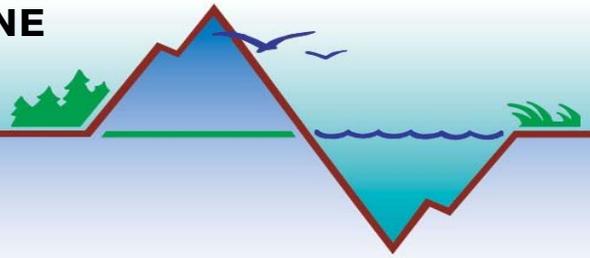


KACHEMAK BAY NATIONAL ESTUARINE RESEARCH RESERVE



Harmful Algal Bloom 2020 Progress Report

The main goal of the Harmful Algal Bloom (HAB) monitoring program is to look for groups of phytoplankton that are known to produce toxins that can result in shellfish poisoning.

Thank you volunteers for dipping, peering, recording and communicating this season! Your work allowed us to track HABs in Kachemak Bay and provide essential updates to state managers!

Map of KBNERR 2020 phytoplankton collection sites around the Kenai Peninsula and Prince William Sound.

This year we received samples from 37 locations across South Central Alaska.

Over 275 phytoplankton samples were collected by community monitors and KBNERR staff in 2020.



Kachemak Bay Research Reserve Summary of the Harmful Algal Bloom 2020 season

- This season in Kachemak Bay the species of concern were present in samples throughout the whole summer.
- However, NO wild shellfish KBNERR tested for saxitoxins were above the regulatory limit.
- Elevated numbers of *Dinophysis spp.* were detected by one of KBNERR's Community Monitors in Kachemak Bay in the end of August. To test for toxicity levels we are working with a laboratory in Washington State.
- KBNERR's staff increased sampling efforts to support Fritz Creek sites where community monitors were no longer returning due to the ongoing pandemic.
- Kachemak Bay Research Reserve is not a regulatory agency. We provide our information to State of Alaska DEC and Epidemiology offices, which use their regulatory directives to post advisories.

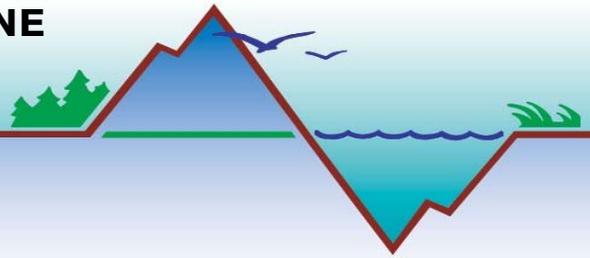
If you dig wild shellfish yourself, you dig at your own risk.



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Harmful Algal Bloom 2020 Progress Report

The chart below shows which months of 2020 we observed *Dinophysis*, *Alexandrium*, or *Pseudo-nitzschia*, the three groups of phytoplankton in Kachemak Bay that can produce toxins.

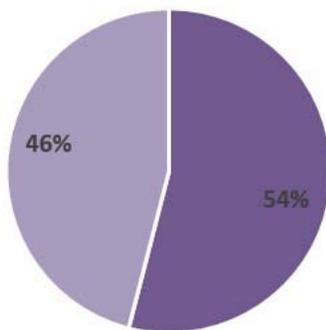
Green indicates months they were observed in a sample, grey represents no observations. Because the number of samples we receive varies from week to week this figure represents the minimum number of months these species were present in Kachemak Bay waters.

2020 Observations of Species of Concern in Kachemak Bay



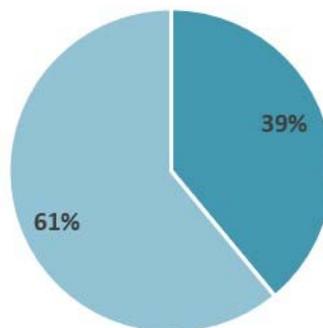
From the chart above we can notice that species of concern were present for at least nine months of 2020 in Kachemak Bay. All three species were present in samples from early May through the middle of August. The pie charts below depict the percentage of samples in which species of concern were present in 2020. In comparison to 2019, *Pseudo-nitzschia* and *Alexandrium* were present in fewer of our samples, whereas *Dinophysis* increased from being present in 36% of our samples in 2019 to 39% of samples in 2020.

Pseudo-nitzschia



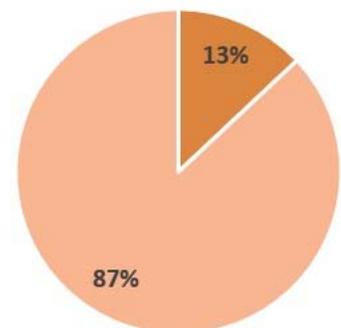
■ Present ■ Absent

Dinophysis



■ Present ■ Absent

Alexandrium



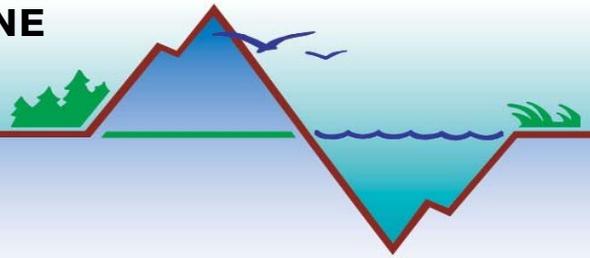
■ Present ■ Absent



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Harmful Algal Bloom 2020 Progress Report

HAB Research in Kachemak Bay:

Ongoing:

KBNERR has been partnering with UAF, NOAA and Oregon State University on a 4-year effort to examine the occurrence of Paralytic Shellfish Poisoning toxins in the marine food web of Kachemak Bay with comparison sites in Prince William Sound and Kodiak. Starting in 2018, the North Pacific Research Board-funded project, has focused on transfer of toxins from algal blooms in the Bay to other plankton, forage fish and salmon. Information about the project and interim results will be provided at the 2021 Kachemak Bay Science Conference in the spring. The Kachemak Bay Science Conference will be a virtual event this year.

Upcoming:

In 2021, KBNERR is beginning a new project that looks at how HAB toxins may be affecting forage fish in Kachemak Bay. This research builds on recent work looking at toxins in the marine food web being conducted by our NOAA collaborators. Look for more information about this project during the 2021 Kachemak Bay Science Conference taking place this upcoming spring.

The Summer of 2020: Fatality Event

The summer of 2020 brought with it the first fatality event connected to paralytic shellfish poisoning in the state of Alaska in the past decade. The individual was located in Unalaska and had harvested blue mussels and snails from a local beach with their family before consuming the shellfish. The individual began experiencing symptoms and was first sent to a local health clinic before being flown to an Anchorage hospital where they ended up passing away. Toxin testing of the shellfish that were consumed showed that they were more than 100 times higher than the regulatory limits established by the FDA. This tragic fatality shows that the risks of shellfish poisoning from consuming wild shellfish are very much real in the state of Alaska. KBNERR provided assistance by sharing resources and helping to develop the public service announcement that was released by the Department of Health and Social Services.

Adam Crum
Commissioner

dhss.alaska.gov



Department of Health
and Social Services

Anchorage, Alaska

STATE OF ALASKA

JOINT RELEASE

FOR IMMEDIATE RELEASE

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Kimberly Stryker, DEC, 907-269-7583, kimberly.stryker@alaska.gov

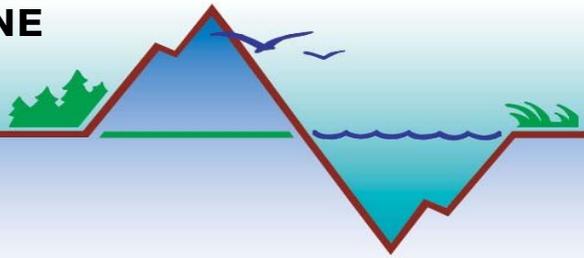
Recent Alaska death due to paralytic shellfish poisoning; Alaskans should know the health risks when harvesting shellfish



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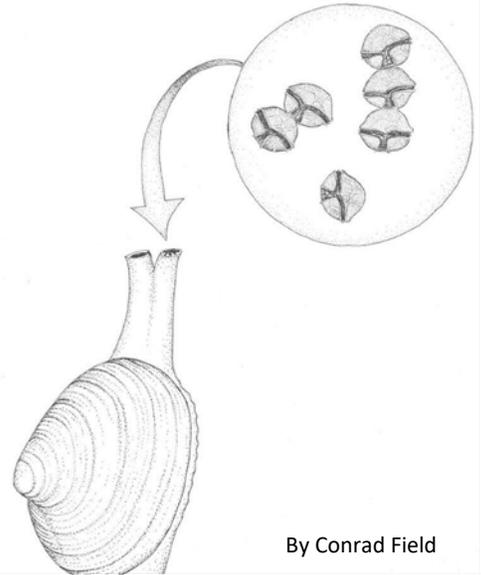
Concerned about Shellfish Poisoning? Know the Symptoms!

As we saw this summer, Shellfish Poisoning is still a real threat in the state of Alaska. Toxins associated with the various types of shellfish poisoning are not destroyed by cooking or freezing. Familiarize yourself with the symptoms and your resources if you plan to harvest wild shellfish. Some of the symptoms can include:

Tingling of your lips and tongue, tingling of fingers and toes, loss of muscle control in arms and legs, difficulty breathing, nausea, vomiting, and death.

For more information about human health and shellfish poisoning check out the resources through Alaska Department of Health and Social Services at:

<http://dhss.alaska.gov/dph/Epi/id/Pages/dod/psp/default.aspx>



By Conrad Field

KBNERR *WILD* Shellfish Toxin Testing Program

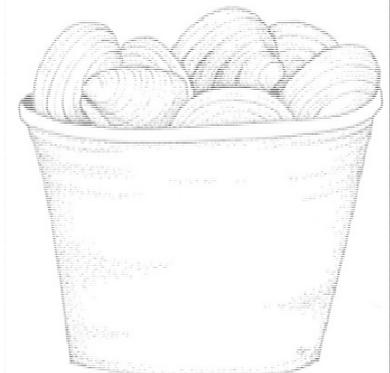
At KBNERR discrete funds are designated to test wild shellfish collected by staff and our partners. Our wild shellfish testing occurs on a bi-weekly basis during the summer months. Once collected, shellfish are shucked and the meat is frozen. There must be at least 130 grams of shellfish meat to run a toxin test. The frozen sample is mailed out on a Monday to DEC in Anchorage. By mailing the sample on a Monday we assure that someone will be there to receive the sample and that we will most likely receive preliminary results in time to include them in our weekly updates.

***Commercial product is tested before going to market by Alaska DEC. ***

Key Terms

Elevated: this term is used to track the trend when toxins are present and increasing from one sample to the next but still within the range considered safe for consumption

Toxic or Above Regulatory Limits: toxin levels have accumulated to a level the DEC has determined to be above the threshold considered safe for human consumption.



By Conrad Field

For more information visit Alaska Department of Epidemiology webpage at:

<http://dhss.alaska.gov/dph/Epi/id/Pages/dod/psp/default.aspx>



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