

Harmful Algal Blooms (HABs) occurring in Florida

General Information

	Red Tide (<i>Karenia brevis</i>)	Blue-Green Algae
What are they?	In Florida, red tide is caused by a naturally occurring microscopic alga (a plant-like microorganism) called <i>Karenia brevis</i> or <i>K. brevis</i> . These organisms cannot live in the same environment. They are uniquely adapted to salt levels in the water	There are multiple blue-green algae species that occur in Florida with most blooms composed of the microscopic alga, <i>Microcystis aeruginosa</i> . Most of us know them as "pond scum." These kinds of organisms are naturally occurring in Florida's environment and are also found all over the world.
Where are they found?	Red tide occurs in marine and estuary environments such as the Gulf of Mexico.	Blue-green algae occurs mainly in freshwater environments and brackish habitats (lakes, rivers and estuaries).
What do they look like?	Red tide may discolor the water, sometimes red, light or dark green, brown or the water may appear clear.	Some blue-green algae blooms can look like foam, scum, or mats on the water surface. Algae blooms are easy to see because many types float on top of the water and come in colors including green, brown, and red. The only way to know which type of cyanobacteria is present is to test a sample in a competent environmental laboratory.
Who is the lead agency?	The Florida Fish and Wildlife Conservation Commission (FWC) is the lead agency for marine issues including where red tide is found, its ecology, and testing for the organism.	The Florida Department of Environmental Protection (FDEP) is the lead agency for oversight of fresh water, including where blue-green algae is found, its ecology, and testing for the organism.
How do they move and where are they currently located?	Red tide concentrations are patchy in nature and will vary in location based upon ocean currents, wind speed and direction. Conditions can change quickly. To check current red tide status visit: http://myfwc.com/research/redtide/statewide/ Mote Marine Laboratory's web site at www.visitbeaches.org or The National Oceanic and Atmospheric Administration web site at www.tidesandcurrents.noaa.gov/hab/gomx.html	Blue-green algae blooms tend to shift by place and time as they move around due to wind, waves and currents. Conditions can change quickly. Current bloom information can be found at www.floridadep.gov/AlgalBloom

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Human Health Information

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Do they contain toxic chemicals?	<i>K. brevis</i> produces a toxin that can kill fish and cause respiratory problems in humans. It can also cause illness when contaminated molluscan shellfish are consumed. The illness is called Neurotoxic Shellfish Poisoning (NSP).	Some blue-green algae produce chemicals called cyanotoxins. However, not all blooms are toxic and concentrations in the blooms are variable. As algae in a cyanobacterial bloom die, the water may smell bad.
How do we get exposed?	The most common route of exposure is breathing red tide aerosols. People in coastal areas near the shoreline may experience varying degrees of eye, nose, and throat irritation.	The main exposure route in Florida for blue green algae is through inadvertent ingestion of surface water through recreational activities. Since the drinking water in Florida mainly comes from groundwater which does not contain blue green algae, serious health impacts should not be a concern for most people.
Can we get sick?	While people swim in red tide, some individuals may experience skin irritation and burning eyes.	Drinking water that contains high amounts of cyanobacteria toxins can affect the liver, nervous system and skin. Abdominal cramps, nausea, diarrhea, and vomiting may occur if untreated surface water is swallowed.
Chronic illnesses associated with red tide and blue-green algae blooms are still being researched.		

Recommendations to Be Safe During Blooms

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What can we do to be safe?	People with chronic respiratory problems should avoid red tide areas. When a person leaves an area with red tide, symptoms usually go away. If symptoms persist, please seek medical attention. People with severe or chronic respiratory conditions such as asthma or chronic lung disease are cautioned to avoid areas with active red tides, especially when winds are blowing on shore.	Cyanobacteria toxins from blue-green algae do not aerosolize to significant amounts other than through misting such as that caused by recreational activities like jet skiing or power boating. Limit occupational or recreational activities (i.e. power boating or skiing) in the bloom that create mist.

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	People usually get relief from respiratory symptoms by being in air-conditioned spaces. This is also true when driving: keep your car windows up and the A/C or heat on.	
What about swimming?	If your skin is easily irritated, avoid red tide water. If you experience irritation, get out of the water and thoroughly wash off with fresh water.	Do not swim in blue-green algae blooms. If you come in physical contact with the bloom, wash off with soap and water.
What about eating seafood?	Seafood from commercial retailers including restaurants, fish markets, and grocery stores is monitored and is safe to eat.	Fish tested from water with blue-green algae blooms show that the cyanotoxins from algae do not accumulate much in the edible portion of fish /fillet meat. We do suggest that people do not harvest fish near or in the blooms.
	With red tide, shellfish such as crabs, shrimp, and lobster can be eaten because they do not concentrate the toxin. Do not eat the tomalley - the green digestive gland - of shellfish. Finfish caught live and healthy can be eaten if filleted and rinsed thoroughly. For more information, visit http://www.floridahealth.gov/environmental-health/aquatic-toxins/_documents/red-tide-rack-card-2014-english-2484kb.pdf	
What about harvesting clams, oysters, and mussels?	Shellfish like clams, oysters, mussels, and coquinas that are harvested from areas near or in active red tides should not be eaten. These shellfish are filter feeders that can concentrate the toxins causing Neurotoxic Shellfish Poisoning (NSP). The Florida Department of Agriculture and Consumer Services (DACS) is responsible for management of shellfish harvesting areas including when they are closed due to red tide blooms. Before collecting clams and oysters, please review local harvesting information at www.freshfromflorida.com/Divisions-Offices/Aquaculture?original_host=www.floridaaquaculture.com/seas/seas_shamap.htm	

Reporting and Resources

	Red Tide (<i>Karenia brevis</i>)	Blue-Green Algae
How do I report blooms or find the current location of a bloom?	<p>Florida Fish and Wildlife Conservation Commission (FWC) monitors red tide and provides regular status updates on red tide locations in Florida. Red tide status can be found on FWC's website at: http://myfwc.com/research/redtide/statewide/ or by calling 866-300-9399.</p> <p>Fish kills can be reported to FWC by calling 800-636-0511 or through http://myfwc.com/fishkill.</p>	<p>Florida Department of Environmental Protection (DEP) conducts sampling of blue-green algae. Call 855-305-3903 or visit the DEP's web site https://floridadep.gov/AlgalBloom.</p>

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	<p>Red tide status information can also be reported and found using the Mote CSIC app for Android and Apple iPhones. This app provides real-time reports on locations and allows users to report blooms, health conditions, and fish kills. You can also visit Mote Marine Laboratory's web site at www.visitbeaches.org.</p>	
How do I report health issues?	<p>To report health issues, call the Poison Control Hotline at 1-800-222-1222. Health professionals including doctors, nurses, and toxicologists are available 24 hours a day, 365 days per year.</p>	
Who evaluates the human health effects from the blooms?	<p>The Florida Department of Health provides information to residents, visitors, health care workers and all interested parties on health-related topics. This includes evaluating health impacts from red tide and blue-green algae.</p>	
	<p>As part of its ongoing efforts to inform Florida's residents and visitors, the Department of Health is partnering with the Centers of Disease Control and Prevention, the Gulf of Mexico Coastal Ocean Observing System and the Mote Marine Laboratory to design and implement an air study on the transportation of red tide aerosols from coastal areas to inland communities.</p>	<p>The Department of Health is currently designing a study to assess hydrogen sulfide in areas impacted by blue-green algae and coordinating with the Florida Department of Environmental Protection (DEP) to simultaneously collect and analyze water samples.</p>
	<p>The Department continues to monitor emergency room visits and Florida Poison Control Center data for any increase in respiratory visits to help the department determine the need for additional outreach and education to affected communities. Respiratory reports can be found at http://www.floridahealth.gov/environmental-health/aquatic-toxins/health-reports.html. These reports are updated weekly.</p>	
Who posts advisory signs?	<p>The Department of Health provides health advisory signs and resources. Posting and maintenance of the signs is a concerted effort between local city and county government, community partners and the state.</p>	
Are there any funds to address these blooms?	<p>Governor Rick Scott announced that the State of Florida will direct a \$2,178,000 investment to test innovative technologies to mitigate the effects of red tide utilizing specialized clay field experiments and other innovative approaches for controlling and mitigating the impacts of red tide including expansion of Mote Marine Laboratory's Ozone Treatment System.</p> <p>To view a breakdown of the funding and to view the Governor's announcement, click here.</p>	
Additional resources	<ul style="list-style-type: none"> • www.floridahealth.gov/algaeblooms • www.floridahealth.gov/redtide • http://www.floridahealth.gov/environmental-health/aquatic-toxins/cyanobacteria.html • www.cdc.gov/habs/index.html 	