Metagenome Profiles from R/V Kilo Moana KM0627 (HOT186) near Hawaii (22.75 N, 158 W) from October 2006 (C-MORE project)

Website: https://www.bco-dmo.org/dataset/517605
Version: 06 June 2014
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Project
» Center for Microbial Oceanography: Research and Education (C-MORE)

Contributors	Affiliation	Role
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Dataset Description

Metagenome depth profiles and shotgun Sanger sequences from Station ALOHA, near Hawaii (22.75 N, 158 W), cruise HOT-186.

Data from the accession numbers listed below can be accessed from NCBI (http://www.ncbi.nlm.nih.gov/).

GenBank accession numbers
Study: SRP000109
SRA: Metagenome depth profile
SRX007372 25m
SRX007369 75m
SRX007370 110m
SRX007371 500m
Shotgun Sanger sequences
2281966591-2282003263
2282006336-2282042335
To access the shotgun Sanger sequences, search the NCBI Trace Archives at http://www.ncbi.nlm.nih.gov/Traces/trace.cgi?view=search.

Manuscripts
Environmental Microbiology 14:1363–1377 (2012)
PNAS 107: 18634–18639 (2010)

Data Processing Description

25Feb2015/srg *- Dataset URL, Deplopyment-Dataset utl and "Study" Links in description updated based on e-mail from Jasmine Nahorniak*

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Parameters

Parameters for this dataset have not yet been identified

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Deployments

KM0627

Website	https://www.bco-dmo.org/deployment/516664
Platform	R/V Kilo Moana
Report	http://hahana.soest.hawaii.edu/hot/csreports/cs186.pdf
Start Date	2006-10-18
End Date	2006-10-24

Description	Original data are available from the NSF R2R data catalog The objective of the cruise was to maintain a collection of hydrographic and biogeochemical data at the Hawaii Ocean Time-series (HOT) stations. Five stations were to be occupied during the cruise, in the following order: 1) Station 1, referred to as Station Kahe, is located at 21o 20.6'N, 158o 16.4'W and was to be occupied on the first day of the cruise for about 2 hours. 2) Station 2, referred to as Station ALOHA is defined as a circle with a 6 nautical mile radius centered at 22o 45'N, 158oW. This is the main HOT station and was to be occupied during the 2nd, 3rd, 4th ,5th and 6th days of the cruise. 3) Station 51, is the site of the MOSEAN Mooring, located at 22o 45'N, 158o 6'W and was to be occupied on the 5th day of the cruise for about 2 hours. 4) Station 50, is the site of the WHOTS Mooring, located at 22o 45.994'N, 157o 53.992'W and was to be occupied on the 6th day of the cruise for about 14 hours. 5) Station 6, referred to as Station Kaena, is located off Kaena Point at 21o 50.8'N, 158o 21.8'W and was to be occupied on the 6th day of the cruise for about 2 hours. Upon arrival to Station Kahe a 400 lb. weight-test cast, one CTD cast to 1000 m, and a PRR cast was to be conducted at this location in the afternoon of October 18. The single CTD cast was to be conducted to collect continuous profiles of various physical and chemical parameters. Water samples were to be collected at discrete depths for biogeochemical measurements. After these operations were satisfactorily completed, the ship was to proceed to Station ALOHA. Upon arrival to Station ALOHA, a series of CTD casts were to commence. After the third CTD cast, an array with incubation experiments (gas array) was to be deployed for 24 hours at 0330 on Oct. 19. Following this, CTD casts were to continue until the deployment of the free-drifting sediment trap array at 2330 on Oct. 19. The sediment trap array was to stay in the water for about 52 hours. After the deployment of the sediment traps, the gas array was to be recovered at 0400 on Oct. 20. After recovery of the gas array the ship was to return to the center of Station ALOHA for a full-depth CTD cast, followed by 1000-m CTD casts at strict 3 hour intervals for at least 36 hours for continuous and discrete data collection, ending with another full-depth CTD cast. One free-drifting array (primary production) was to be deployed for 12 hours for incubation experiments on October 21. A plankton net was to be towed near noon and midnight for 30-min intervals on October 19, 20 and 21 at Station ALOHA. A Profiling Reflectance Radiometer (PRR) was to be deployed for half-hour periods near noon time on October 18, 21 and 22. A package including a Wet Labs AC9, a Chelsea Fast Repetition Rate Fluorometer (FRRf), and a SeaBird Seacat was to be used to profile the upper 200 m at Station ALOHA at noon time on October 21 and 22, and in the early morning on October 22. An Automated Trace Element Sampler (ATE) was to be deployed once on October 19. After CTD work at Station ALOHA was accomplished, the ship was to transit to recover the floating sediment trap array on October 22. After recovering the sediment traps, the ship was to transit to Station 51 to conduct a 200-m CTD cast, and then back to Station ALOHA to conduct light casts (PRR, AC9/FRRf) followed by five more CTD casts. Following the last CTD cast the ship was to transit to Station 51 (WHOTS). Four CTD casts were to be conducted near the WHOTS mooring. Cast 1 was to consist of three 1000m casts without removing the CTD from the water. Cast 2 was to consist of 200m casts (yoyo) up and down. Cast 3 was to consist of three 1000m casts without removing the CTD from the water. Cast 4 was to consist of 200m casts (yoyo) up and down. After operations at Station 51 ended, the ship was to transit to Station 6 (Kaena). A near-bottom CTD cast (~2500 m) was to be conducted at Station 6 including salinity samples for calibration, after which the ship was to transit to back to Snug Harbor. The following instruments were to collect data throughout the cruise: shipboard ADCP, thermosalinograph, and two anemometers.

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Project Information

Center for Microbial Oceanography: Research and Education (C-MORE)

Website: http://cmore.soest.hawaii.edu/

Coverage: North Pacific Subtropical Gyre (large region around 22 45 N, 158 W)

Project summary

The **Center for Microbial Oceanography: Research and Education** (C-MORE) is a recently established (August 2006; NSF award: EF-0424599) NSF-sponsored Science and Technology Center designed to facilitate a more comprehensive understanding of the diverse assemblages of microorganisms in the sea, ranging from the genetic basis of marine microbial biogeochemistry including the metabolic regulation and environmental controls of gene expression, to the processes that underpin the fluxes of carbon, related bioelements and energy in the marine environment. Stated holistically, C-MORE's primary mission is: *Linking Genomes to Biomes*.

We believe that the time is right to address several major, long-standing questions in microbial oceanography. Recent advances in the application of molecular techniques have provided an unprecedented view of the structure, diversity and possible function of sea microbes. By combining these and other novel approaches with more well-established techniques in microbiology, oceanography and ecology, it may be possible to develop a meaningful predictive understanding of the ocean with respect to energy transduction, carbon sequestration, bioelement cycling and the probable response of marine ecosystems to global environmental variability and climate change. The strength of C-MORE resides in the synergy created by bringing together experts who traditionally have not worked together and this, in turn, will facilitate the creation and dissemination of new knowledge on the role of marine microbes in global habitability.

The new Center will design and conduct novel research, broker partnerships, increase diversity of human resources, implement education and outreach programs, and utilize comprehensive information about microbial life in the sea. The Center will bring together teams of scientists, educators and community members who otherwise do not have an opportunity to communicate, collaborate or design creative solutions to long-term ecosystem scale problems. The Center's research will be organized around four interconnected themes:

- (Theme I) microbial biodiversity,
- (Theme II) metabolism and C-N-P-energy flow,
- (Theme III) remote and continuous sensing and links to climate variability, and
- (Theme IV) ecosystem modeling, simulation and prediction.

Each theme will have a leader to help coordinate the research programs and to facilitate interactions among the other related themes. The education programs will focus on pre-college curriculum enhancements, in service teacher training and formal undergraduate/graduate and post-doctoral programs to prepare the next generation of microbial oceanographers. The Center will establish and maintain creative outreach programs to help diffuse the new knowledge gained into society at large including policymakers. The Center's activities will be dispersed among five partner institutions:

- Massachusetts Institute of Technology,
- Woods Hole Oceanographic Institution,
- Monterey Bay Aquarium Research Institute,
- University of California at Santa Cruz and
- Oregon State University

and will be coordinated at the University of Hawaii at Manoa.

Related Files:

Strategic plan (PDF file)

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Funding

Funding Source	Award
US Department of Energy (DOE)	unknown C-MORE DOE
NSF Division of Biological Infrastructure (NSF DBI)	DBI-0424599
Gordon and Betty Moore Foundation (GBMF)	unknown C-MORE Moore

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