



Harmful Algal Blooms and Hypoxia Overview

Harmful Algal Blooms or HABs are a growing problem along U.S. coasts. They can come from microscopic single celled organisms or macroscopic seaweed, and have two methods of disruption. First, some HABs produce toxins that can directly kill fish, shellfish, birds, and marine mammals. By eating fish or shellfish contaminated by toxic algae or by inhaling airborne toxins, people can become sick, and in rare instances, die. The second mechanism for harm is through biomass accumulation that can alter marine habitats by blocking light, clogging fish gills or depleting the dissolved oxygen in water such that an area becomes an uninhabitable "dead zone" (hypoxia). Both toxic and non-toxic species of algae can cause hypoxic events. They also impact the U.S. and world economies through fishery closures, tourism losses, human health care requirements and cleanup and removal costs. In fact, NOAA estimates that HABs in United States waters are now costing us \$82 million per year, including:

- Commercial fisheries impacts: \$38 million
- Recreation and tourism impacts: \$4 million
- Coastal monitoring and management: \$3 million
- Public health costs: \$37 million

Over the past three decades, harmful algae have begun to bloom more frequently and with greater intensity. Algae growth is influenced by light, water temperature, salinity and nutrient availability, but the factors driving HABs are less well understood. They can occur in salt and fresh water, and now appear along almost all U.S. coasts, including the Great Lakes. Some particularly bad recent cases include:

- In 2005, New England experiences its most severe bloom since 1972, causing an estimated \$23 million in damages to the shellfish industry alone. Severe blooms also occurred in '08 and '06.
- Red Tides along the Gulf coast of Florida cost an estimated \$19 to \$32 million each year.
- In 2002-2003 a bloom caused a season long closure of the Pacific Northwest razor clam fishery, resulting in \$10 - \$12 million in lost revenue.
- Algal blooms off the Maui coast cost \$20 million a year in lost revenue and clean up requirements.
- Spring and summer often present fertile conditions for HAB growth. Ocean Champions will keep a **list of 2009 outbreaks** as they are reported.

Ocean Champions has made the case that America needs a national strategy to address HABs. With your help we have been heard and now you can help us pass a law for just such a strategy. Two of our Ocean Champions in the Senate (Senators Snowe and Nelson), have introduced the Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2009. A similar bill is expected in the House very soon. The Senate bill, which already has bipartisan support from key Senators hailing from both coasts as well as from the Gulf of Mexico and the Great Lakes, will authorize significant funds for research, monitoring, prevention, mitigation and control. It will enable development and implementation of regional coalitions, response plans, strategies and tools for beating HABs. To take action, go to: http://salsa.wiredforchange.com/o/1145/t/4478/campaign.jsp?campaign_KEY=2757

We'll keep you up to date as the HABs bills progresses. In addition, check out these links for a more thorough understanding of Harmful Algal Blooms:

- The Woods Hole Oceanographic Institute's Harmful Algae Pages: <http://www.whoi.edu/redtide/>
- NOAA's National Ocean Service Harmful Algal Blooms Pages: <http://oceanservice.noaa.gov/topics/coasts/hab/>
- Surfrider Foundation's Coastal A to Z: http://www.surfrider.org/a-z/red_tide.php

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