

Dataset Card

2024-05-25

Curation Rationale

This dataset contains phytoplankton counts from two sites within the Kotzebue Sound, the Kotzebue Lagoon and shore. Phytoplankton that was identified and counted include diatoms, some dinoflagellates, and cyanobacteria, which are all microalgae with photosynthesis capabilities. The purpose of collecting this data is to get a first-ever look of the phytoplankton community composition in the Kotzebue Sound. This was prompted by an unusual “green slime” that appeared on the surface of the water that raised concerns of possible harmful algae blooms. Not only is this an alarming consequence of increased sea surface temperatures from climate change, but this is also a concern of public health. Harmful algae bloom species can produce toxins that bioaccumulate up the food chain. This is especially alarming to Kotzebue because of the heavy reliance on seafood that is caught out of Kotzebue Sound. If this important food source is contaminated, this could bring dangerous foodborne illnesses its people that could potentially lead to death. Curating this data is the first step in catching harmful algae blooms before it has devastating health impacts on the Kotzebue community. ### Source Data This data was collected from water samples taken off of a boat. 500ml or 1000ml water was filtered through a 10 micron mesh plankton net into 50ml Falcon tubes. Water samples were then placed in 2% Lugols solution and stored away from light. The samples were shipped from Kotzebue to Estuary & Ocean Science Center in Tiburon, California for counting. Samples were centrifuged in 15ml Falcon tubes, and counts are based off of 1ml. Phytoplankton were identified and enumerated using microscopy and plankton identification textbooks. ## Considerations for using the data

Social Impact of Dataset

The broader impact that this dataset can contribute to is the prevention of harmful algae blooms (HABs) and to get the community involved in identifying HABs. A citizen-ran HAB monitoring program is anticipated to come of this project where community members can take measures into preventing foodborne illnesses from seafood. We also anticipate to contribute to the Alaska HABs monitoring program, a novel program through the Alaska Ocean Observing System. This dataset is the beginning of contributing to microbial ecology data and public health data for Kotzebue and Arctic Alaska.

Discussion of Biases

The phytoplankton counts try to reflect how many cells are in each sample. Some species are chain forming, so each individual cell was counted to the best of my ability. Because of this, the number of certain species such as cyanobacteria species may look much more abundant compared to species that do not form chains.

Other Limitations This data is also taken when samples were collected during the ice-free season. This dataset is restricted to what the phytoplankton community composition looks like in the fall months. ## Additional Information and Disclosures This dataset was taken from a larger dataset that contains phytoplankton counts from the 5 sites that will be visited as part of this project. The larger dataset will include phytoplankton counts from 2019-2023, but it is still a work in progress. Kotzebue Lagoon and Shore from 2019 are complete, and thus, were used for this independent project.