

Will red tide be back?

RED TIDE: What can be done?

No one can say, but all eyes are on the Gulf of Mexico

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Last summer, a massive red tide algae bloom killed millions of marine animals on Florida's Gulf Coast. It made people sick, kept thousands away from beaches and hurt local economies. What will happen now is a mystery.

What's red tide?

Red tide is a plant-like algae species, *Karenia brevis*, natural to the Gulf of Mexico. But in higher-than-normal concentrations, red tide can release toxins that can cause fish kills and health issues in humans.

Is there red tide in the Gulf now?

Yes and no. Red tide algae lives far out in the Gulf, but it's only a nuisance when it comes near the shore and blooms. Researchers who frequently test for red tide have not detected concentrations in water samples along Florida's coastlines in their most recent tests. Weekly red tide reports are available at myfwc.com.

What makes red tide bloom?

It's complicated. Red tide algae need the appropriate temperature, salinity, and nutrients to grow and multiply. The third component is the right physical conditions to concentrate it and move it

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Ron DeSantis, then Republican nominee for governor, listens to Mark Timchula, known as the Beach Guy at Englewood Beach, about the impacts toxic red tide algae was having on the community last summer. DeSantis signed a bill Thursday that will provide \$3 million annually for red research.

SUN FILE PHOTO BY STEVE REILLY

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from its “spawning grounds.”

Much can depend upon the Gulf’s Loop Current. Also, west winds off the Gulf and variations in currents can bring blooms drifting closer to shorelines.

What happens when it blooms?

Wind, waves and tides push red tide cells close to shore.

The toxins are generally released when the delicate cells break up due to wave action.

The release of toxins — both in the water and airborne — can lead to respiratory problems in humans, kill fish, marine life, sea turtles and sea mammals like dolphins and manatees.

Can anyone predict where a red tide will occur?

Red tide blooms can’t be predicted, but scientists can forecast its movement using wind and water current data once a bloom is located.

Scientists also monitor concentrations of the red tide by collecting water samples.

Red tide movement and concentration are important because the effects of a red tide, such as dead fish and human respiratory irritation, depend on these factors.

Is it safe to go in the water now?

Researchers report no serious red tide bloom anywhere right now; however, there are other things that can affect the water. On Thursday, Sarasota County issued a no-swim alert for the beaches around the Venice Fishing Pier due to the bacteria from animal and other waste flushed off the land and into stormwater runoff after the recent rains. That no-swim alert was lifted Friday.

How does Lake Okeechobee figure into red tide?

In recent summers, massive blooms of different kinds of freshwater blue-green algae have impacted Lake Okeechobee. When the U.S.

Army Corps of Engineers discharges water to control the lake’s levels, the algae has come into Indian River Lagoon, the St. Lucie River and the river’s estuary on Florida’s east coast and the Caloosahatchee Estuary on the west coast. While the freshwater algae is a mess and washes into the Gulf and Atlantic oceans, scientists have not been able to establish a link between it and red tide algae.

How about that stuff that was in Lemon Bay?

In May, the Florida Department of Environmental Protection tested Lemon Bay and identified a cyanobacteria called *Lyngbya wolle*, with second, branching green algae called *Bulbochaete*. While not toxic in itself, decaying algae can be infested with bacteria. It can grow into thick green and brown mats, and give off a sulfur-like stench.

What's being done or can be done about red tide?

A lot of scientists are trying to figure out what exactly triggers a red tide bloom and what can be done to stop it or keep it from happening.

Florida Gov. Ron DeSantis signed the Florida Red Tide Mitigation and Technology Development Initiative Thursday. It funds a partnership between the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute and Mote Marine Laboratory to develop technologies and approaches to control and mitigate red tide and its impacts. The state will provide \$3 million beginning in the 2019-2020 fiscal year and then annually through the 2024-2025 fiscal year.

Does coastal pollution cause the Florida red tide blooms?

Many algae species are fueled by nutrient pollution associated with urban or agricultural runoff, but there is no direct link between nutrient pollution and the frequency or initiation of red tides, scientists have said. Red tides occurred in Florida long before human settlement, and severe red tides were observed in the mid-1900s before the state's coastlines were heavily developed. However, once red tides are transported inshore, they are capable of using man-made nutrients for their growth.

How can we control Florida's red tides?

Control of Florida red tides is not a simple issue. The harmful effects of a red tide are caused by toxins released when the organism dies.

Potential controls must not only kill the red tide organism and eliminate the toxins from the water. To date, this has not been possible; however, researchers are identifying ways to reduce shellfish toxicity. In addition, any control strategy must not harm the environment at large.

How do I know if there is red tide at the beach I want to visit?

Online, Mote Marine Laboratory's visitbeaches.org details conditions daily at public beaches from Clearwater south to Marco Island. Also, check myfwc.com for updates of red tide conditions.

How can I learn more about red tide?

Visit myfwc.com or mote.org.

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