

Amnesic Shellfish Poisoning

Pseudo-nitzschia seen under a microscope. Photo credit: Associated Press

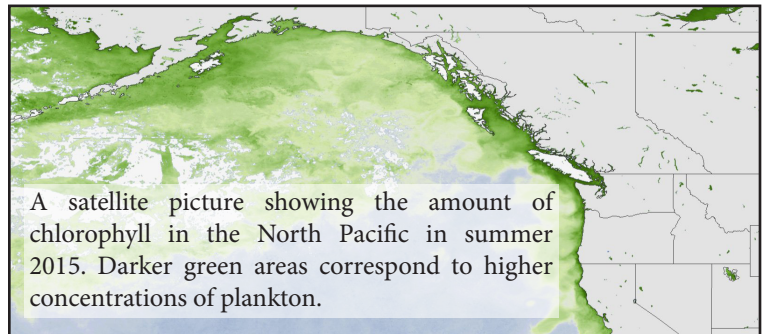
What is Amnesic Shellfish Poisoning?

Amnesic Shellfish Poisoning (ASP) is caused by domoic acid, a toxin produced by marine phytoplankton known as *Pseudo-nitzschia*. When shellfish filter out large amounts of domoic acid and *Pseudo-nitzschia*, they can become contaminated with enough toxin to cause ASP. Humans then get ASP by eating those contaminated shellfish (including clams, mussels, oysters, and crabs).

Symptoms of ASP develop within 48 hours and include vomiting, nausea, and diarrhea. Symptoms for more severe cases include headaches, dizziness, confusion, and permanent short-term memory loss. In rare cases, ASP can lead to coma and death. There is no antidote for domoic acid, but patients with ASP should be taken to a hospital for supportive medical care until the toxin passes through their system.



A sea lion poisoned with domoic acid seizes on a California beach. Thousands of sea lions were sickened during a long-lasting *Pseudo-nitzschia* bloom in 2015.



A satellite picture showing the amount of chlorophyll in the North Pacific in summer 2015. Darker green areas correspond to higher concentrations of plankton.

Deadly Myths

- **Shellfish are safe to eat during months containing the letter “r”.** In November 2015, the entire California crab fishery was shut down due to high levels of domoic acid.
- **If the water is clear, there is no danger of shellfish poisoning.** Many harmful algal blooms are colorless, including most *Pseudo-nitzschia* blooms. Some shellfish can also retain their toxins for months after a bloom.
- **If wildlife has been eating the shellfish, it must be safe.** Every animal has a different tolerance to ASP toxins. Do not assume shellfish is safe on the basis of animal observations.
- **If shellfish has been tested for Paralytic Shellfish Poisoning (PSP) toxins, it’s safe from ASP toxins as well.** While multi-species harmful algal blooms are rare, they are becoming increasingly common. ASP and PSP toxins could be present in the same samples.
- **Domoic acid can be cooked or frozen out of shellfish.** This toxin is heat stable and cannot be removed.

How can I avoid ASP?

- Contact your local Tribal government to find out if *Pseudo-nitzschia* is blooming in your area. If so, send a shellfish sample to the Sitka Tribe of Alaska’s Environmental Research Lab for domoic acid testing.
- Clean your crabs and shrimp. Domoic acid accumulates in the viscera, or “butter”, so crab and shrimp guts should be thoroughly cleaned out BEFORE cooking.
- Check seator.org/data for the latest info and community advisories. NOTE: while this is an excellent first step to becoming a more informed shellfish harvester, not seeing current harmful algal blooms does not guarantee shellfish safety.



Testing Information

Contact Michael Jamros, the Sitka Tribe of Alaska’s Environmental Lab Manager, for information on testing availability and harvesting protocols. Phone: 966-9650 Email: seator@sitkatriben-sn.gov