

KACHEMAK BAY RESEARCH RESERVE

Harmful Algal Bloom Monitoring

2013 Progress Report

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

No toxic blooms were detected in 2013.

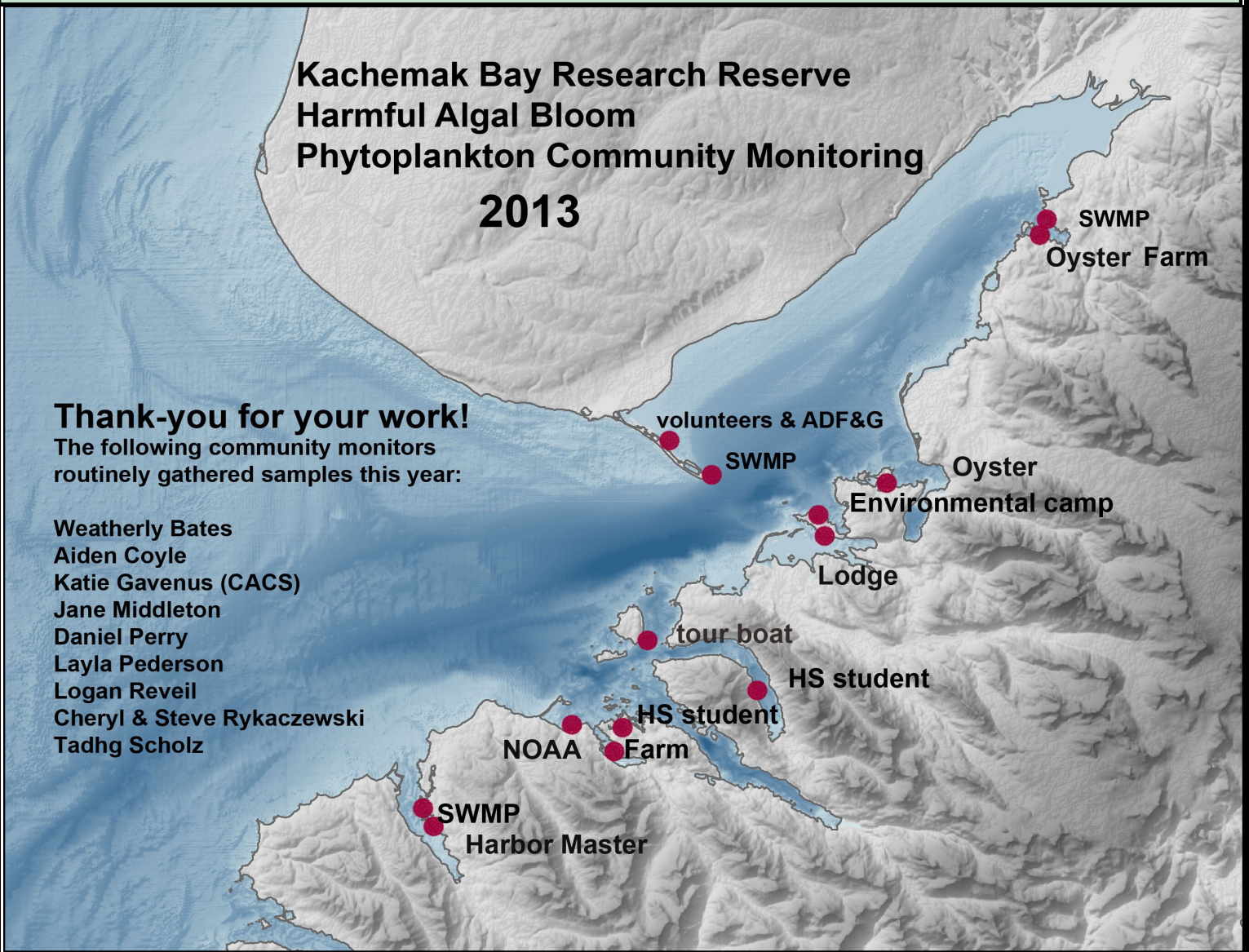
KBRR is hosting a **Phytoplankton workshop on February 11-12, 2014**. All the local phytoplankton work will be reported on. Experts and local monitors will discuss future directions for research and monitoring in Kachemak Bay. **Anyone is welcome to attend!**

Kachemak Bay Research Reserve Harmful Algal Bloom Phytoplankton Community Monitoring 2013

Thank-you for your work!

The following community monitors routinely gathered samples this year:

Weatherly Bates
Aiden Coyle
Katie Gavenus (CACS)
Jane Middleton
Daniel Perry
Layla Pederson
Logan Reveil
Cheryl & Steve Rykaczewski
Tadhg Scholz



Kachemak Bay Research Reserve

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Harmful Algal Bloom Monitoring in Kachemak Bay

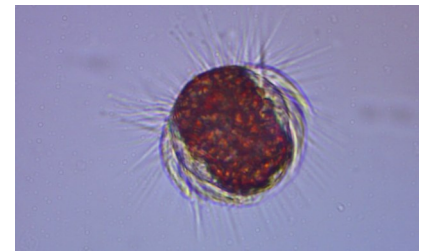
2013

What is a Bloom?

Phytoplankton blooms are a common phenomenon in the ocean. They are caused by many different kinds of microscopic plants that float in the upper, sunlit layers of water. When large numbers of colored phytoplankton are concentrated in one area, the color of the water can change. Large blooms are part of every summer in our thriving Kachemak Bay and fortunately rarely toxic. We are only beginning to find the patterns of our blooms, but here are two that seem noteworthy and a third that caught everybody's eye!

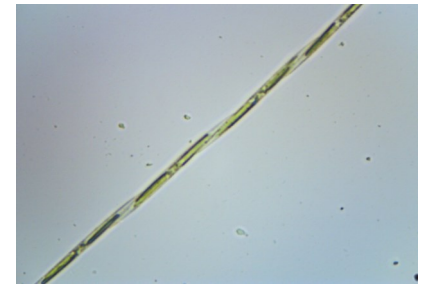
Mesodinium Bloom—July— water color: red

A non-toxic bloom of a tiny ciliates, red in color, was noticed in Tutka Bay and nearby areas. This bloom species was identified by the Kasitsna Bay Lab and other NOAA scientists. Lab staff have been taking phytoplankton samples on transects across Kachemak Bay and Lower Cook Inlet with the Gulf Watch Alaska program. It will be exciting to compare their findings with ours at the upcoming workshop.



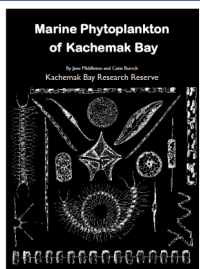
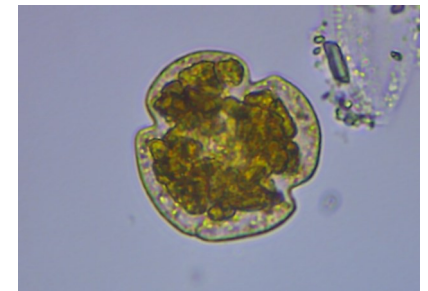
Psuedo-nitzschia Bloom- August — no water color change

While normally seen in low numbers, a bloom of Psuedo-nitzschia was detected in Sadie Cove in early August. (thanks for the sample Tadhg!) This group of phytoplankton can sometimes produce a toxin causing Amnesic Shellfish Poisoning (ASP). No dangerous levels of toxins were detected in phytoplankton or shellfish samples KBRR took during and after the bloom in and near Sadie Cove. NOAA and DEC labs did the testing.



Karenia mikimotoi Bloom- late Sept-October — water: color brown

Root-beer colored water, slime and foam was noticed by many longtime Kachemak Bay residents who claim to have never seen this before. This bloom lasted from Sept. 20—Oct with the last cells seen Nov 19. This very large and persistent bloom of dinoflagellate we have never noticed in Kachemak Bay phytoplankton before. This is the first time a bloom of K. mikimotoi has been recorded in Alaska and it is not toxic to humans.



New Kachemak Bay phytoplankton guide hot off the Press

KBRR has been looking at plankton with education classes and community monitoring for 10 years. We finally were able to compile our lists and photos to put this guide together, but it wouldn't have happened without the dedication of community monitor Jane Middleton. Her volunteer hours, passion for the marine world, and scientific mind were invaluable as she and Catie Bursch assembled the guide together. Its available as a free download on our website: www.kbayrr.org



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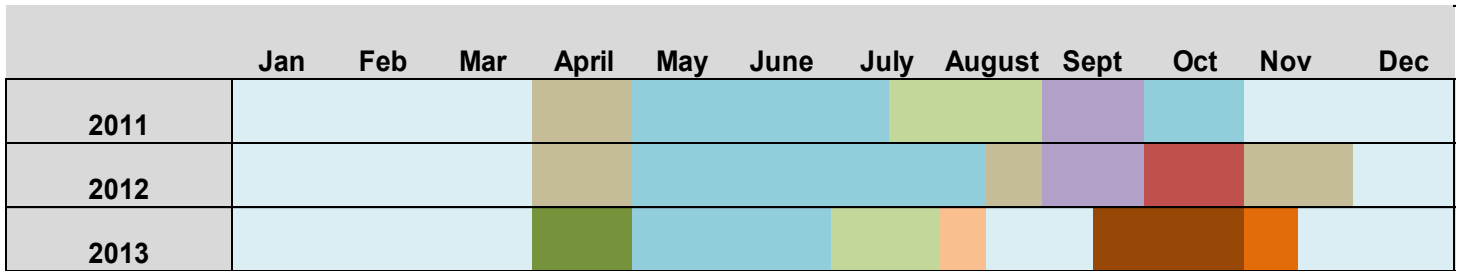
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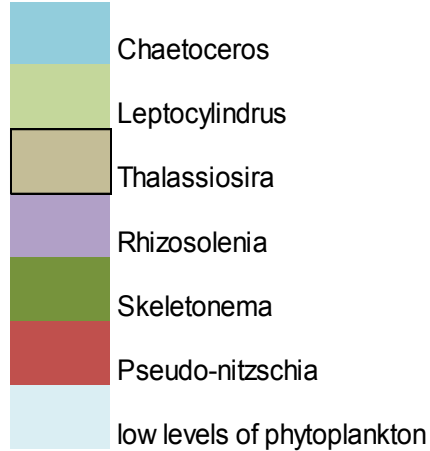
Dominant phytoplankter by month - Inner Kachemak Bay



Dinoflagellates



Diatoms



This is a rough overview of what our blooms look like in inner-Kachemak Bay. Chaetoceros is proving to be our most abundant diatom. The NOAA Plankton Monitoring Network will be counting Chaetoceros cells from our samples to more precisely graph its abundance. In other places, dinoflagellates come in after the diatoms decline. That certainly was the case this year. This winter we will be taking a look at last summers weather and ocean chemistry to see how it lines up with our phytoplankton blooms. Our program is young enough that we are just beginning to sketch out these patterns, but each sample and each year helps fill in the gaps so thanks for your help! To hear the results of the afore mentioned projects, come to our **Phyto workshop Feb 11 & 12!**



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