industry can implement to both cut costs and better prepare for increasing impacts of climate change. The authors recognize the immense federal support the Bureau of Reclamation, the Farm Bill, and agricultural subsidies provide to farmers, but argue that these supports discourage conservation by incentivizing growth of water-intensive crops like corn, soy, and wheat. As an alternative, the authors suggest Revolving Loan Programs to realign these financial incentives by assisting in conservation projects that have high initial costs but create much less water-intensive systems and crop growth. The authors suggest many farmers would stand to benefit from more efficient irrigation systems as well. By educating the public on the risks of climate change and increased variability of growing seasons, the authors argue farmers can adapt their practices to prepare for droughts and diminishing groundwater resources.

Chapter Nine discusses water use in the energy sector, where use is increasing rapidly but knowledge and data are severely lacking. Because of a lack of coordination between energy and water regulation, energy production practices are inefficient. Once-through cooling systems, subsidies for water-intensive biofuel development, and groundwater use in oil and gas production

are all practices federal policy does not work to mitigate. By reallocating renewable energy subsidies and providing a financial incentive to use recycled water, the federal government can encourage efficient water use. Conserving water, the authors point out, saves energy, which in turn saves more water. If energy companies recognize these benefits, they can conserve water and save on production costs all at once.

Chapter Ten discusses an issue relatively new to water policy: climate change. Climate change will have a tremendous effect on water use and water quality, because it fundamentally alters the hydrological cycle. This affects recharge rates of groundwater, shifts growing seasons for farmers, and threatens ecosystems and animals like salmon that can only survive in specific water temperatures. To better understand and tackle these issues, the authors support appropriations for the National Climate Service that President Obama ordered in 2010 as an extension of the National Oceanic and Atmospheric Administration. Through the efforts of NOAA, as well as other departments like Interior and EPA, data collection can improve allowing every sector to adapt to the threats of climate change. Many of these changes are “no-regret” options and will benefit users whether they are undertaken in response to climate change or otherwise.

Chapter Eleven evaluates the United States’ role in international water issues, both in relation to shared water resources with Mexico and Canada, and to water poverty and development efforts across the globe. Gleick predicts that increased water scarcity will be a common flashpoint in future diplomatic conflicts. Thus, in light of the United Nations’ declaration of a “human right to water,” he argues the United States government should work to encourage water compacts around the globe creating a framework for dispute resolution on shared water resources. Funding for development programs, especially through USAID and the recently passed “Senator Paul Simon Water For the Poor Act,” can improve the effectiveness of American investment and prevent water from becoming a weapon of war.

A Twenty-First Century U.S. Water Policy is a truly comprehensive survey of current national water policy. Persistent throughout the book is a critique of the country’s capacity for data collection. The authors used what quantitative data is currently available to craft their “soft path” recommendations, but are clear that improving water monitoring is the cornerstone to informed policy-making. Notwithstanding the quantitative approach, including a number of graphs and statistical tables, the book serves as an accessible source for non-technical readers interested in the many challenges to United States water policy.

Davis Wert

Stephen Grace, *Dam Nation*, Globe Pequot Press, Guilford (2012); 333 pp; \$24.95; ISBN 9780762770656; hardcover.

[D]ams rise like monuments in the deserts of the West. They are America’s cathedrals, its castles, its pyramids. The immensity and gorgeous symmetry of these monoliths will stun future worlds looking back on ours. We