

Spillway Opening Prompts Mixed Reaction

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In a rare move, the U.S. Army Corps of Engineers has opened the Bonnet Carré Spillway to prevent the Mississippi River from surpassing its flood level of 17 feet. The move will impact the ecosystems in and around Lake Pontchartrain, according to faculty in the Tulane Department of Earth and Environmental Sciences.



A pushboat makes its way through the swollen Mississippi River. High river levels prompted the U.S. Army Corps of Engineers to prevent flooding by releasing river water into Lake Pontchartrain. (Photos by Ryan Rivet)

The opening of the spillway for the first time since 1997 comes in response to high river levels caused by heavy rains in the Midwest.

Starting on Friday (April 11), the Corps opened 84 of 350 bays to let water flow into the spillway. The spillway was built upstream of New Orleans to prevent river flooding in the city after the 1927 floods. For the first time since 1997, it is doing its job, alleviating pressure on the river levees.

George Flowers, associate professor of earth and environmental sciences, says the initial effect on the lake will be a negative one. However, he adds, the lake tends to rebound.

“Initially, it has a negative effect,” Flowers says. “Nutrients are flushed into the river from farmland. For the first year or so, there is a depression in the productivity in the lake, then we see a rebound.”

The negative impact is due to higher level of fertilizers, specifically nitrogen and phosphorous, along with more oxygenated water than the lake usually contains. The fertilizer helps marine algae grow in the same manner it helps corn grow, and the excess algae can suffocate marine organisms.

“The lake is usually starved for nutrients, and these can stimulate productivity, that's been documented before. Any time you flush oxygen into an area it can be a good thing,” Flowers says.



Before the opening of the spillway, the high river draws an afternoon spectator along Riverview Drive at “the fly” behind Audubon Park.

That opinion may not be shared by all. Carlton Dufrechou, a Tulane engineering alumnus and head of the Lake Pontchartrain Basin Foundation, says that it is possible to see a tremendous negative impact on the lake.

“The worst-case scenario would be a repeat of 1997,” Dufrechou says. “In '97, algae covered 500 square miles of the lake. It created a neurotoxin that was so dense, it caused a health advisory for humans and animals.”

Dufrechou adds that he does not anticipate a repeat of 1997.

“I don't think we'll have that this year; '97 was three times the flow, and almost twice the duration.”

The ecological impact notwithstanding, the opening offers a rare opportunity to members of the Tulane research community. Thanks to a grant from the National Science Foundation, Alex Kolker and Brad Rosenheim, also faculty in the Department of Earth and Environmental Sciences, are working with scientists from other area institutions in both river-based and wetland-based sampling to assess the effects of the rare high-water event on the Mississippi River.

“This is approximately a once-per-decade high-water event. Since that is beyond the scope of ordinary scientific planning, we are grateful for rapid-response support from the NSF for this endeavor,” says Rosenheim.

According to Kolker, “River floods built the delta and everything that underlies the city of New Orleans. We want to use this event to understand how sediments are distributed by rivers in the coastal zone. This knowledge is essential for coastal restoration.”