

## Red tide debate may soon be settled

Study finds humans make situation worse

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Just as it took decades before smoking was recognized as a cancer trigger, it's taken until recently for science to firmly link nitrogen pollution to the persistence of red tide.

But a new University of Florida study with two nonprofit research partners shows clear ties between nitrogen from human activities and the longevity and severity of the saltwater harmful algal blooms.

Published in the academic journal *Science of the Total Environment*, the report's mouthful of a name is: "Nitrogen-enriched discharges from a highly

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managed watershed intensify red tide (*Karenia brevis*) blooms in southwest Florida." Two of its key findings:

h "Caloosahatchee River discharges and nitrogen inputs systematically intensify blooms" and

h "Anthropogenic influence extends upstream to Lake Okeechobee and the Kissimmee basin."

In plain talk, that means what comes from the land all the way up to Lake O can make things worse downstream and on the coast when there's a bloom.

For years there was an ideological tug of war: Some argued that red tide is a natural phenomenon for which people aren't responsible. After all, they said, mariners in the 1700s documented the toxic overgrowth, long before the state was densely populated.

That may be, said others, but dense population definitely makes it worse.

"Just ask anyone who spends more days on the water than on land," says Daniel Andrews, one of the founders of the nonprofit Captains for Clean Water "They would say of course that's the case."

He likens it to cigarette companies spending years denying their product caused cancer until science definitively shut their propaganda down. "It's kind of sad there had to be a study to combat misinformation," he said. Now, he says, science has caught up with commonsense knowledge, and widely held theories are being proven out.

Even though the blooms can develop naturally, "We took a long view and found evidence that human activity has helped fuel coastal blooms in this