HabMap: Hab Pier Sampling Data Stream Plan

1. Data and Information Types

A. Provide a contextual description of the data stream.

The HAB (Harmful Algal Bloom) Pier Sampling time series to monitor the water quality and abundance of harmful phytoplankton species and toxins at seven pier structures in California. A qualitative report of abundance and absence of select algal species is made weekly, along with descriptions of current marine conditions, providing a short latency snapshot report. Samples are temporarily archived for quantitative assays, which are performed periodically as a batch process. Researchers quantify in situ nutrient concentrations, photosynthetic photopigments abundance, harmful toxins, and identify and quantify relevant phytoplankton species.

These data are reported in two ways. First, as a weekly report email, which is generated by the sample taker using a template and distributed through a list server maintaned by SCCWRP (habs@sccwrp.org). Second, the full quantitative report is sent as a Microsoft excel spreadsheet (.xls file extension) to a data coordinator at SCCOOS, where the data is ingested into a SQL database.

B. How many station locations are there for this data stream?

Sampling Location	Latitude, Longitude
Santa Cruz Wharf, Santa Cruz	36.958, -122.017
Monterey Wharf, Monterey	36.604, -121.889
Stearn's Wharf, Santa Barbara	34.408, -119.685
Cal Poly Pier, San Luis Obispo	35.170, -120.741
Santa Monica Pier, Santa Monica	34.008, -118.499
Newport Pier, Newport	33.606, -117.931
Scripps Pier, La Jolla	32.867, -117.257

C. What are the specific parameters of the data.

(As of 2018-07-13) The collected variables are:

Meta Data	
SampleID	Date Collected

Location Code	Time Collected (PST)

Photopigments	
Chl Volume Filtered (mL)	Phaeo1 (mg/m3)
Chl1 (mg/m3)	Phaeo2 (mg/m3)
Chl2 (mg/m3)	Avg. Phaeo (mg/m3)
Avg Chloro (mg/m3)	

Water Quality	
Temp (°C)	Silicate (uM)
Nitrate (uM)	Nitrite (uM)
Phosphate (uM)	Ammonia (uM)

HAB Toxins	
DA Volume Filtered (mL)	Domoic Acid (ng/mL)

Phytoplankton	
Volume Settled for counting (mL)	Lingulodinium polyedrum (cells/L)
Akashiwo sanguinea (cells/L)	Prorocentrum spp. (cells/L)
Alexandrium spp. (cells/L)	Pseudo-nitzschia delicatissima group (cells/L)
Dinophysis spp. (cells/L)	Pseudo-nitzschia seriata group (cells/L)

D. Provide information about the sampling platform or instrumentation.

a. Collection

A vertical net tow is made from a each pier with a 20-25 □m mesh phytoplankton net with a 200 mL cod-end piece to a depth of 4-5 meters. Discrete-depth, whole water samples are collected using a Van Dorn sampler to collect water at meter intervals down to bottom depth, each sample is combined into a carboy, forming an integrated water sample. Total phytoplankton biomass is estimated using an Aquaflor fluorometer (Turner Design) to measuring in vivo chlorophyll fluorescence.

b. Phytoplankton Determination

Net tow samples are preserved in 1% glutaraldehyde for subsequent quantification in the lab. Phytoplankton abundance is initially quantified on a relative abundance scale

and/or through cell counts, using a calibrated PhycoTech Nannoplankton Counting Chamber slide on a compound microscope. The relative abundance scale equates a qualitative value to the percentage cover of a given phytoplankton taxa. Addition immediate determinations of the densities of specific toxic plankton species may be determined by counting individual cells or will be completed for the full report.

c. Nutrient, Nucleic Acids, Proteins and Amino Acids, Photopigment Determination

As a cost saving mechanism, samples are archives until the various quantities can be processed in batches. For nutrient determination, whole water samples are filtered through 0.2 □m filter and stored at -20°. For Nucleic Acids determinations, 50 mL of the net tow sample is filtered through a 1.2 □m isopore membrane filter. The filtered material is extracted into Trizol (invitrogen) and stored in at -80° C. For Protein and Amino Acids determination, 50 mL of net tow sample is filtered through a 2□m isopore membrane filter and extracted into 80% methanol and stored at -80° C. For Photopigment determinations, 25 mL of net tow sample is filtered through a Glass Microfibre Filter and stored at -80°C.

d. Data Reports

Using a microsoft word document template, an email report is generated and distributed to the a lister server (habs@sccwrp.org). The report also contains a qualitative description of the phytoplankton community, the current sea state, weather, and any other observations or general impressions that may be of interest.

Batch quantitative determination is made quarterly. Data, as an appended excel spreadsheet, are sent to the SCCOOS data manager, where they are loaded into a SQL database.

Pier Sampling protocols can be access through protocols.io (https://www.protocols.io/view/monterey-wharf-ii-weekly-phytoplankton-monitoring-hiub4ew?step=4)

2. Data Pathway

A. Is a data sharing agreement required?

A data sharing agreement has not be reached yet.

B. In which format(s) was data received by CeNCOOS?

Preliminary data is received as a semi-formatted email.
Full reports are received as microsoft excel (.xls) spreadsheets.

C. How can the information be accessed?

Currently, data are only made available on request

D. What file formats will be used for sharing data, if different from original?

Currently, emails are parsed using a Python script and into a netCDF file.

E. Describe how the data is ingested(e.g. the flow of data from source to data portals) and any transformations or modifications made to share data in the data portal.

Complete reports are received by the SCCOOS data manager and appended to an Excel spreadsheet. These data are placed into a SQL database and served into the HABMAP data portal (http://www.habmap.info/data.html) using a php script.

F. What metadata or contextual information is provided with the data?

G. Are there ethical restrictions to data sharing?

a. **If so, how will these be resolved?**

N/A

H. Who holds intellectual property rights (IPR) to the data?

3. Data Source and Quality Control

A. Indicate the data source type (i.e. Federal, Non-Federal, University, State Agency, Local Municipality, Military Establishment (branch), private industry, NGO, non-Profit, Citizen Science, Private individual)

University

a. If Federal data source, were changes applied to the data?

N/A

b. If Yes, describe any changes to the data that require documentation?

N/A

B. Indicate the data reporting type (e.g. real-time, historical).

Weekly (email reports), Monthly (full report

C. If real-time, list the QARTOD procedures that are currently applied.

N/A

D. If real-time, list the QARTOD procedures that are planned for implementation.

N/A

E. What is the status of the reported data? (e.g. raw, some QC, incomplete, delayed mode processed but not QC'd)

N/A

F. Describe the data control procedures that were applied by the originator.

N/A

a. **Provide a link to any documented procedures.**

N/A

G. **Describe the data control procedures that were applied by CeNCOOS.**

N/A

a. **Provide a link to any documented procedures.**

N/A

H. **List the procedures taken for data that could not be QC'd as directed.**

N/A

4. Stewardship and Preservation Policies

A. Who is responsible for long-term data archiving?

N/A

B. Which long-term data storage facility will be used for preservation?

N/A

C. Describe any transformation necessary for data preservation.

N/A

D. List the metadata or other documentation that will be archived with the data.

N/A