

BE INFORMED

Florida in midst of wildlife disaster caused by blue-green algae and red tide

State of emergency declared in South Florida. Here's what you need to know.



Several inches of blue-green algae at Central Marine in Stuart, Florida. Photo: Julie Hill-Gabriel

Florida's waterways are screaming for help

A catastrophic combination of red tide and blue-green algae blooms on the west coast, and blue-green algae blooms on the east coast are hurting Florida's waterways and the wildlife that depend on clean water. Together, the blooms are causing significant public health concerns, threatening birds and wildlife, and tarnishing Florida's reputation for world-class beaches. Both occur naturally, but this year's geographic extent and duration are both extraordinary. A combination of excess nutrient pollution and increasingly warmer temperatures are the culprits behind the observed intensity of both blooms.

Floridians along with local, state, and federal government agencies must do their part to protect Florida's waterways.



Photo: NOAA

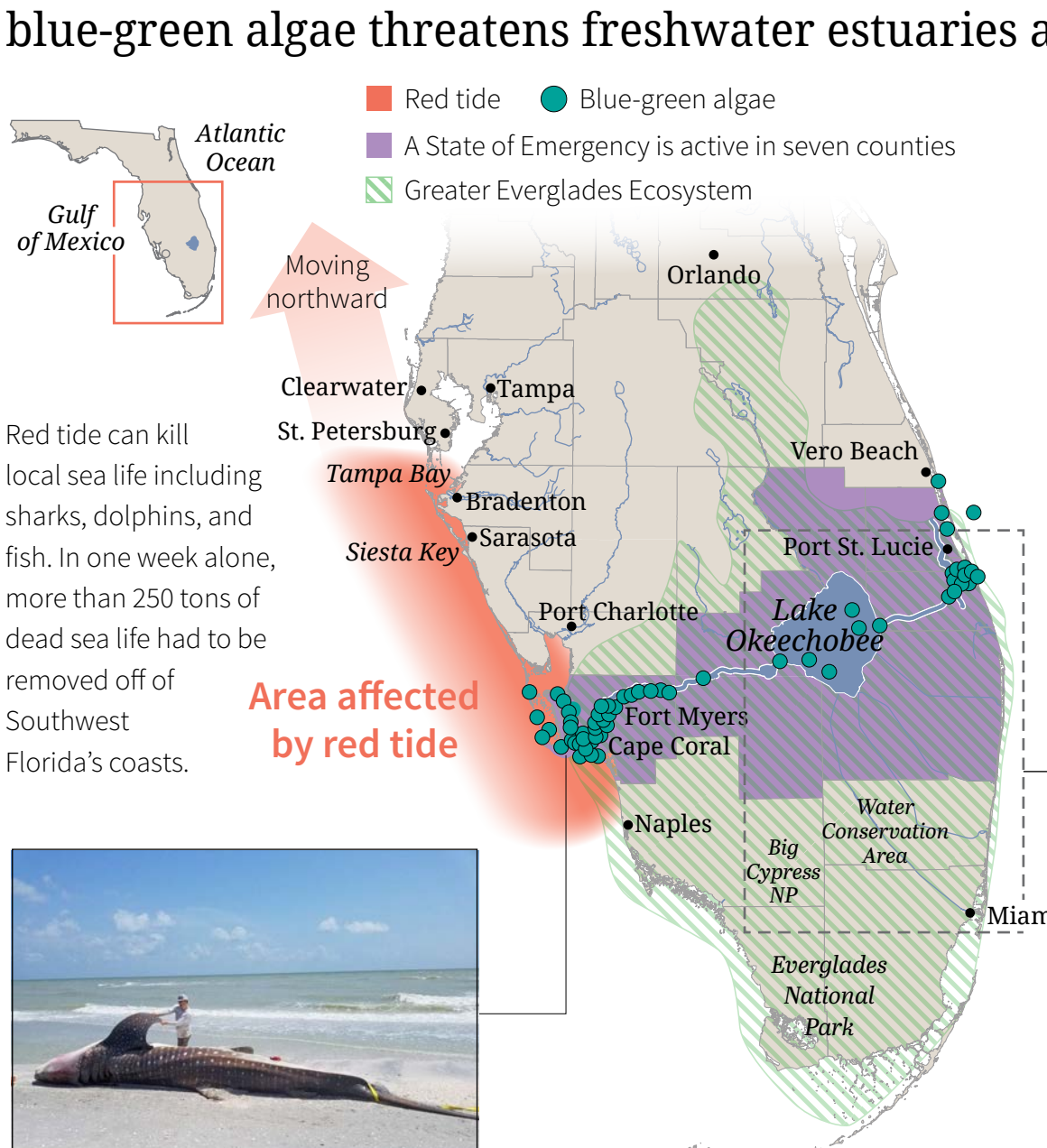
Red tide
Karenia brevis
Occurs in **saltwater** like Gulf of Mexico



Photo: Florida Fish and Wildlife Conservation Commission

Blue-green algae
Cyanobacteria
Occurs in **freshwater** bodies

Red tide drifting in water of Gulf of Mexico along Florida's southwest coast while blue-green algae threatens freshwater estuaries along east and west coasts



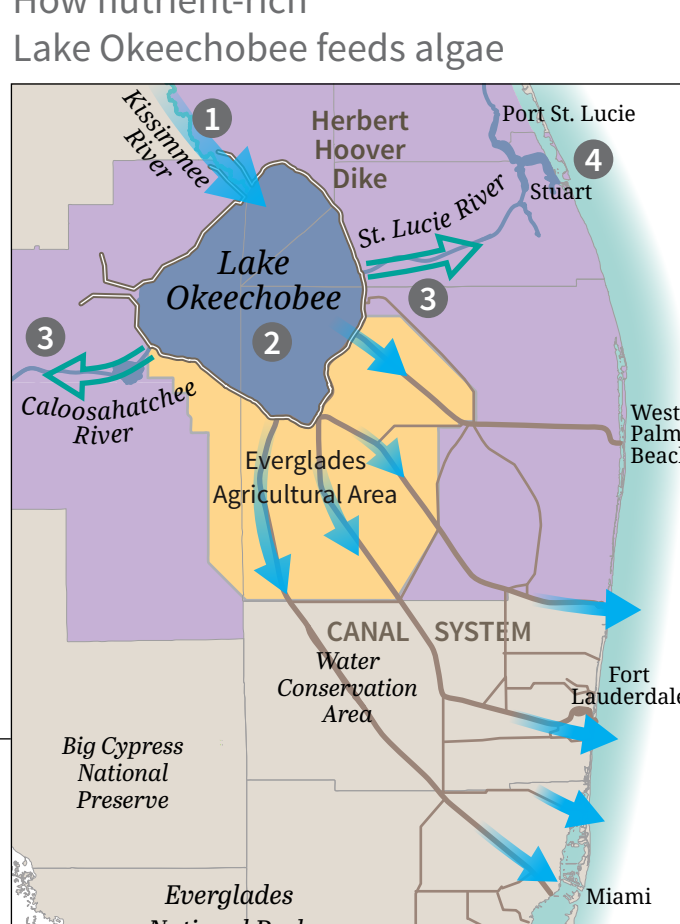
Red tide can kill local sea life including sharks, dolphins, and fish. In one week alone, more than 250 tons of dead sea life had to be removed off of Southwest Florida's coasts.



Photo: Florida Fish and Wildlife Conservation Commission

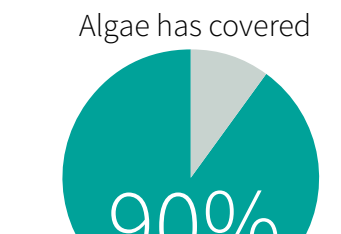
Dead 26-foot-long whale shark washed ashore at Sanibel Island.

How nutrient-rich Lake Okeechobee feeds algae



Maps: Carol Zuber-Mallison/ZM Graphics

- 1 Water flows into Lake Okeechobee from the north.
- 2 Considered the liquid heart of America's Everglades, Lake Okeechobee is a central component in Everglades restoration.
- 3 When lake levels are too high, water managers are forced to release the lake's nutrient-rich water through the Caloosahatchee and St. Lucie rivers.
- 4 Nutrient-rich freshwater can leave thick blankets of toxic blue-green algae in estuaries and along the coast.



Lake Okeechobee:
 • 730-square-mile surface
 • 2nd largest freshwater body in contiguous U.S.



Holding more water in Lake Okeechobee makes it dirtier, unhealthy, dangerous



Everglade Snail Kite. Photo: William Wingfield Jr./Audubon Photography Awards

Harmful algae blooms capture national attention and elicit quick "solutions" to prevent blue-green algae. Some continue to place the blame on the shoulders of the U.S. Army Corps of Engineers by falsely claiming that holding more water in Lake Okeechobee could prevent or end our algae crisis. This is not true.

A DEEPER LAKE IS A DIRTIER AND UNHEALTHIER LAKE

Marshes can cover up to 150,000 acres, one-third of the lake. These marshes provide critical habitat for birds and host commercially and recreationally important fish species. Marshes also help clean the lake. When the lake rises too high, vegetation in these marshes die and decompose—resulting in increased turbidity that makes lake water dirtier.

HOLDING MORE WATER IN LAKE OKEECHOBEE IS RECKLESS

A deeper lake is a disaster-in-the-making for the coastal estuaries to the east and west and for the communities that live south of the lake. It does not solve the current algae crisis and threatens wildlife, public health and safety, and Florida's tourism-supported economy.

A DEEPER LAKE IS A DANGEROUS LAKE

Even after repairs, it is unlikely the dike will receive a high safety rating. The dike is not going to be any taller, or anew, therefore advocating to hold more water in the lake puts communities back in harm's way.

Excess nutrients make it worse

Both red tide and blue-green algae are fueled by an excessive amount of nitrogen and phosphorus in the water.

Where excess nutrients come from:



Hurricanes, currents, increased water flow can stir up decades-old phosphorus from the bottom of bodies of water

Contributing factors to both red tide and blue-green algae

- More CO₂ in atmosphere means more algae growth
- Lack of available methods to clean and store nutrient-rich water
- Warmer waters caused by climate change
- Fewer wetlands to help clean water

Threat to nature

Both red tide and blue-green algae hurt Florida's birds and wildlife. These two outbreaks are independent of one another, but together wreak compounding havoc. Both deplete water of vital oxygen-suffocating fish, mammals, and plants. Dying organisms make the problem worse by releasing additional nutrients and depleting the water column of even more oxygen.

Sometimes opportunistic birds will eat contaminated fish and later become ill or die. When there is lack of available prey, birds must expend more energy and travel further to find food.

Both red tide and blue-green algae kill the prey of Florida's iconic coastal birds.



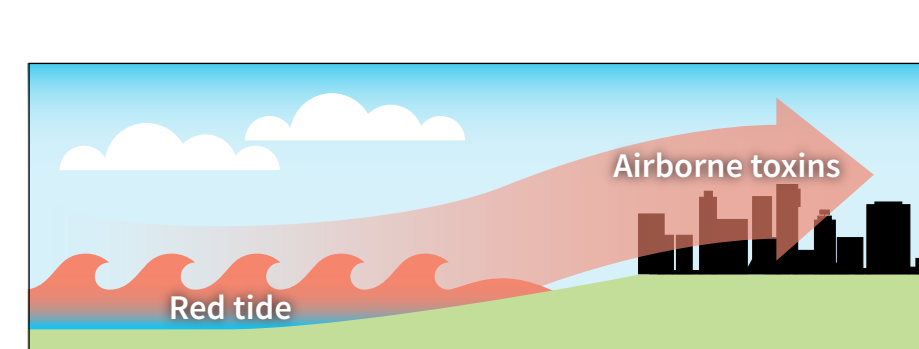
Photo: Don Ion/Audubon Photography Awards
 Early reports indicate that Black Skimmer chicks are significantly underweight for their age.

Threat to humans

Exposure to harmful red tide and algal blooms

INHALATION—Red tide and blue-green algae produce toxins that cause respiratory irritation. Winds and waves near algae blooms or red tide can cause toxins to become airborne and increase coughing and sneezing.

SKIN CONTACT—Some people experience rashes and burning eyes when swimming in or touching impacted waterways. Prolonged contact can damage internal organs such as the liver and lungs.



Economic impact

<p>HEALTH CARE A recent study found emergency room visits increase 50 percent during an algal bloom.</p>	<p>TOURISM Smell of dead fish, lack of beach access, and threat to health keep tourists away. Less demand for lodging, restaurants, and marine-based activities.</p>	<p>GOVERNMENT Cost of cleaning up beaches. Cost of rescuing animals. Cost of collecting scientific data on environment, tourism, and business.</p>	<p>SEAFOOD INDUSTRY Potentially devastating loss of fish and shellfish. Loss of markets due to consumer's fear of seafood.</p>	<p>PROPERTY VALUES Florida Realtors report that poor water quality caused by algae has significant negative impacts on home values, and these impacts hurt important tax revenue for local governments and schools.</p>
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Your choices can lessen algal blooms

<p>AVOID FERTILIZERS Choose native plants that use less water and require no fertilizer. They also provide habitat for birds and pollinators.</p> <p>Find native plants for your area by visiting our database tool at Audubon.org/PlantsForBirds</p>	<p>VOTE WISELY Support candidates and efforts that invest in and protect our precious water resources. Ask for local protections that support waterways. Expect state water protections to be well funded and enforced.</p>	<p>PROTECT AND RESTORE WETLANDS Wetlands absorb flood waters during heavy rainfall and also help clean nutrients from water. Wetlands are lost permit by permit and are difficult to regain.</p>	<p>RESTORE AMERICA'S EVERGLADES We must build the imminent Everglades Agricultural Area (EAA) Reservoir to hold and clean more water from Lake Okeechobee. North of the lake, we must slow and clean more water naturally in wetlands. We must send more water south where it is desperately needed.</p>
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Audubon's solutions to Florida's water crisis

<p>Building water infrastructure needed to restore the north-to-south flow of water through the River of Grass.</p>	<p>Investment in water quality projects and programs to clean excess nutrients from waterways.</p>	<p>Robust and reliable funding to prevent the starts and stops that hamper restoration efforts.</p>	<p>Restoring water management district budgets.</p>	<p>Serious investment in agricultural nutrient management plans to reduce nutrient loading into our waterways.</p>
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Cleaning our watershed will be a monumental effort but Audubon and its members have been successful at overcoming significant environmental challenges before.

www.audubon.org

Sources: Audubon, New York Times, NOAA, Florida Fish and Wildlife Conservation Commission, University of Texas Marine Science Institute, Palm Beach Post, Accuweather, CDC