

# Mesozooplankton grazing rates from R/V Thomas G. Thompson cruises TT008, TT012 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2680>

Version: December 8, 1994

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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
<a href="#">Dam, Hans G.</a>	University of Connecticut (UConn)	Principal Investigator
<a href="#">Chandler, Cynthia L.</a>	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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## Dataset Description

Mesozooplankton grazing rates

## Methods & Sampling

See Platform deployments for cruise specific documentation

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## Parameters

Parameter	Description	Units
yrday	day of year	
event	event number from event log, a composite of month/day/time local Hawaii time	
sta	station number from event log	
depth_r	depth range/interval sampled	meters
sizefrac	size fraction/interval of organisms analyzed	millimeters
graze_rate	grazing rate	milligrams pigment/milligrams body C/hour

## Instruments

<b>Dataset-specific Instrument Name</b>	MOCNESS.25
<b>Generic Instrument Name</b>	MOCNESS.25
<b>Dataset-specific Description</b>	Mesozooplankton (> 64 µm) were collected from day/night pairs of tows with a 0.25 m-mouth area MOCNESS equipped with nine nets with a 7:1, mouth:length ratio (Wiebe et al., 1985).
<b>Generic Instrument Description</b>	The Multiple Opening/Closing Net and Environmental Sensing System or MOCNESS is a family of net systems based on the Tucker Trawl principle. The MOCNESS-1/4 carries nine 1/4-m <sup>2</sup> nets usually of 64 micrometer mesh and is used to sample the larger micro-zooplankton.

## Deployments

### TT008

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57729">https://www.bco-dmo.org/deployment/57729</a>
<b>Platform</b>	R/V Thomas G. Thompson
<b>Start Date</b>	1992-03-19
<b>End Date</b>	1992-04-15
<b>Description</b>	<p>Purpose: Spring Time Series; Equator, 140°W TT008 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><b>Methods &amp; Sampling</b>            PI: Hans Dam of: University of Connecticut dataset: Mesozooplankton grazing rates dates: March 23, 1992 to April 06, 1992 location: N: 0.0932 S: -0.0685 W: -140.076 E: -139.8945 project/cruise: EQPAC/TT008 - Spring Time Survey ship: Thomas Thompson Notes: The data below represent weight-specific grazing rates of mesozooplankton as a function of day of year, size fractions of animals and depth interval for the time-series cruise TT008 of the EqPac study. All experiments were carried out at equator. Grazing was measured with the gut fluorescence technique. Details are given in the EqPac Protocols. Mean GCRC (gut clearance rate constant) of this cruise (0.031 min<sup>-1</sup>) was used. The grazing values are the means of 2-5 pseudoreplicates from each tow. Contact Hans Dam for additional pseudoreplicate values.</p>

### TT012

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57731">https://www.bco-dmo.org/deployment/57731</a>
<b>Platform</b>	R/V Thomas G. Thompson
<b>Start Date</b>	1992-09-24
<b>End Date</b>	1992-10-21
<b>Description</b>	<p>Purpose: Fall Time Series; Equator, 140°W TT012 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><b>Methods &amp; Sampling</b>  PI: Hans Dam of: University of Connecticut dataset: Mesozooplankton grazing rates dates: October 02, 1992 to October 20, 1992 location: N: 0.0908 S: -0.1397 W: -140.148 E: -139.8905 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson The data below represent weight-specific grazing rates of mesozooplankton as a function of day of year, size fractions of animals and depth interval for the time-series cruise TT012 of the EqPac study. All experiments were carried out at equator. Grazing was measured with the gut fluorescence technique. Details are given in the EqPac Protocols. Mean GCRC (gut clearance rate constant) of this cruise (0.030 min<sup>-1</sup>) was used. The grazing values are the means of 2-5 pseudoreplicates from each tow. Contact Hans Dam for additional pseudoreplicate values.</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.

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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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