

Lipid/Fatty acid concentrations from MULFVS samples from R/V Thomas G. Thompson cruises TT007, TT011 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2672>

Version: April 22, 2002

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Project

» [U.S. JGOFS Equatorial Pacific](#) (EqPac)

Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

| Contributors | Affiliation | Role |
|--------------------------------------|---|------------------------|
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Dataset Description

Lipid/Fatty acid concentrations from MULFVS samples

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

| Parameter | Description | Units |
|------------------|---|-----------------|
| event | event number from event log | |
| sta | station number from event log | |
| sta_name | station name | |
| lat_n | nominal latitude, negative denotes South | degrees |
| lon_n | nominal longitude, negative denotes West | degrees |
| depth | depth | meters |
| fatty_acids_lt53 | sum of fatty acids lt 53 microns | nanograms/liter |
| lipids_neut_lt53 | sum of neutral lipids lt 53 microns | nanograms/liter |
| sum_lt53 | sum of fatty acids and neutral lipids lt 53 microns | nanograms/liter |
| fatty_acids_gt53 | sum of fatty acids gt 53 microns | nanograms/liter |
| lipids_neut_gt53 | sum of neutral lipids gt 53 microns | nanograms/liter |
| sum_gt53 | sum of fatty acids and neutral lipids gt 53 microns | nanograms/liter |

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Instruments

| | |
|---|--|
| Dataset-specific Instrument Name | Multi Unit Large Volume Filtration System |
| Generic Instrument Name | Multiple Unit Large Volume Filtration System |
| Dataset-specific Description | MULVFS(Multiple Unit Large Volume in situ Filtration System) was used to collect water samples. |
| Generic Instrument Description | The Multiple Unit Large Volume Filtration System (MULVFS) was first described in Bishop et al., 1985 (doi: 10.1021/ba-1985-0209.ch009). The MULVFS consists of multiple (commonly 12) specialized particulate matter pumps, mounted in a frame and tethered to the ship by a cable (Bishop et al., 1985; Bishop and Wood, 2008). The MULVFS filters particulates from large volumes of seawater, although the exact protocols followed will vary for each project. |

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Deployments

TT007

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57728 |
| Platform | R/V Thomas G. Thompson |
| Start Date | 1992-01-30 |
| End Date | 1992-03-13 |
| Description | <p>Purpose: Spring Survey Cruise; 12°N-12°S at 140°W TT007 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team.</p> <p>Methods & Sampling PI: Stuart Wakeham of: Skidaway Institute of Oceanography, University of Georgia dataset: Lipid/Fatty acid concentrations from MULFVS samples dates: February 05, 1992 to March 07, 1992 location: N: 12.0383 S: -12.035 W: -140.9418 E: -135.0167 project/cruise: EqPac/TT007 - Spring Survey ship: R/V Thomas Thompson Methodology: Wakeham, Stuart G., John I. Hedges, Cindy Lee, Michael L. Peterson, and Peter J. Hernes (1997). Composition and transport of lipid biomarkers through the water column and surficial sediments of the equatorial Pacific Ocean. Deep-Sea Research II, Vol. 44, No. 9-10, pp2131-2162. Notes: Concentrations of fatty acids and neutral lipids were calculated as sums of all compounds quantified. Individual compounds quantified are available as downloadable excel format files: MULFVS Acids MULFVS Neutrals</p> |

TT011

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/57730 |
| Platform | R/V Thomas G. Thompson |
| Start Date | 1992-08-05 |
| End Date | 1992-09-18 |
| Description | <p>Purpose: Fall Survey; 12°N-12°S at 140°W TT011 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team.</p> <p>Methods & Sampling PI: Stuart Wakeham of: Skidaway Institute of Oceanography, University of Georgia dataset: Lipid/Fatty acid concentrations from MULFVS samples dates: August 11, 1992 to September 14, 1992 location: N: 12.01 S: -11.8483 W: -141.3483 E: -134.9533 project/cruise: EqPac/TT011 - Fall Survey ship: R/V Thomas Thompson Methodology: Wakeham, Stuart G., John I. Hedges, Cindy Lee, Michael L. Peterson, and Peter J. Hernes (1997). Composition and transport of lipid biomarkers through the water column and surficial sediments of the equatorial Pacific Ocean. Deep-Sea Research II, Vol. 44, No. 9-10, pp2131-2162. Notes: Concentrations of fatty acids and neutral lipids were calculated as sums of all compounds quantified. Individual compounds quantified are available as downloadable excel format files: MULFVS Acids MULFVS Neutrals</p> |

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Project Information

U.S. JGOFS Equatorial Pacific (EqPac)

Website: <http://usjgofs.whoi.edu/research/eqpac.html>

Coverage: Equatorial Pacific

The U.S. EqPac process study consisted of repeat meridional sections (12°N -12°S) across the equator in the central and eastern equatorial Pacific from 95°W to 170°W during 1992. The major scientific program was focused at 140° W consisting of two meridional surveys, two equatorial surveys, and a benthic survey aboard the R/V Thomas Thompson. Long-term deployments of current meter and sediment trap arrays augmented the survey cruises. NOAA conducted boreal spring and fall sections east and west of 140°W from the R/V Baldrige and R/V Discoverer. Meteorological and sea surface observations were obtained from NOAA's in place TOGA-TAO buoy network.

The scientific objectives of this study were to determine the fluxes of carbon and related elements, and the processes controlling these fluxes between the Equatorial Pacific euphotic zone and the atmosphere and deep ocean. A broad overview of the program at the 140°W site is given by Murray et al. (Oceanography, 5: 134-142, 1992). A full description of the Equatorial Pacific Process Study, including the international context and the scientific results, appears in a series of Deep-Sea Research Part II special volumes:

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1995), Deep-Sea Research Part II, Volume 42, No. 2/3.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific. Part 2 (1996), Deep-Sea Research Part II, Volume 43, No. 4/6.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1997), Deep-Sea Research Part II, Volume 44, No. 9/10.

Topical Studies in Oceanography, The Equatorial Pacific JGOFS Synthesis (2002), Deep-Sea Research Part II, Volume 49, Nos. 13/14.

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Program Information

U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Website: <http://usjgofs.whoi.edu/>

Coverage: Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

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