

# Shellfish

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Connecticut's Long Island Sound supports a successful and safe hard clam and eastern oyster commercial aquaculture industry. Some towns additionally have recreational beds that support eastern oyster, hard clam, steamer, razor clam, surf clam, blue mussel, whelk, and bay scallop harvesting.

Shellfish aquaculture is a green industry because oysters and clams are filter feeders. Filter feeders remove particulates, excess nutrients, organic material, phytoplankton, viruses, and bacteria from the water column, improving water quality and clarity.

Some phytoplankton produce toxins that can accumulate in shellfish tissue, potentially sickening or killing consumers in severe cases. The CT Bureau of Aquaculture closely monitors toxin-producing phytoplankton in growing waters and toxin levels in shellfish tissue. No toxin-related illnesses have ever been reported from CT shellfish.

All marketed shellfish and other seafood products are safe to consume. Any growing area with a potential toxin threat is closed to shellfish harvesting. In the U.S., consumers that illegally harvest shellfish from closed recreational beds are most often affected by toxins that have accumulated in shellfish tissue.



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# Paralytic Shellfish Poisoning (PSP)

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*This brochure was created for the continued safety of Connecticut shellfish and as an educational resource.*

# What is paralytic shellfish poisoning (PSP)?

Paralytic shellfish poisoning describes a syndrome associated with the consumption of shellfish contaminated with saxitoxin.

Saxitoxin is a potent neurotoxin. Symptoms of PSP can include tingling, numbness, or burning in the extremities or mouth; a lack of coordination; drowsiness; fever; and rash. Individuals may also experience nausea, vomiting and diarrhea. In severe cases, PSP can result in respiratory arrest and death.

Saxitoxin cannot be removed from shellfish by cooking, freezing, or other post-harvesting processes. Toxins do not alter the taste, smell, or appearance of shellfish.

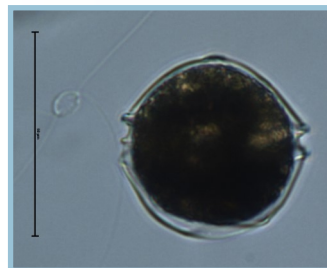
There is no antidote for PSP. While patients typically fully recover from PSP, they may require supportive care, artificial respiration and/or CPR. You should call 911 immediately if any of the PSP symptoms are observed after consuming shellfish. Any suspected PSP cases should be reported to the CT Bureau of Aquaculture.

# What causes paralytic shellfish poisoning (PSP)?

Phytoplankton are microscopic and are not visible to the naked eye; however, they can discolor the water when they “bloom” during favorable environmental conditions.

Alexandrium species are a type of phytoplankton that produce saxitoxin, the neurotoxin that causes PSP. Alexandrium species are naturally occurring in New England and Long Island Sound, and are commonly known as New England red tide due to the water discoloration they can cause when blooming.

Similar to how plants produce seeds that can germinate the following spring, Alexandrium species can form hardy cysts. These cysts settle in the ocean sediment and can germinate when conditions become ideal, allowing for annual Alexandrium blooms in some areas of New England. Alexandrium species typically bloom in the late spring/early summer in New England.

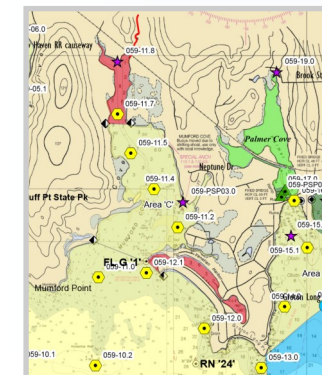


(left) A Alexandrium cell is shown next to a scale bar. The size of phytoplankton is measured in micrometers (1 million micrometers = 1 meter).

# History of Paralytic Shellfish Poisoning (PSP) in CT

CT has consistently supported a safe shellfish industry. Since initiating phytoplankton monitoring in the 1980's, CT has only had PSP closures in Groton, CT in 1985, 1992, and 2003. Both Mumford Cove and Palmer Cove have a short PSP history due to the presence of a small number of Alexandrium cysts in their sediments. No toxin-related illnesses have ever been reported from CT shellfish.

The CT Bureau of Aquaculture staff regularly screen Mumford and Palmer Coves during the spring and summer for the presence of Alexandrium species in the water column and saxitoxin levels in shellfish tissue. With a history of sporadic and rare PSP closures, monitoring is critical because a bloom could occur any year.



(left) The shellfish bed classification map is showing Mumford Cove and Palmer Cove in Groton, CT. Both coves have a short history of PSP-related closures.