

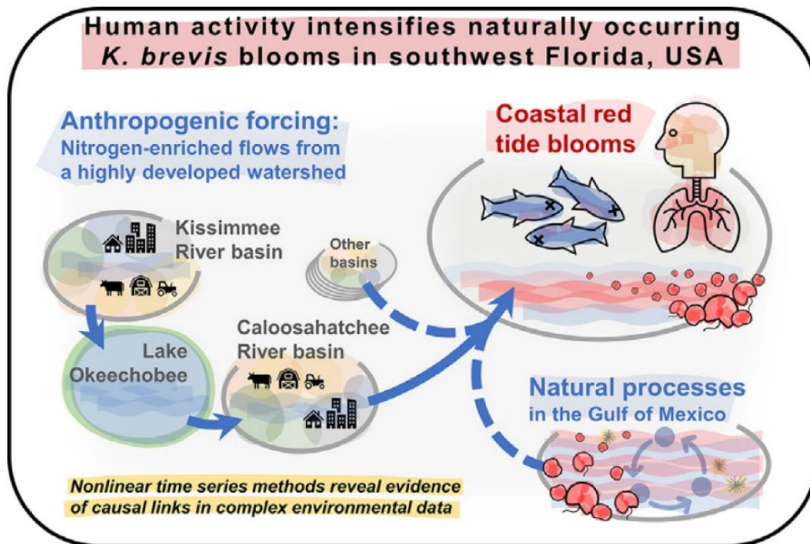
# Study: Freshwater discharges from Lake Okeechobee feed algae blooms in the Gulf

WUSF Public Media - WUSF 89.7 | By **Jessica Meszaros**

Published September 16, 2022 at 9:12 AM EDT



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University Of Florida And Partners / Courtesy

**By analyzing nine years of data, Florida researchers confirmed what other scientists, activists, fisherman and others have observed anecdotally for years.**

University of Florida researchers partnered with the Sarasota Bay Estuary Program and the Sanibel-Captiva Conservation Foundation to examine about a decade of freshwater discharges and water quality reports. They proved that nutrient-laden freshwater, which is discharged into the Gulf of Mexico, intensifies existing red tide blooms based on consistent patterns.

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The naturally occurring red tide organism *Karenia brevis* uses nutrients like nitrogen and phosphorus to grow in the Gulf of Mexico. When the organism reaches high concentrations, then it's considered a bloom, leading to the death of marine life, a shutdown of coastal tourism, and respiratory effects for people- even neurological symptoms for some.

Scientists, along with fishermen and others, have long speculated that intense blooms and nutrient-heavy freshwater flows have been connected.

"There just wasn't ... the strong evidence backed by data until now," said UF's Miles Medina, the study's lead author. "I think it's important because in order for policymakers and environmental managers to make decisions, they need to base it on scientific results."

1 / 15



Medina's team has identified the cause-and-effect relationship by cross-referencing red tide reports from the Florida Fish and Wildlife Conservation Commission, along with flow and nutrient data from the South Florida Water Management District between 2012 and 2021.

"There [are] natural drivers that get the bloom started in the Gulf in the first place. But the question is: once they arrive on the Gulf Coast, is there human influence? And that's where we found that influence of nitrogen," he said.

They found that nitrogen-rich water originating from the Kissimmee River basin, which flows to Lake Okeechobee, then down the Calooshatchee River and finally out into the Gulf has persistently made red tide blooms bigger, longer and more intense, according to co-author David Tomasko, director of the Sarasota Bay Estuary Program.

"If you live in the Caloosahatchee River Watershed, which goes up to like Orlando, you are basically part of the of the solution if you want to put it that way of how to make your contribution to the red tides less," he said.

To keep nutrients from entering the water, Tomasko suggested residents refrain from fertilizing lawns during the wet season, properly dispose of pet waste, and not put grass clippings into storm drains.

He said the effects, although often delayed, go beyond where the water ends up in Southwest Florida.

"The nutrient relationship, making red tides worse, has to be put in the context that we're loading our coastal waters with about two to three times as much nitrogen, as was the case when no one lived here," Tomasko said.

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## Jessica Meszaros

Jessica Meszaros is a reporter and host of All Things Considered for WGCU News.

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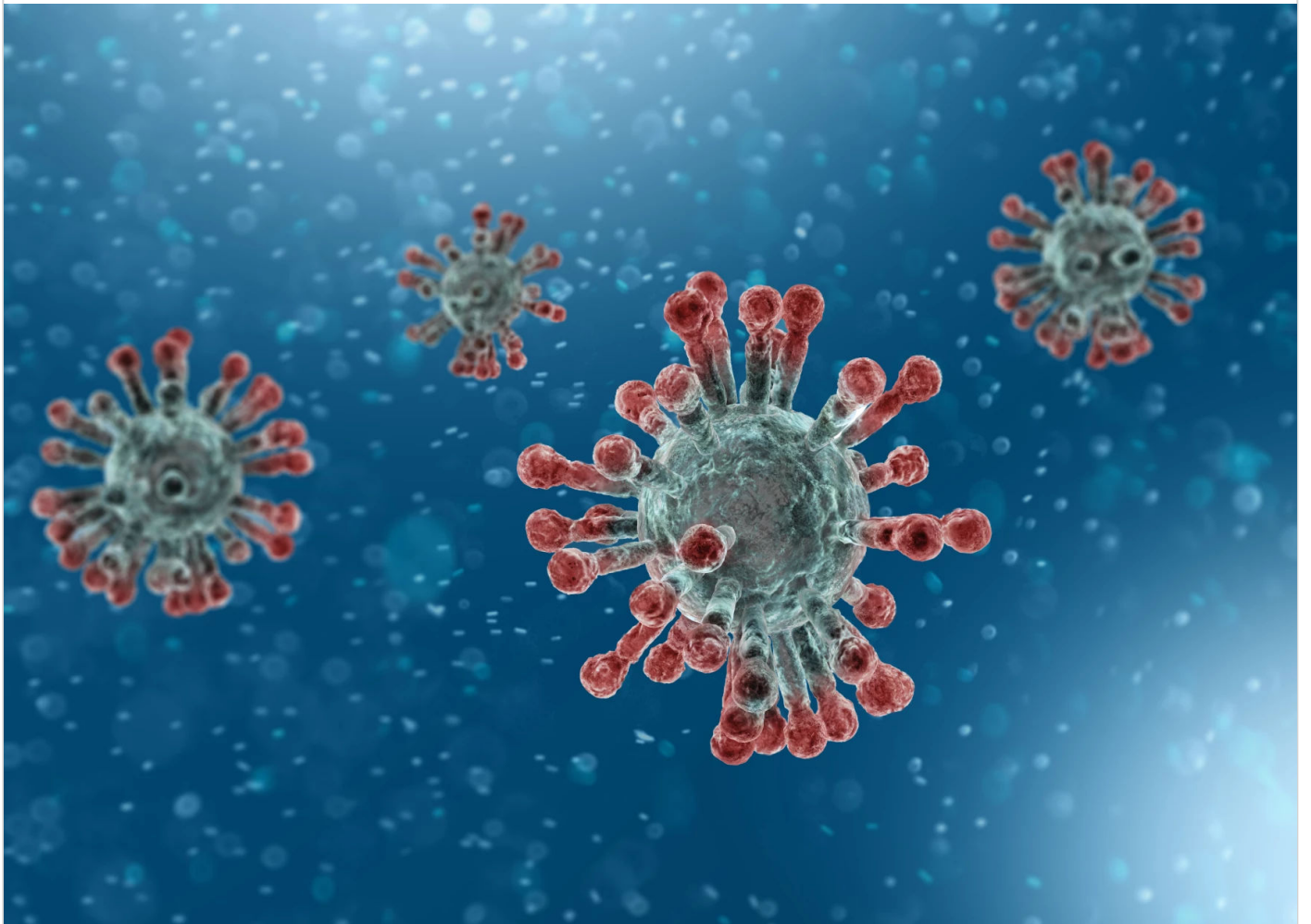
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