HARMFUL ALGAL BLOOMS

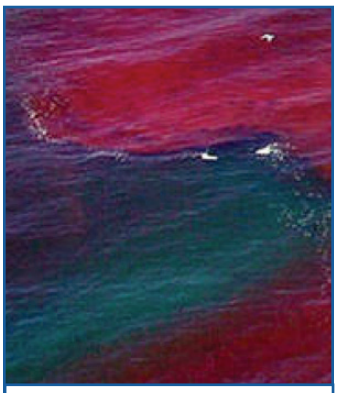
About Algal Blooms

Algae are a natural part of the ocean ecosystem. Algae become a concern when overabundant or in large colonies, also known as algal blooms, which are caused by multiple factors: high temperatures, stagnant water, high levels of nutrients and changes in salinity levels.

Harmful algal blooms occur when large colonies of algae produce toxins that have negative effects on marine mammals, shellfish, fish, seabirds and humans. The type of algae responsible for algal blooms are phytoplankton and cyanobacteria.

About Red Tide

A red tide, or harmful algal bloom, is a higher-than-normal concentration of a microscopic algae (plantlike organism). In Florida and the Gulf of Mexico, the species that causes most red tides is Karenia brevis, often abbreviated as K. brevis. To distinguish K. brevis blooms from red tides caused by other species of algae, researchers in Florida call the former the Florida red tide. Many red tides produce toxic chemicals that can affect both marine organisms and humans. The Florida red tide organism, K. brevis, produces brevetoxins that can affect the central nervous system of fish and other vertebrates. Wave action can break open K. brevis cells and release these toxins into the air, leading to respiratory irritation.



Karenia brevis bloom, also known as "red tide." Photo: NOAA National Ocean Service

Using satellite images and local water sampling, the National Oceanic and Atmospheric Administration provides a harmful algal bloom forecast for regions of Florida and other Gulf states.

About Blue Green Algae

Blue-green algae, or cyanobacteria, is a type of algae found naturally in freshwater environments. This algae, is a microorganism that functions like a plant in that it feeds through photosynthesis and derives its energy from the sun. Blue-green algae can be found all over the world and occur in Florida's freshwater and brackish habitats, such as lakes, rivers and estuaries.

Although blue-green algae are found naturally, increases in nutrients can exacerbate the extent, duration and intensity of blooms. Other factors that contribute to blooms include high temperatures, reduced water flow, and lack of animals that eat algae. Although they can occur at any time, blue-green algae are most common during summer and early fall with Florida's high temperatures and abundant sunlight. The summer also brings storms that have the potential to deliver nutrients into waterways through stormwater runoff.

Cyanobacteria algal bloom in Martin County, summer 2016. Photo: Kathy Fitzpatrick, Martin County

Some – not all – blue-green algae can produce toxins that contribute to environmental problems and affect public health. Little is known about exactly what environmental conditions trigger toxin production. Over time, these toxins are diluted and eventually break down and disappear. Nontoxic blooms also can harm the environment by depleting oxygen levels in the water column and reducing the amount of light that reaches submerged plants.

The nature of most freshwater algal bloom events makes it difficult to predict where and when a bloom will occur or how long it will last. However, lessening the negative effects of algal blooms is possible through restoration work to improve water quality by reducing nutrients.

Report algal blooms to Southeast Florida Action Network (SEAFAN) online or call 866-770-7335.

It is impossible to determine algal identification and toxicity simply by sight. All algal bloom observances should we reported.