R/V Falkor 160115 McLane pump log from the ProteOMZ expedition in the Central Pacific during 2016 (ProteOMZ project)

Website: https://www.bco-dmo.org/dataset/708495
Data Type: Cruise Results
Version: 3
Version Date: 2024-10-21

Project
» The ProteOMZ Expedition: Investigating Life Without Oxygen in the Pacific Ocean (ProteOMZ (Proteomics in an Oxygen Minimum Zone))

Contributors	Affiliation	Role
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Abstract
R/V Falkor 160115 McLane pump log from the ProteOMZ expedition in the Central Pacific during 2016.

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Coverage

Spatial Extent: **N**:10 **E**:-138.6914 **S**:-10.5 **W**:-156.9507
Temporal Extent: 2016-01-19 - 2016-02-04

Methods & Sampling

R/V Falkor 160115 McLane log data.

Sampling was conducted using a McLane Pump, or Surface Pump.

BCO-DMO Curation Notes

>BCO-DMO Data Processing Notes:
- reformatted column names to comply with BCO-DMO standards.
- replaced spaces in column names with underscores.
- removed special characters from column names.
- removed units from column names.

Data version 2:2018-11-20 was an intermediate revision replacing data version 1:2017-09-07 correcting issues with lat/lon values.

Data version 3:2018-12-17 replaces data version 2: 2018-11-20 with changes made after communication with data contributor.
* lat/lon issues corrected. lon values > 360 converted to the equivalent in 180 max format. All long values made negative (verified against cruise track from R2R).
* added columns for max/min filter sizes and ISO_DateTime_UTC.
* Time format was inconsistent and contained HH:MM:00 and HH:MM. Format changed to all HH:MM.
* 24:00:00 value 24:00:00 changed to 23:59
* blank values are displayed as "nd" the default missing data identifier in the BCO-DMO data system.
* target_depth value for station 12 cast MP12 changed from 20 to 21.
* Alternate target_depth values supplied for station 8 cast MP06 by submitter.
* column "depth" removed and target_depth name changed to "depth." There is now only one "depth" column.

2024-10-21:
* Same data table described above (Data version 3:2018-12-17) was imported into BCO-DMO's new data system and will be reviewed by data submitter before public release as 708495_v3_falkor-160115-mclane-log.csv

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Data Files

File		
708495_v3_falkor-160115-mclane-log.csv	(Comma Separated Values (.csv), 16.90 KB) MD5:fbad6fd30feecf2a880af6ada357bc03	
Primary data file for dataset ID 708495, version 3		
mclane_log_FK160115.csv	(Comma Separated Values (.csv), 16.93 KB) MD5:579ceccf69b2a8c3ae124ff6ee3cf034	
ProteOMZ McLane pump log PIs: M. Saito and A. Santoro Data Version 3: 2018-12-17		

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Related Datasets

IsRelatedTo

Saito, M. A., Saunders, J. (2022) **Relative protein abundance from scaled and corrected exclusive peptide spectral counts from the ProteOMZ R/V Falkor expedition cruise FK160115 in the Pelagic central Pacific Ocean in 2016.** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2022-01-13 doi:10.26008/1912/bco-dmo.868030.1 [view at BCO-DMO]
Relationship Description: Dataset "RV Falkor 160115 McLane Pump Log" is the log for the sample collection via McLane pumps used for the protein sampling for dataset "ProteOMZ Exclusive Peptide Level Spectral Counts."

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Parameters

Parameter	Description	Units
cruise	Cruise name	unitless

station	Station number	unitless
date	Date of sampling in format yyyy-mm-dd	unitless
time	Local time of sampling; HH:MM	unitless
lat	Latitude; N is positive	decimal degrees
lon	Longitude; E is positive	decimal degrees
cast	Cast ID number	unitless
pump_serial_num	Pump serial number; manufactorer issued	unitless
pump_num	Pump ID number; PI issued	unitless
filter_stand	Filter stand ID number	unitless
depth	Sample depth	meters
pump_start_time	Pump start time; HH:MM	unitless
set_pump_time	Programmed set time for pump	minutes
GFF_flow_meter_volume	GFF flow meter total volume	liters
supor_flow_meter_volume	Supor flow meter total volume	liters
total_start	Combined flow meter total at start	liters
added_total_of_supor_and_GFF	Added total of flow meter volumes	liters
total_end	Combined flow meter total at end	liters
difference	Difference in total start and end values	liters
pump_msg	Pump messages received	unitless

notes	Notes	unitless
ISO_DateTime_UTC	Timestamp (UTC) in standard ISO 8601:2004(E) format YYYY-mm-ddTHH:MMZ	unitless

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Instruments

Dataset-specific Instrument Name	McLane
Generic Instrument Name	McLane Pump
Dataset-specific Description	Used for water sampling
Generic Instrument Description	McLane pumps sample large volumes of seawater at depth. They are attached to a wire and lowered to different depths in the ocean. As the water is pumped through the filter, particles suspended in the ocean are collected on the filters. The pumps are then retrieved and the contents of the filters are analyzed in a lab.

Dataset-specific Instrument Name	Surface pump
Generic Instrument Name	Pump surface
Dataset-specific Description	Used for water sampling
Generic Instrument Description	A source of uncontaminated near-surface seawater pumped onto the deck of the research vessel that can be sampled and analyzed. This pumped seawater supply is from an over-the-side pumping system, and is therefore different from the vessel underway seawater system.

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Deployments

FK160115

Website	https://www.bco-dmo.org/deployment/708387
Platform	R/V Falkor
Report	https://service.rvdata.us/data/cruise/FK160115/doc/FK160115_OfficialCruiseReport_Saito_v3.pdf
Start Date	2016-01-16
End Date	2016-02-11
Description	Project: Using Proteomics to Understand Oxygen Minimum Zones (ProteOMZ) More information is available from the ship operator at https://schmidtocean.org/cruise/investigating-life-without-oxygen-in-the... Additional cruise information is available from the Rolling Deck to Repository (R2R): https://www.rvdata.us/search/cruise/FK160115

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Project Information

The ProteOMZ Expedition: Investigating Life Without Oxygen in the Pacific Ocean (ProteOMZ (Proteomics in an Oxygen Minimum Zone))

Website: https://schmidtocean.org/cruise/investigating-life-without-oxygen-in-the-tropical-pacific/#team

Coverage: Central Pacific Ocean (Hawaii to Tahiti)

From Schmidt Ocean Institute's ProteOMZ Project page:

Rising temperatures, ocean acidification, and overfishing have now gained widespread notoriety as human-caused phenomena that are changing our seas. In recent years, scientists have increasingly recognized that there is yet another ingredient in that deleterious mix: a process called deoxygenation that results in less oxygen available in our seas.

Large-scale ocean circulation naturally results in low-oxygen areas of the ocean called oxygen deficient zones (ODZs). The cycling of carbon and nutrients – the foundation of marine life, called biogeochemistry – is fundamentally different in ODZs than in oxygen-rich areas. Because researchers think deoxygenation will greatly expand the total area of ODZs over the next 100 years, studying how these areas function now is important in predicting and understanding the oceans of the future. This first expedition of 2016 led by Dr. Mak Saito from the Woods Hole Oceanographic Institution (WHOI) along with scientists from University of Maryland Center for Environmental Science, University of California Santa Cruz, and University of Washington aimed to do just that, investigate ODZs.

During the 28 day voyage named “ProteOMZ,” researchers aboard R/V *Falkor* traveled from Honolulu, Hawaii to Tahiti to describe the biogeochemical processes that occur within this particular swath of the ocean’s ODZs. By doing so, they contributed to our greater understanding of ODZs, gathered a database of baseline measurements to which future measurements can be compared, and established a new methodology that could be used in future research on these expanding ODZs.

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Funding

Funding Source	Award
Gordon and Betty Moore Foundation: Marine Microbiology Initiative (MMI)	GBMF3782
Alfred P. Sloan Foundation (Sloan)	Unknown ProteOMZ Sloan Foundation
Schmidt Ocean Institute (SOI)	R/V Falkor 160115 SOI ProteOMZ Expedition

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