

# Clone Metagenome Sequence data from R/V Ka'imikai-O-Kanaloa, R/V Kilo Moana multiple cruises near Hawaii (22.75 N, 158 W) from 2002-2009 (C-MORE project)

Website: <https://www.bco-dmo.org/dataset/517567>

Version: 06 June 2014

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## Project

» [Center for Microbial Oceanography: Research and Education](#) (C-MORE)

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## Dataset Description

Clone and metagenomic sequences from Station ALOHA, near Hawaii (22.75 N, 158 W)

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

**BioProject:** [PRJNA16339](#)

### GenBank accession numbers

GSS: Fosmid end sequences

[DU731018-DU796676](#)

[DU800850-DU800864](#)

GSS: SSU rRNA gene sequences

[DQ300508-DQ300926](#)

### Manuscript

Science, 311: 496-503 (2006)

### GenBank accession numbers

Nucleotide: SSU rRNA gene sequences

[EU360979-EU361729](#)

### Manuscript

Environ. Microbiol. 10:2313-30 (2008)

### GenBank accession numbers

Nucleotide: SSU rRNA gene sequences

[EU016559-EU016674](#)

[ABEF00000000](#) marine metagenome

### Manuscript

Appl. Environ. Microbiol. 75:5345-5355 (2009)

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## Data Files

File
<b>clone_meta_seq.csv</b> (Comma Separated Values (.csv), 638 bytes) MD5:d7a93dc343b0a12d60afdcdffda93f24c
Primary data file for dataset ID 517567

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## Parameters

Parameter	Description	Units
date	date	YYYYMMDD
cruise_id	cruise ID	dimensionless
sta_name	station name	dimensionless
lat	latitude (positive north)	decimal degrees
lon	longitude (positive east)	decimal degrees
BioProject	NCBI BioProject accession number	dimensionless

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## Deployments

### KOK0220

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/516617">https://www.bco-dmo.org/deployment/516617</a>
<b>Platform</b>	R/V Ka`imikai-O-Kanaloa
<b>Report</b>	<a href="http://hahana.soest.hawaii.edu/hot/csreports/cs140.html">http://hahana.soest.hawaii.edu/hot/csreports/cs140.html</a>
<b>Start Date</b>	2002-10-05
<b>End Date</b>	2002-10-09
<b>Description</b>	<p>The objective of this cruise was to continue building a collection of hydrographic and biogeochemical data at the Hawaii Ocean Time-series(HOT) stations. Four stations were to be occupied during the cruise, in the following order: 1) Station 1, referred to as Station Kahe, is located at 21° 20.6' N, 158° 16.4' W and was to be occupied on October 5 for about 3 hours. 2) Station 2: ALOHA (A Long Term Oligotrophic Habitat Assessment) is defined as a circle with a 6 nautical mile radius centered at 22° 45'N, 158° W. This is the main HOT station and was to be occupied for 3 days from October 6 through October 8. 3) Station 8: HALE ALOHA is located at 22° 20' N, 158° 10.6' W. Station 8 was planned to be occupied on October 8 for about 2 hours. 4) Station 6: Located off Kahe Point at 21° 50.8' N, 158° 21.8' W. Station 6 was planned to be occupied on October 8 for about 3 hours. A single CTD cast was to be conducted at Station 1 to collect continuous profiles of various physical and chemical parameters. Water samples were to be collected at discrete depths for biogeochemical measurements. Upon arrival at Station ALOHA, a floating sediment trap array was to be deployed. A full-depth CTD cast was to be conducted followed by CTD casts at 3-hour intervals for 36 hours of continuous and discrete data collection. Plankton net tows were to be conducted near noon and midnight on October 6 and 7. A floating primary production experiment was to be deployed and recovered on October 7. Following recovery of the sediment traps on October 8, the ship was scheduled to return to Station ALOHA for trace metal and optical casts. Once work was completed at Station ALOHA, the ship was to transit to Station 8 for a single 1000 m CTD cast then to Station 6 for a single 2500 m cast. The ship was scheduled to return to SNUG Harbor at 0800 on October 9 and unload. The following instruments were to collect data throughout the cruise: a shipboard ADCP, a thermosalinograph, a fluorometer and an anemometer.</p>

**KOK0916**

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/59015">https://www.bco-dmo.org/deployment/59015</a>
<b>Platform</b>	R/V Ka`imikai-O-Kanaloa
<b>Report</b>	<a href="http://hahana.soest.hawaii.edu/hot/cruises.html">http://hahana.soest.hawaii.edu/hot/cruises.html</a>
<b>Start Date</b>	2009-09-23
<b>End Date</b>	2009-09-27
<b>Description</b>	HOT - Cruise Schedules, Chief Scientist Reports and Cast Sheets Cruise information and original data are available from the NSF R2R data catalog.

**KM0325**

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/516658">https://www.bco-dmo.org/deployment/516658</a>
<b>Platform</b>	R/V Kilo Moana
<b>Start Date</b>	2003-12-18
<b>End Date</b>	2003-12-22
<b>Description</b>	<p>Original data are available from the NSF R2R data catalog The objective of this cruise was to maintain a collection of hydrographic and biogeochemical data at the Hawaii Ocean Time-series (HOT) stations. Three stations were to be occupied during the cruise, in the following order: 1) Station 1, referred to as Station Kahe, is located at 21 20.6'N, 158 16.4'W and was to be occupied on December 18 for about 3 hours. 2) Station 2: ALOHA (A Long Term Oligotrophic Habitat Assessment) is defined as a circle with a 6 nautical mile radius centered at 22 45'N, 158W. This is the main HOT Station and was to be occupied for 3 days from December 19 to December 21. 3) Station 6, referred to as Station Kaena, is located off Kaena Point at 21 50.8'N, 158 21.8'W was to be occupied on December 21 for about 2 hours. A single CTD cast was to be conducted at Station 1 to collect continuous profiles of various physical and chemical parameters. Water samples were to be collected at discrete depths for biogeochemical measurements. Upon arrival at Station ALOHA, a free-drifting sediment trap array was to be deployed. After deployment, a full-depth CTD cast was to be conducted, followed by CTD casts at strict 3 hour intervals for at least 36 hours for continuous and discrete data collection, followed by another full-depth CTD cast. One free-drifting array was to be deployed for 12 hours for incubation experiments on December 20. A plankton net was to be deployed near noon and midnight on December 19 and 20 at Station ALOHA. After CTD work at Station ALOHA was accomplished, the ship was to transit to recover the floating sediment trap array. After recovering the sediment traps, the ship was to return to Sta. ALOHA to continue light cast operations, after which the ship was to transit to Station 6. 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 back to Snug Harbor. A Profiling Reflectance Radiometer (PRR) and a Hyperspectral Tethered Spectral Radiometric Buoy (HTSRB) were to be deployed for half-hour periods near noon time on December 19, 20 and 21. 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 300 m at Sta. ALOHA for one-hour periods on December 20 and 21. A Satlantic ISUS sensor was added to this package to measure the vertical distribution of nitrate. A Remote Automatic Sampler (RAS) was to be deployed after the second deep cast at Station ALOHA with the CTD cable to a target depth of 4500 m, and to be raised to selected levels at pre-determined time intervals, for a total of 8 hours. The following instruments were to collect data throughout the cruise: a thermosalinograph, a fluorometer, and two anemometers.</p>

**KM0627**

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/516664">https://www.bco-dmo.org/deployment/516664</a>
<b>Platform</b>	R/V Kilo Moana
<b>Report</b>	<a href="http://hahana.soest.hawaii.edu/hot/csreports/cs186.pdf">http://hahana.soest.hawaii.edu/hot/csreports/cs186.pdf</a>
<b>Start Date</b>	2006-10-18
<b>End Date</b>	2006-10-24
<b>Description</b>	<p>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.</p>

KM0608

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/516661">https://www.bco-dmo.org/deployment/516661</a>
<b>Platform</b>	R/V Kilo Moana
<b>Report</b>	<a href="http://hahana.soest.hawaii.edu/hot/csreports/cs179.html">http://hahana.soest.hawaii.edu/hot/csreports/cs179.html</a>
<b>Start Date</b>	2006-03-08
<b>End Date</b>	2006-03-12
<b>Description</b>	Original data are available from the NSF R2R data catalog The objective of this 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 21 20.6'N, 158 16.4'W and was to be occupied on March 8 for about 2 hours. 2) Station 2: ALOHA (A Long Term Oligotrophic Habitat Assessment) is defined as a circle with a 6 nautical mile radius centered at 22 45'N, 158W. This is the main HOT Station and was to be occupied for 3 days from March 9 to 11. 3) Station 51, is the site of the MOSEAN Mooring, located at 22 46.009'N, 158 5.533'W was to be occupied on the 4th day of the cruise for about 30 minutes. 4) Station 50, is the site of the WHOTS Mooring, located at 22 46.1 N, 157 53.4 W was to be occupied on the 4th day of the cruise for about 30 minutes. 5) Station 6, referred to as Station Kaena, is located off Kaena Point at 21 50.8'N, 158 21.8'W was to be occupied on the 4th day of the cruise for about 2 hours. A single CTD cast was to be conducted at Station 1 to collect continuous profiles of various physical and chemical parameters. Water samples were to be collected at discrete depths for biogeochemical measurements. Upon arrival at Station ALOHA, the free-drifting sediment trap array was to be deployed, followed by four shallow CTD casts (

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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**

<b>Funding Source</b>	<b>Award</b>
US Department of Energy (DOE)	<a href="#">unknown C-MORE DOE</a>
<a href="#">NSF Division of Biological Infrastructure (NSF DBI)</a>	<a href="#">DBI-0424599</a>
Gordon and Betty Moore Foundation (GBMF)	<a href="#">unknown C-MORE Moore</a>

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