

## NEW AND EMERGING HABS

### 1) *Pfiesteria* and the *Pfiesteria*-Like Organisms (PLOs)

*Pfiesteria piscicida* is a microscopic marine organism discovered in a laboratory in North Carolina in 1991. *Pfiesteria*-like organisms (PLOs) are similar to *Pfiesteria* genetically and morphologically and both are found in estuaries. Associations have been made between these organisms with fish kills and fish lesions.



Lab workers believed to be exposed to high levels of *Pfiesteria piscicida* reported many symptoms, however PLOs have not yet been associated with human illnesses.

### 2). Cyanobacteria or Blue Green Algae

Cyanobacteria are found growing on marine, brackish and fresh waters, including surface sources of drinking water. Similar to the marine HABS, cyanobacteria periodically bloom, decrease oxygen in the water, cause fish kills and can significantly impact the environment. Blue green algal blooms can also produce significant quantities of natural toxins, which can cause illness in humans and animals.



More information available in the World Wide Web at:

[www.rsmas.miami.edu/groups/niehs/](http://www.rsmas.miami.edu/groups/niehs/)

<http://pediatrics.med.miami.edu/FPIC/index.html>

[www.doh.state.fl.us](http://www.doh.state.fl.us)

[www.cdc.gov](http://www.cdc.gov)

[www.floridamarine.org](http://www.floridamarine.org)

[www.dep.state.fl.us](http://www.dep.state.fl.us)

[www.niehs.nih.gov](http://www.niehs.nih.gov)

<http://www.bigelow.org/hab/human.html>



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## Harmful Algal Blooms and Human Health



## HARMFUL ALGAL BLOOMS

**Overview-** Harmful Algal Blooms (HABs) are due to the proliferation of minute marine organisms, dinoflagellates, diatoms and blue green algae.

A HAB is defined as a bloom that has deleterious effects on plants, animals or humans, often due to the production of natural toxins.

HABs are a natural phenomenon and have been occurring for centuries. In the recent years, HABs appear to be more frequent and extensive, both in the US and worldwide.

Impacts on natural resources due to HABs have been documented for decades, most particularly with Florida Red Tides. Among the many problems HABs can produce are marine and fresh water diseases such as:

**Ciguatera Fish Poisoning**

**Neurotoxic Shellfish Poisoning (NSP)**


**Brevetoxin/Respiratory Irritation (B/RI)**

**Pfiesteria/Pfiesteria Like Organisms (PLOs)**

**Cyanobacteria (Blue Greens)**

These illnesses should be reported to the Florida Poison Information Center and the local Health Department for investigation.

**Marine and Freshwater Toxin  
Disease Reporting Hotline**

 **1-888-232-8635**

Florida Poison Information Center

## CIGUATERA

Ciguatera poisoning is a gastrointestinal illness with sometimes chronic, neurologic manifestations, caused by the consumption of contaminated reef fish.

It is the most commonly occurring illness due to a marine toxin, Ciguatoxin, and it is reported worldwide. In general, the larger the fish, the greater the potential for Ciguatera.

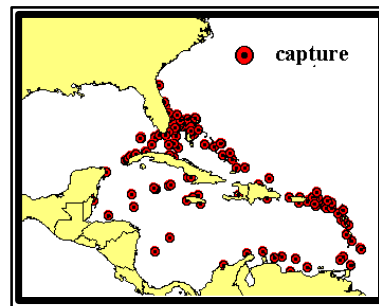


### Potentially Toxic Fish:

Barracuda  
Snapper  
Grouper  
Amberjack  
Other reef fish

**Symptoms:** Nausea, vomiting, diarrhea, irregular heart beats, temperature reversal, tingling in hands and feet.

**Treatment:** Seek medical assistance (ask about intravenous Mannitol). Avoid consuming alcohol, fish, nuts, caffeine, and chocolate.



Reported landings of fish causing ciguatera in the Caribbean.

## FLORIDA RED TIDE

Red tide is the result of the multiplication of a single-celled algae called *Karenia brevis* (formerly known as *Gymnodinium breve*). It is a natural phenomenon, apparently unrelated to man-made pollution. Red tides can cover several hundred to thousands square miles of water. In Florida, red tides are a frequent occurrence, and *K. brevis* blooms are generally a natural part of the organism's growth cycle.



*K. Brevis* makes a toxin called brevetoxin, which can cause massive fish kills, and illness in humans and animals. Humans get ill from consuming contaminated shellfish and from inhaling brevetoxin suspended in sea spray. *K. Brevis* has been associated with two medical conditions: Neurotoxic Shellfish Poisoning and Respiratory Irritation from aerosolized brevetoxin.

Neurotoxic Shellfish Poisoning	Brevetoxin/Respiratory Irritation
<b>Cause:</b> Consumption of contaminated shellfish	<b>Cause:</b> Inhalation of toxic aerosol in contaminated water
<b>Symptoms:</b> Diarrhea, vomiting; shortness of breath; tingling extremities	<b>Symptoms:</b> Coughing, eye irritation, sneezing, runny nose, shortness of breath
<b>Treatment:</b> Seek medical attention	<b>Treatment:</b> Leave beach area, seek air conditioning
<b>Prevention:</b> Once a red tide has been reported, shellfish beds are closed	<b>Prevention:</b> Use of surgical mask