

# PUBLIC OUTREACH MATERIALS REGARDING HARMFUL ALGAL BLOOMS AND THEIR POSSIBLE EFFECTS ON HUMAN HEALTH

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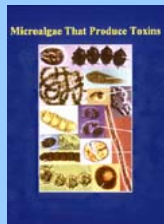
## ABSTRACT

The potential interactions between marine and freshwater harmful algal blooms (HABs) and humans are increasing. Humans are exposed through food, drinking water, and recreational and occupational water use to an increasing number of organisms and their toxins. Nevertheless, the amount of clinical and epidemiologic research concerning acute and chronic human health effects from the HAB organisms and their toxins is relatively sparse. At the same time, the public is increasingly aware of and interested in the potential dangers associated with exposure to HABs. Public health authorities and researchers must respond to these public health concerns.

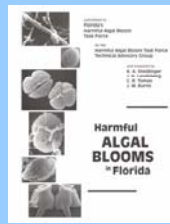
The development of appropriate educational and outreach materials based on limited scientific databases is the challenge of informing the public concerning the possible human health effects of HAB organisms and their toxins, disease surveillance, and their prevention. Educational materials developed by a group of researchers and public health personnel for general HABs, Florida Red Tide Toxins (brevetoxins), Cyanobacteria, and Ciguatera are discussed, as well as methods for their dissemination.



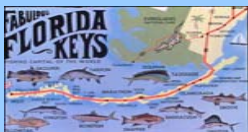
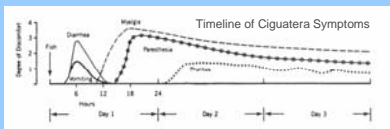
**Marine and Freshwater Toxin Disease Reporting Hotline**  
**1-888-232-8635**  
**Florida Poison Information Center**



For more information :  
[www.mote.org](http://www.mote.org)  
[www.cdc.gov](http://www.cdc.gov)  
[www.doh.state.fl.us](http://www.doh.state.fl.us)  
[www.floridamarine.org](http://www.floridamarine.org)  
[www.rsmas.miami.edu/groups/niehs/](http://www.rsmas.miami.edu/groups/niehs/)  
[www.pediatrics.med.miami.edu/FPIC/](http://www.pediatrics.med.miami.edu/FPIC/)  
[www.bigelow.org/hab/human.html](http://www.bigelow.org/hab/human.html)  
[www.redtide.who.edu/hab/](http://www.redtide.who.edu/hab/)

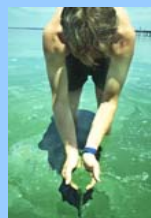


**Ciguatera Fish Poisoning**  
**Exposure:** Food (Large Reef Fish)  
**Where:** Marine Waters  
**What:** Neurotoxins (Ciguatoxin)  
**Health Effect:** Ciguatera Fish Poisoning  
**Outreach:** Brochures, Maps



**Blue Green Algae (Cyanobacteria)**  
**Exposure:** Skin, Aerosol, Drinking Water, Food  
**Where:** Fresh & Marine Waters  
**What:** Neurotoxins, hepatotoxins, dermatotoxins  
**Health Effect:** domestic animal deaths; unknown human  
**Outreach:** "HAVE YOU BEEN SLIMED" Educational Campaign, Q&A, Posters, Magnets, Key Chains

**Have you been "slimed"?**  
 Contact with blue-green algae can make you sick.  
 Symptoms include:  
 • skin rash  
 • muscle aches  
 • irritated eyes  
 • difficulty breathing  
 • nausea/vomiting or diarrhea  
 • upset stomach  
 • swollen joints



**Florida Red Tide (Brevetoxins)**  
**Exposure:** Skin, Aerosol, Drinking Water, Food  
**Where:** Marine Waters  
**What:** Neurotoxins (Brevetoxin)  
**Health Effect:** Neurotoxic Shellfish Poisoning (NSP), Aerosolized Red Tide Toxins  
**Outreach:** Brochures, Posters, Handouts, Visors, Key Holders

