TUWaterWays

Water News and More from the Tulane Institute on Water Resources Law & Policy

August 8, 2019

Hurricane Barry v. Gulf of Mexico Dead Zone: Who Won?

Remember Hurricane Barry? It was the storm that coincided with elevated Mississippi River levels and, consequently, looked like it might be scarier than Game of Thrones' Night King who had the bluest eye anyone has ever seen. While Louisiana may not have looked like paradise as Barry created a couple of overcast and wet days, for the most part it turned out to be a mercy situation worthy of a song of Solomon. That is, Barry spared our beloved, jazz city that we call home and love so much, as well as surrounding areas, from much damage and loss of life. Moreover, the Army Corps of Engineers says the situation has prompted the agency to look for better ways to estimate and communicate possible threats should the situation recur. But, did Barry also affect the Gulf of Mexico dead zone?

Sort of. LSU and NOAA scientists say that this year's Gulf of Mexico hypoxic area or dead zone, which stretches from the mouth of the Mississippi River to west of Galveston, Texas, covers 6,952 square miles, an area larger than the state of Hawaii. This constitutes the eighth largest dead zone in the 33 years that scientists have measured the phenomenon, but scientists have determined that it is almost 1,000 square miles smaller than had been estimated. Scientists predicted a near-record large dead zone for this year because record floods had carried so much nitrogen and phosphorus from the nation's heartland down the Mississippi. The scientists explained that it is likely that the passage of Barry along the coast stirred air into the bottom waters. However, LSU marine scientist Nancy Rabalais explained: "We found that, despite the storm, the zone re-formed and was in the process of rapidly expanding." She further observed that this year's hypoxia area is 2.8 times larger than the goal set by the Mississippi River/Gulf of Mexico Hypoxia Task Force, which calls for reducing the size of the dead zone to a five-year average no larger than 1,931 square miles. That goal was originally supposed to be reached by 2015, but is now set for 2035. So, it seems as if Barry brought a bit of a reprieve but, like many coastal issues, there is still much work to be done. When it comes to Barry v. the dead zone, we'll call it a draw like the battle of King Arthur and the Black Knight.

Why did the geography student succeed? His grades were above C-level

In news that we hope is less shocking than that terrible joke, despite being spared from Hurricane Barry, flooding remains a major concern for New Orleans, as well as other areas worldwide. Thus, it is exciting to hear about the publication of a new global map of freshwater hydrography, which is so precise that it could be used to predict future flooding events across the world. In the past, scientists

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:

Council on Watershed Mgmt. Meeting
August 8, 2019; Baton Rouge, LA

Impacts of Oil Spills on Underdog Species
August 13, 2019; Lacombe, LA

Sip to Save the Wetlands
August 15, 2019; New Orleans, LA

Lunch & Learn: Managing Stormwater
August 20, 2019; Metairie, LA

CPRA Board Meeting
August 21; Baton Rouge, LA

LSU Science Café: Coastal Voices
August 27, 2019; Baton Rouge, LA

Bayou Bonfouca Marsh Planting
September 5, 2019; Slidell, LA

State of the Coast Session Proposal Deadline; September 13, 2019

Water jobs:

Consortium Administrator
LUMCON; Chauvin, LA

Deputy Director
Audubon Louisiana; New Orleans, LA

Program Coordinator
The Water Collaborative; New Orleans, LA

Research Engineer
ULL Watershed Flood Center; Lafayette, LA

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have used topographic data collected by spacecraft to generate detailed, 3-D models of Earth's surface, but these maps sometimes distort the slope of local terrain due to observation errors. By contrast, the MERIT Hydro is less prone to errors because it uses complex computer algorithms with very little human guidance to determine the shape of millions of Earth's rivers, lakes, and canals, as well as a hydrologically-consistent map of Earth's topography. To further refine the map, the team included global Landsat data and data from the crowdsourced database OpenStreetMap. As a result, the algorithm integrated information on small streams not captured by current satellite images and human-made stream networks, such as irrigation canals, that could be flood prone. The team pointed out that a remaining challenge is arid regions where streams are often intermittent and ephemeral.

One member of the team explained the importance of the map as such: "As Earth's climate changes, we expect that the intensity of rainfall events will change as well. To be able to translate predicted changes in global rainfall intensity to global changes of flood hazard, hydrologists need highly accurate maps of Earth's land elevation and hydrologic features. . . . MERIT Hydro provides us with a high-fidelity representation of the flow paths of water and so it improves our ability to predict the timing and magnitude of river flow, including floods." The team member also observed that the map will be useful for the reinsurance industry, which provides insurance for insurance companies. If only all maps were this accurate.

Unfortunately, there wasn't just one water map that was shaking people up this week. The World Resources Institute released several new maps this week with it's Aqueduct tool. These maps show that 17 countries that are home to one quarter of the world's population are facing looming water shortage crises. Though many of the countries facing these shortages are attempting to avoid their own Day Zeros, the results of this are and will be widespread and tragic and can only be avoided by drastic measures. But the most pressing question is do you think this is going to change the plot of that upcoming remake of The Man Who Fell to Earth?

"You go first. No, you. I insist."—EPA to SCOTUS

The EPA announced that it will wait to move forward with a rulemaking until the Supreme Court resolves *County of Maui v. Hawai'i Wildlife Fund* (oral arguments are set for November 6). At issue is whether the Clean Water Act's permitting program applies to pollution that reaches a federal waterway through groundwater. Meanwhile, the EPA will rely on a recently crafted guidance document with a narrow interpretation that does not require permits for such discharges. Poor groundwater is probably thinking: "No respect! ..... I Don't Get No Respect."

"I'm melting! Melting!" —the Wicked Witch of the West, Greenland, and Europe

Scientists say that on August 1, Greenland's ice sheet lost 11 billion tons of surface ice to the ocean, which constitutes the biggest melt of the summer and is equivalent to 4.4 million Olympic swimming pools. This year's ice sheet melt began earlier than usual and has been persistent over the past four months, which have recorded all time temperature highs. Thought Greenland has received much of the attention thus far, scientists are finding that glaciers across Europe have also experienced unusually high melting rates coinciding with this year's heat waves. With climate change wreaking havoc on our planet, thank goodness NASA recently discovered a potentially habitable super-earth located a mere 31 light years away. While that irksome habitability question is resolved, perhaps if we send thoughts and prayers to Greenland and Europe that will solve the problem.

Back to school, back to school to prove to Dad that I'm not a fool

It's nearly back to school time! Teachers, are you searching for hands-on STEM activities for the upcoming school year? Well, you're in luck. The LSU Center for River Studies is now booking 4th-12th grade School Group Tours for the 2019-2020 school year for students to view and learn about the Lower Mississippi River Physical Model. Who, besides Arnold, doesn't love an exciting field trip? So, schedule a tour today!