How Big Sugar, Glyphosate, and Climate Change Are Contributing to Florida's Red Tide Disaster

Florida has declared a state of emergency. The latest outbreak of algae has been around for almost a year with no sign of reprieve. Marine life is dying, people are having trouble breathing, and the economy is being negatively impacted. Businesses from the most affected counties are reporting a loss of nearly $90 million. How is this happening and why is it so dangerous?

There are two separate issues. There is freshwater algae bloom in Lake Okeechobee, the state's largest lake. It's a recurring bloom, but this year the bloom came earlier in the year and it now covers 90% of the lake. This blue-green alga is actually a type of bacteria known as cyanobacteria. These bacteria proliferate rapidly in warm, slow-moving, nutrient-rich waters. It relies on sunlight to survive and normally it can't be seen by the naked eye. But it's so dense that it's easy to see in Lake Okeechobee. The bacteria, at this potency, produce dangerous toxins that kill wildlife and can make humans very sick.

In the southwest coast of the Gulf of Mexico, there is also the red tide, a term generally used to describe many different kinds of harmful algal blooms. This phenomenon happens all over the world, but along the coast of Florida, the most plentiful culprit is said to be algae called Karenia brevis. Red tide occurs naturally. There's evidence of this phenomenon from at least 500 years ago. In the last 50 years, the blooms have become more and more frequent, lasted longer, and the algae is in much higher concentrations.

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This bloom is said to be responsible for the deaths of thousands of fish, 92 manatees, 300 sea turtles, and at least one whale shark. The odor from the algae and the dead sea creatures are reportedly still potent at least 10 miles away from the beach.

What's causing both of these blooms today is a combination of environment and human activity.

The Farm Industry And Other Human Activities

The algae that cause Red Tide start growing dozens of miles offshore near the continental shelf. The blooms are not stimulated under normal conditions in open, well-circulating waters. But the conditions in the Gulf are not normal. Manmade chemical nutrients like nitrogen and phosphorus-based fertilizers, glyphosate, and other herbicides and pesticides from farms are contaminating the Gulf. The fertilizers are feeding the algae, and the chemicals are shifting the balance to the kinds of algae that are damaging the ecosystem. These fertilizers would feed different types of algae and provide a balance that would not be a problem for marine life or for us, but the lack of current and the glyphosates are favoring the wrong type of algae. Also, a faster-moving current would draw those manmade chemical nutrients out into the ocean, but the slowing Gulf Stream current leaves those fertilizers closer to the coastline, bringing the algae to the shore.

Farm water runoff is also feeding the problem in Lake Okeechobee, and the lake's ecosystem is also getting overwhelmed with runoff pollution from lawns (lawn fertilizer, weed killers) and septic systems from the surrounding communities. The lake provides the area with drinking water

and it’s the source of agricultural irrigation for their $1.5 billion-a-year farming industry. Production includes sugar, vegetables, citrus fruits, and rice. More people are moving in and their agriculture business is growing.

Lake Okeechobee had already become a toxic petri dish for many strains of nasty microorganisms before Hurricane Irma caused flooding and which precipitated more pollution runoff into the lake, radically overwhelming the ecosystem.

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Sugar

For 6,000 years, water from Lake Okeechobee flowed through the Everglades and then out into the Florida Bay. The sugar industry needed more farmland so the excess water that drained into the Everglades was diverted into the east and west coasts.

The same fertilizer used to grow sugar cane and other crops feed algae in the lake and also runs off into the ocean on both sides of Florida.

Big Sugar says that they are not responsible for most of the nutrients in the lake, which is true. A government report traced 10 percent of the phosphorous in Lake Okeechobee back to sugar farms in 2011. But the problem is not so much their fertilizer usage as it is their use of the land in the Everglades. Environmentalists want the sugar industry to return the land to the state so that the water can flow through and naturally be filtered by the Everglades.

> *Wetlands are very good at taking up those nutrients, so you have nice clean water released out of the wetlands. The problem is now the northern third of the Everglades has been drained and turned into these sugar cane fields. That’s what forces engineers to release the water to the east and the*

> *west.” – Dr. Brand*

It’s easier said than done. The everglade land is some of the most fertile soil in the United States. If sugar cane crops are grown elsewhere in the U.S. there would most likely be a significant increase in fertilizer usage. In addition, the federal sugar subsidy stops American companies from buying sugar from other countries.

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Glyphosate

Dr. Seneff says that the cyanobacteria causing the “algae” bloom in the lakes have the ability to break down glyphosate and use its phosphorus. This gives the cyanobacteria a competitive advantage against other species in a body of water contaminated with lots of glyphosates. In an interview she states:

> *There are a lot of sugar cane fields surrounding Lake Okeechobee in Central Florida, and they are being sprayed with glyphosate before harvest as a desiccant. There’s also lots of glyphosate being used on those well-manicured lawns of multi-million dollar homes.”*
>
> *Blue-green algae are always present in the mix, but without glyphosate, they don’t grow to such huge concentrations compared to the competing flora.”*

In that same interview, the interviewer says that officials claim that the blue-green algae have nothing to do with the red tide, and asks Dr. Seneff what she thinks of this.

> *No, I don’t believe this! Again, very straightforward. The blue-green algae (cyanobacteria) are able to convert free nitrogen from the air into nitrates. Thus, they cause an*

> *excess of nitrates in the water, in addition to those nitrates that come from excess run-off from nitrate-based fertilizers. The excess nitrates provide essential nutrients for the red algae (Karenia brevis), that then grow to large numbers offshore, causing the red tide.” — Dr. Stephanie Seneff, Mom’s Across Amarica Interview*

Ecowatch also reported on this phenomenon in 2016.

> *“It turns out that many cyanobacteria present in Lake Erie have the genes allowing the uptake of phosphonates, and these cyanobacteria can grow using glyphosate and other phosphonates as a sole source of phosphorus,” George Bullerjahn of Bowling Green State University, Ecowatch inteview*

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Climate Change

According to a new study, an Atlantic Ocean current has slowed down, reaching a 1,000-year low. This reduces the movement of the water in the Gulf of Mexico. The Atlantic Ocean and the Gulf of Mexico are becoming warmer and more stagnant. Warmer oceans also mean more torrential downpours with the potential for more frequent flooding and greater agriculture chemical runoff.

As the planet’s temperatures increase, many water systems become more hospitable to toxic algal blooms. The temperature of the ocean has increased by about 2 degrees since the year 1900. The temperature in the Gulf of Mexico is also climbing more rapidly, but it should be too warm for K. brevis, which thrives in water temperatures up to 83 degrees. The gulf can reach temperatures of 90ºF in warmer months like July and August. But new research shows that increased carbon dioxide allows the algae to grow and proliferate at higher

temperatures. As anyone concerned with the state of our environment knows, we are massively increasing the levels of carbon dioxide in the air.

Conclusion

Experts say they have no idea when the toxic algae blooms will end. We also don't yet know if this one will last longer than previous episodes. Many believe that the frequency of the red tide has increased, but historical records are not accurate enough to indicate for sure that the red tides are definitely more prevalent. This bloom Florida is dealing with now started in November of 2017. At the time of this article, it has lasted for a little more than ten months. From late 2004 to early 2006 there was a 17-month long red tide in southern Florida, and a few years previous there was one that lasted for 21 months.

Sources:

- *How Climate* change *is Making Red Tide* Algae *Blooms Even Worse* – Washington Post
- *Florida's unusually long red tide is killing wildlife, tourism, and businesses* – Washington Post
- *Sugarcane Production in the U.S. by State* – Statista
- *Climate Change Indicators: Sea Surface Temperature* – EPA
- *Atlantic Ocean Current Slows Down To 1,000-Year Low, Studies Show* – NPR