Monterey Wharf II Weekly Phytoplankton Monitoring Sample Collection and Processing Notes

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Abstract

A description of how samples are collected and processed as part of MLML Smith Lab's weekly HAB monitoring efforts in Monterey, CA.

- Sampling Location: Monterey Commercial Wharf, Monterey, CA. 36° 36.3' N 121° 53.3' W
- Oceanographic and meteorological observations for the time of sampling are referenced from the Monterey, CA NOAA station ID: 9413450

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Protocol

Step 1.

Sample Collection

- A vertical net tow is collected using a 25µm mesh plankton net with a 200mL cod-end piece at a depth of 5 m.
- Vertical whole water samples are collected using a VanDorn at discreet 1m intervals and integrated over 5m.

Step 2.

Sample Processing

1. Total phytoplankton biomass is estimated from in vivo chlorphyll fluorescence on dark adapted net and whole water samples using a calibrated Aquaflor fluorometer (Turner Designs).
2. Species relative abundance is assessed microscopically from 1% glutaraldehyde preserved samples quantified on a nanoplankton counting chamber (Phycotech).
3. The following samples are processed and archived for later analysis:

- Nutrients: Whole water is passed through a 0.2 µm syringe filter and stored at -20°C
- Nucleic Acids: 50 mLs of the net tow sample are filtered through 1.2µm Isopore membrane filter (Millipore) and extracted into Trizol (Invitrogen) before being archived at -80°C.

- Protein and Amino Acids: 50mLs of the net tow are filtered through 2µm Isopore membrane filter (Millipore) and extracted into 80% Methanol before being archived at -80°C.
- Pigment: 25mLs of the net tow are filtered through Glass Microfibre Filters (Whatman) and archived at -80°C.