Phytoplankton abudance and physical environmental data from off the coast of Juneau, Alaska from 2015-2016 (SEAK-AHAB project)

Website: https://www.bco-dmo.org/dataset/660429
Data Type: Other Field Results
Version: 1
Version Date: 2016-09-30

Project
» Enhancing Sustainability of Shellfish Harvest in Alaska: Addressing the Ecology of Alexandrium Blooms and their Sociocultural Impacts (SEAK-AHAB)

Contributors	Affiliation	Role
Tobin, Elizabeth D.	University of Alaska Fairbanks (UAF-Juneau)	Principal Investigator
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Abstract
Phytoplankton abudance and physical environmental data from off the coast of Juneau, Alaska from 2015-2016 (SEAK-AHAB project)

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Coverage

Spatial Extent: **N**:58.538 **E**:-134.6499 **S**:58.3733 **W**:-134.8454
Temporal Extent: 2015-01-14 - 2016-12-15

Dataset Description

Phytoplankton data and associated environmental conditions collected from net tows approximately weekly from four phytoplankton monitoring sites in Juneau, AK in 2015 and 2016.

Methods & Sampling

Phytoplankton Data:

Dock and beach-based phytoplankton net tow (Sea Gear, 8” diameter, 20um mesh) samples were collected at approximately weekly intervals at four phytoplankton sampling stations; Auke Bay, Amalga, Eagle Beach and Auke Rec in Juneau, AK. Surface net tow durations were 3 minutes.

Environmental Data:

Air temperature was recorded using the GPS mode on the NOAA weather android application. Surface seawater salinity was determined using a refractometer for salinity. Surface seawater temperature was recorded using a waterproof digital thermometer. Tide observations were verified using the GPS mode on the Tides Near Me android application.

Data Processing Description

Net tow samples were counted the same day as collection using a NEOSCI-ruled microscope slide with an 8×8 square grid to estimate relative abudance.

BCO-DMO Data Processing Notes:

-Reformatted column names to comply with BCO-DMO standards
-Removed spaces from data values and replaced with underscores
-Filled in blank cells with "nd"
-Replaced tide and weather codes with the appropriate definitions listed in the metadata
-2017-07-25: Updated with data from 2016.

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Data Files

File
phyto_net_data.csv (Comma Separated Values (.csv), 51.00 KB) MD5:339aab1928c4790aa7242bce8331f2eb Primary data file for dataset ID 660429

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Parameters

Parameter	Description	Units
sampling_event	Sampling event ID	unitless
date	Date sample was taken; YYYYmmdd	unitless
time_zone	Time zone where sample was taken	unitless
time_local	Local time when sampling occurred; HH:MM	unitless
station	Station where sample was taken	unitless
lat	Latitude	decimal degrees
lon	Longitude	decimal degrees
investigator	Investigator responsible for collecting sample	unitless
site_type	Type of site where sampling occurred; Dock or Beach	unitless
air_temp	Air temperature	celsius
surface_salinity	Surfance salinity	parts per thousand (PPT)
surface_temp	Sea surface temperature	celsius
weather	Observed weather conditions	unitless
tide	Observed tide conditions	unitless
instrument	Instrument used to collect sample	unitless
depth	Depth of sample	meters
dinoflagellates	Qualitative cell counts of relative abundance	count
diatoms	Qualitative cell counts of relative abundance	count
Alexandrium_sp	Qualitative cell counts of relative abundance	count
ISO_DateTime_Local	DateTime local; YYYY-mm-dd HH:MM	unitless
year	Four digit year sample was taken; YYYY	unitless

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Instruments

Dataset-specific Instrument Name	Sea Gear
Generic Instrument Name	Plankton Net
Dataset-specific Description	Sea Gear 8" diameter 20um mesh
Generic Instrument Description	A Plankton Net is a generic term for a sampling net that is used to collect plankton. It is used only when detailed instrument documentation is not available.

Dataset-specific Instrument Name	Refractometer
Generic Instrument Name	Refractometer
Dataset-specific Description	Measured sea surface salinity
Generic Instrument Description	A refractometer is a laboratory or field device for the measurement of an index of refraction (refractometry). The index of refraction is calculated from Snell's law and can be calculated from the composition of the material using the Gladstone-Dale relation. In optics the refractive index (or index of refraction) n of a substance (optical medium) is a dimensionless number that describes how light, or any other radiation, propagates through that medium.

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Deployments

Tobin_2015_2016

Website	https://www.bco-dmo.org/deployment/660315
Platform	shoreside Juneau_Alaska
Start Date	2015-03-10
End Date	2016-12-15
Description	Phytoplankton and CTD sampling was performed here in 2015 and 2016 by E. Tobin.

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Project Information

Enhancing Sustainability of Shellfish Harvest in Alaska: Addressing the Ecology of Alexandrium Blooms and their Sociocultural Impacts (SEAK-AHAB)

Coverage: Southeast Alaska; 58 N, 134 W

Description from NSF award abstract:
The project is supported under the NSF Science, Engineering and Education for Sustainability Fellows (SEES Fellows) program, with the goal of helping to enable discoveries needed to inform actions that lead to environmental, energy and societal sustainability while creating the necessary workforce to address these challenges.

This project focuses on the sustainability of shelfish harvesting in Alaska. In Alaska, paralytic shellfish poisoning caused by the marine alga Alexandrium is a severe and persistent problem that significantly impacts human health and the availability of shellfish resources. This project aims to enhance sustainability of commercial, recreational and subsistence shellfish harvest in Southeast Alaska by addressing the ecology of Alexandrium harmful algal blooms and their sociocultural impacts. Despite the recognized impacts of paralytic shellfish poisoning, little research has been done on the causative organism, Alexandrium, and the sociocultural impacts of toxic Alexandrium blooms in the Southeast Alaska region. This study is a three-pronged effort. First, the project bolsters understanding of the ecological mechanisms that promote Alexandrium blooms by mapping cyst seedbeds (i.e., bloom initiation sites), monitoring cyst emergence, and identifying environmental conditions under which blooms form. This information adds to the body of scientific knowledge about Alexandrium bloom

dynamics in coastal, fjord systems, provide early-warning information about toxic bloom development and help focus future paralytic shellfish poisoning testing and harmful algal bloom monitoring efforts in Southeast Alaska. Second, the application of novel in situ sensors will overcome previous benthic emergence monitoring challenges and has the potential to improve harmful algal bloom forecasting capabilities. Third, human dimensions research will generate critical information about how social systems can reduce vulnerability to harmful algal blooms and how local/traditional knowledge can support scientific efforts by establishing strong community partnerships.

The SEES Fellow, Dr. Elizabeth Tobin, works with host mentor Dr. Ginny Eckert at the University of Alaska Fairbanks, and with partner mentor Dr. Thomas Leschine at the University of Washington.

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Funding

Funding Source	Award
NSF Divsion of Integrative and Collaborative Education and Research (NSF ICER)	ICER-1415195

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