

# Integrating Law, Science and a Way Forward: Opportunities for Collective Action in a Time of Change

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**O**n January 8, 2018, the U.S. Supreme Court heard two interstate water cases, including a long-awaited hearing between Georgia and Florida. In reviewing the oral arguments, we were struck by how the justices found the U.S. Army Corps of Engineers’ modeling “incomprehensible,” with much argument about whether water saved in Georgia would actually flow to Florida (*Florida v. Georgia 2018*; <https://bit.ly/2CDuODk>). Given improvements in science—for both surface water and groundwater—over the past 150 years, this discussion was dishearteningly similar to the Ohio Supreme Court’s 1861 decision which noted that groundwater was “occult” and therefore could not be easily regulated (*Frazier v. Brown 1861*).

While the scientific understanding of water has improved, the legal basis for allocating, and more broadly managing, water in the United States is slow to adapt. Yet the need to come together to find solutions to water management is acute—both in the western *and* eastern United States. Although we may have what seem like insurmountable challenges, the opportunity for collective action on water is now, especially if law and policy implications are considered at the same time as scientific and financial factors.

Even as water use efficiency has increased, water resources are under increasing pressure. Common challenges across the U.S. include growing population and land use changes, new uses, failing infrastructure, water quality impacts, endangered species and the need to meet other types of rights, including tribal rights. In addition, extreme weather conditions are causing huge impacts: more frequent and severe floods, more and longer droughts, earlier runoff. California’s recent drought exemplifies the uncertainty caused by such extremes; the five-year drought was “cured”

by some of the worst flooding on record, though groundwater declines remain.

In the western United States, water allocation under the prior appropriation doctrine is under pressure. This system of priorities dates has not ensured adequate water to protect now-endangered species or provide water for tribes. If a conflict is taken to court, most western judges have little exposure to water law; only Colorado and Montana have specialized water courts.

The west is not alone in challenges over water. In the eastern United States under the riparian rights doctrine, depending on each riparian landowner to use a “reasonable” amount of water is fodder for conflict. In 2016, much of the east coast faced drought, with a statewide drought watch in Connecticut and dry wells in New Hampshire. In South Carolina, Google’s request to pump 1.5M gallons/day of groundwater to cool a data center highlighted the lack of an adequate regulatory structure. Some conflicts are old: along the Potomac River, a conflict over water allocation dates to a 1785 compact. Two of the six current U.S. Supreme Court cases over water allocation between states are eastern: *Florida v. Georgia* and *Mississippi v. Tennessee*. And some conflicts are new: there is a groundwater conflict brewing between Michigan, Indiana and Ohio over the Michindoh Aquifer.

Despite these challenges, the opportunity for collective action on water, particularly in a way that allows our legal institutions to adapt, has perhaps never been more important. Bringing people together on a watershed scale can lead to solutions. At the Stockholm World Water Week in August 2018, a speaker noted that water is the “master variable” critical to both landscape scale processes and human society alike. This master variable is critical. Working with stakeholders in the Chehalis Basin of Washington, it has been heartening to see people continue to come together to find ways to manage not only flooding, but also water scarcity and fisheries needs. Although painstaking to build, their cooperative approach to finding solutions has also led to funding. Likewise, stakeholders in the Central and West Coast groundwater basins of the greater Los Angeles worked together to

### Key points:

- Convening critical stakeholders and a range of perspectives and expertise allows for a better definition of potential challenges and opportunities, analysis of scenarios and implementation (including funding) if parties helped define the solutions to be pursued.
- Such engagement can also help identify and define legal challenges that can potentially be addressed.
- Expanding the challenges being considered can help. Stakeholders gained traction on addressing flood impacts when the conversation was expanded to include drought and fisheries protection as well.
- Financing and implementing solutions is a challenge, but innovative finance strategies for both natural (green) and built (grey) infrastructure are available; finding ways to leverage public and utility funding.

revise legal judgments to allow for more storage and use of existing aquifers, a key piece of that area’s regional water supply. In Pennsylvania, finding ways to meet farmer and producer’s needs while addressing water quality requirements has resulted in robust conversations and a potential pathway forward to meet legal requirements. Finally, we were heartened to read that although it took 10 years, stakeholders in Virginia recently negotiated an agreement for large groundwater users to decrease their consumption and lessen the overdraft and saltwater intrusion.

A framework of integrated water resource management may allow law to also break out of its silos. Like science, law is often siloed: state laws related to water allocation have limited linkages to federal laws for water quality; stormwater and flood waters are addressed under different legal regimes, as are drinking water and wastewater. Integrating these topics into a broader discussion may allow not only human needs to be met, but also ecological flows.

Although various states have adopted instream flow polices to provide water for ecological needs, such provisions can be limited. In the western U.S., instream flow rights often have the least seniority of all water rights because of the priority date system. Successful implementation of flow policies has primarily occurred to preserve critical habitat under the provisions of the Endangered Species Act. In the eastern United States, instream flow policies are limited to water quality considerations or conditions in water withdrawal permits when water shortages may occur due to drought. In some states, a strong public

trust doctrine has provided the basis for returning streamflow for ecological purposes (such as the Mono Lake case). More recently, the idea that rivers have rights to water is being pursued in the courts.

Absent proactive integration of science and economics, the law will continue to react to conflict-by-conflict challenges. Educating judges about critical water science needs may lead to better decisions; such work is currently being undertaken by the National Judicial College’s Dividing the Waters program (<http://www.judges.org/dtw/>). There may be other innovative ways at bridging this gap as well. As Florida and Georgia have been experiencing, protracted litigation may simply lead to justices trying to figure out hydrology. Finding ways to use water as the “master variable” to integrate law and science is a critical need, and thoughtful engagement offers a way forward. ■

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