

Turning the Tide on Red Tide: Causes & Consequences

If you've ever noticed the waters of Pleasant Bay looking a bit off-color or caught a whiff of something fishier than usual, you might have stumbled upon a red tide. Despite the dramatic name, these events aren't actually "tides" at all, but blooms of microscopic algae.



While red tide is more commonly associated with warmer waters like the Gulf of Mexico, it can still make an appearance in our local waters. These blooms, often driven by warm temperatures, nutrient-rich runoff, and calm seas, can turn the water reddish-brown and release toxins that are harmful to marine life, irritating to humans, and potentially dangerous to shellfish eaters. So, why does it happen, and what can it mean for our beautiful bay? Let's break it down.

Red tide is a natural phenomenon caused by the rapid growth of certain types of algae, primarily dinoflagellates like *Alexandrium*, in coastal waters. Despite the name, red tide isn't always red – it can also appear brown, green, or even clear, depending on the species involved. While these blooms are a natural part of marine ecosystems, they can have significant ecological, economic, and public health impacts.

What Causes Red Tide? Several factors contribute to red tide formation, including nutrient-rich waters, warm temperatures, calm seas, and specific ocean currents. Locally, runoff from fertilizers, sewage, and other human activities can intensify these blooms, providing the nutrients these algae need to thrive.

What are the Impacts on Marine Life and Human Health? Red tide can produce potent neurotoxins, like saxitoxin, which can accumulate in filter-feeding shellfish such as clams, mussels, and oysters. Consuming contaminated shellfish can lead to paralytic shellfish poisoning (PSP) in humans, a serious and sometimes fatal condition. The toxins can also cause large-scale fish kills, respiratory irritation in humans, and even disrupt marine mammal populations.

What About Red Tide on Cape Cod? The Pleasant Bay area is occasionally impacted by red tides, which can lead to temporary shellfish bed closures and economic strain on local fisheries. These blooms are closely monitored by local authorities to protect both public health and the coastal economy.

Staying Safe and Informed To reduce your risk, always check local shellfish advisories and avoid harvesting during active blooms. Below are websites for state and local shellfish advisories:

- Massachusetts Division of Marine Fisheries: dmf.shellfish@mass.gov
- Chatham: chatham-ma.gov/327/Shellfish-Division
- Orleans: town.orleans.ma.us/435/Shellfish-Harbormaster
- Harwich: harwich-ma.gov/1282/Shellfish-Information
- Brewster: naturalresources@brewster-ma.gov