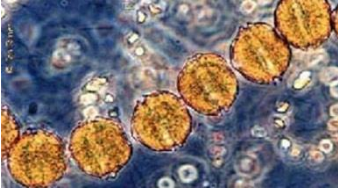


## HABS Phytoplankton Key

Species: *Alexandrium* spp.

Type: Dinoflagette

Causes: Paralytic Shellfish Poisoning



Eating shellfish contaminated with **saxitoxins**, a toxin produced by dinoflagellates of the genus *Alexandrium*, can cause serious illness in humans. Saxitoxins cause symptoms related to the nervous system. These toxins can be found in shellfish (such as mussels, cockles, clams, scallops, oysters, crabs, and lobsters) that usually live in the colder coastal waters near the Pacific states and New England.

Species: *Karenia brevis*

Type: Dinoflagette

Causes: Neurotoxic Shellfish Poisoning

*Karenia brevis* can cause sickness in humans, lasting several days. Although not fatal to humans, neurotoxic shellfish poisoning is known to kill fish, invertebrates, seabirds, and marine mammals (e.g., manatees).

It is caused by the **brevetoxin** family of toxins and is prevalent in waters off of Florida and the Gulf of Mexico. The main contamination problems include oysters, clams, and other filter feeders.

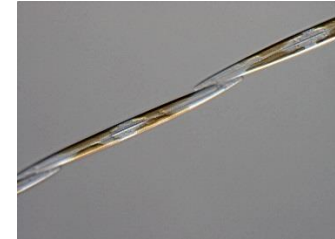
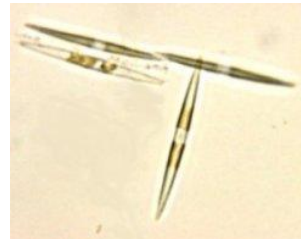


Species: *Pseudo-nitzschia* sp.

Type: Diatom

Causes: Amnesic Shellfish Poisoning

**Domoic acid** is a marine biotoxin which is produced by the diatom *Pseudo-nitzschia* species, a type of naturally occurring microscopic algae. People can become ill from eating shellfish that retain and accumulate this toxin.



Species: *Dinophysis acuminata* and *Prorocentrum* spp.

Type: Dinoflagette

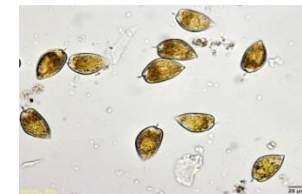
Causes: Diarrhetic Shellfish Poisoning



*Dinophysis acuminata* and species of *Prorocentrum* produce a neurotoxin known as **okadaic acid**. Ingestion of shellfish that have accumulated these toxins from harmful algal blooms causes illness in humans. Cooking or freezing contaminated shellfish will not eliminate the toxins.



Dinophysis



Prorocentrum