

# TUWaterWays

Water News and More from the Tulane Institute on Water Resources Law and Policy  
September 22, 2015

## Put a Ring on It

We know that California's drought is bad, but just how bad? Well, new research suggests it's historically bad. In a [recent study](#) from the Laboratory of Tree-Ring Research at the University of Arizona, scientists looked at the rings from two sets of trees to estimate temperature and precipitation going back to 1400. High rates of winter precipitation leave wide rings while low precipitation results in narrow rings. The results indicate that the snowpack in the Sierra Nevada Mountains is lower now than it has been in 500 years. [Most of California's precipitation](#) comes in the winter months so the snowpack is a crucial reservoir that provides 30% of the state's water supply. It remains to be seen how instructive past weather patterns can be for future planning, since anthropogenic climate change is potentially pushing us into uncharted territory. That, and Mother Nature seems to have a knack for [ironic timing](#). Still, any way you cut it, the tree ring study gives perspective on the severity of the problem. Mark Gold of [UCLA's Institute of the Environment and Sustainability](#) said "This is probably the biggest water supply concern our state is facing...On a scale of 1 to 10, it's 11." [Uh oh.](#)

## Insane in the Membrane

Saltwater accounts for 97.5% of all the water on our blue planet. As [Homer Simpson learned](#), however, you can't drink the stuff right out of the ocean. For decades, people have used desalination plants to turn saltwater into potable water, especially in arid coastal regions like the [Middle East](#). In the United States, San Diego County (an arid coastal region) recently broke ground on the western hemisphere's [largest desalination plant](#), and officials in the San Francisco bay area are [looking into it](#). In most places, though, the costs (about \$2,000 per acre foot) of tapping into the ocean are prohibitively high. That may all change thanks to new technology developed at Alexandria University in Egypt. In a [report](#) published in the journal *Water Science and Technology*, researchers introduced an "innovative polymeric membrane" that can be made in remote, developing parts of the world using cheap ingredients. The membrane, combined with a process called pervaporation, removes salt and other impurities; the technology can be used on saltwater, dirty water, and even sewage. Because the pervaporation process doesn't require electricity, which is a [huge cost component](#) of traditional reverse-osmosis desalination plants, it is

The Tulane Institute on Water Resources Law and Policy is a program of the Tulane University Law School.

The Institute is dedicated to fostering a greater appreciation and understanding of the vital role that water plays in our society and of the importance of the legal and policy framework that shapes the uses and stewardship of water.

## Coming up:

[18th Annual Conference on Litigating Takings Challenges to Land Use & Environmental Regs.](#)

September 25, 2015

University of Maryland School of Law  
Baltimore, MD

[8th Annual Anba Dlo Water Symposium and Halloween Festival](#)

October 17, 2015

New Orleans Healing Center  
New Orleans, LA

[State of the Coast: Call for Abstracts and Session Proposals](#)

Open until Nov. 30, 2015

## Water jobs:

[Coalition to Restore Coastal Louisiana](#)

Restoration Programs Director, Habitat Restoration Program Coordinator, Science/Technical Director  
Baton Rouge, LA

[Virginia Energy Attorney](#)

Southern Environmental Law Center  
Charlottesville, VA

[MRD & Natural Infrastructure Economist](#)

(Two Year Postdoc Position)

Environmental Defense Fund

Washington, DC, New York City, or Boston, MA

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comparatively inexpensive. While commercial implementation of the new technology is still a long ways off, it has the potential to be a game-changing innovation. Water, water, everywhere...so let's all have drink!

### **Bye-bye Birdsfoot?**

The combination of sea level rise and subsidence may make some land in the lower Mississippi River [indefensible in the long run](#). At least, that's the consensus among the three winning teams from the [Changing Course](#) design competition. The teams all concluded that the mouth of the river should be moved north, possibly as far as [English Turn](#). This would obviate the need for two of the largest sediment diversion projects in the state's Coastal Master Plan, the [Mid](#) and [Lower Barataria](#) projects. These projects, with a combined price tag in excess of \$1 billion, could be futile say the contest winners, because they might not build land fast enough to keep pace with rising seas and subsidence: "We don't have enough mud to fill the holes." While undoubtedly [thinking of the master plan](#), the contestants were not bound by its budget requirements, stakeholder input process, or political realities. The team members admitted that the science and engineering were the easy parts; mustering the political will to begin difficult conversations about the future of the lower river and its communities will be the real challenge.

### **Water World**

Scientists looking through seven years of photos from the spacecraft Cassini noticed something: Enceladus wobbles. I know what you're thinking: "scientists have photos of the [offspring of Gaia and Uranus](#), who fought the Olympians in the [gigantomachy](#), doing the [wobble](#)?" Well, no. In this case we're talking about the [moon of Saturn](#) named after the giant. The wobble in the moon's spin is proof that there is liquid between the surface and the core. If it were solid ([solid as a rock](#)), the weight in the center would hold it in tighter rotation. Unfortunately for any '[smokers](#)' looking to relocate, the surface is covered in a layer of ice. It *does* have hydrothermal vents, which some believe is, along with the presence of liquid water, [necessary for life to form](#). Fear not, another scientist is [pretty sure](#) that an alien invasion is unlikely.

### **Upcoming: Anba Dlo and State of the Coast**

Two events listed above are of special interest to the water community in south Louisiana:

[Anba Dlo](#) (Oct. 17, 2015) is a Halloween Festival that reflects on New Orleans' complicated relationship with the water that surrounds us (or it's a water conference that reflects the City's exuberant relationship with music, costuming and Halloween, take your pick). Anba Dlo is Haitian Kreyol for 'beneath the water' (Francophiles, note the similarity to 'en bas de l'eau'). Entry is free to this year's festival, which features a [water symposium](#) (featuring our own [Mark Davis](#)) followed by a [parade](#) and a night of [live music](#).

The [State of the Coast Conference](#) (June 1-3, 2016) is the largest state-wide conference dealing with coastal issues. It brings together professionals across disciplines to exchange information and ideas on the economic, cultural, and environmental issues facing coastal Louisiana. The call for [abstracts and session proposals](#) is open through November 30, 2015.