

# Event log from R/V New Horizon cruise NH1008 in Monterey Bay, near MBARI buoy M1 (36.747°N, 122.022°W); 2010 (GATEKEEPERS project)

Website: <https://www.bco-dmo.org/dataset/3712>

Version: 06 September 2012

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## Project

» [Zooplankton feeding at the base of the particle maximum: Gatekeepers of the Vertical Flux?](#) (GATEKEEPERS)

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## Table of Contents

- [Dataset Description](#)
  - [Methods & Sampling](#)
  - [Data Processing Description](#)
- [Data Files](#)
- [Parameters](#)
- [Deployments](#)
- [Project Information](#)
- [Funding](#)

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## Dataset Description

Cruise Event Log

### Methods & Sampling

Recorded aboard vessel by science party

### Data Processing Description

#### BCO-DMO Processing/Edits

- Generated from original file "NH1008\_Event\_Log.xls" contributed by Jessica Forrest-Baldini
- Date reformatted to YYYYMMDD
- Time reformatted to HHMMSS
- ISO DateTime format generated
- Latitude converted to decimal degrees
- Longitude converted to decimal degrees and signed negative for West Longitude
- Parameter names modified to conform to BCO-DMO conventions (blanks to underscores, etc.)
- "NaN" replaced with "nd"

[ [table of contents](#) | [back to top](#) ]

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## Data Files

File
<b>Event_Log.csv</b> (Comma Separated Values (.csv), 26.80 KB) MD5:b8583a3e40ae54d4646e58f383be0c50
Primary data file for dataset ID 3712

[ [table of contents](#) | [back to top](#) ]

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## Parameters

Parameter	Description	Units
Event	Event Number	Dimensionless
Station	Station Number/Id	Dimensionless
ISO_DateTime_Local	Date/Time (Local) ISO formatted	YYYY-MM-DDTHH:MM:SS.xx[+/-TZ]
Date	Date (Local)	YYYYMMDD
Time	Time (Local)	HHMMSS
Latitude	Latitude (South is negative)	decimal degrees
Lat_Degrees	Latitude Degrees North	integer degrees
Lat_Minutes	Latitude Minutes North	decimal minutes
Longitude	Longitude (West is negative)	decimal degrees
Lon_Degrees	Longitude Degrees West	integer degrees
Lon_Minutes	Longitude Minutes West	decimal minutes
Intials	Initials of person making entry	Dimensionless
Remarks	Event remark(s)	Dimensionless

[ [table of contents](#) | [back to top](#) ]

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## Deployments

### NH1008

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/58852">https://www.bco-dmo.org/deployment/58852</a>
<b>Platform</b>	R/V New Horizon
<b>Report</b>	<a href="http://bcodata.whoi.edu/GATEKEEPERS/cruise_plan_checkley_nh_8_25_jul_10_v3.pdf">http://bcodata.whoi.edu/GATEKEEPERS/cruise_plan_checkley_nh_8_25_jul_10_v3.pdf</a>
<b>Start Date</b>	2010-07-08
<b>End Date</b>	2010-07-25
<b>Description</b>	Collaborative Research: Zooplankton at the Base of the Particle Maximum: Gatekeepers of the Vertical Flux?: Deployment and recovery of SOLOPCs in Monterey Bay, plus CTD and MOCNESS deployments in Monterey Bay Cruise information and original data are available from the NSF R2R data catalog. Figure 1. R/V New Horizon Cruise NH1008 GATEKEEPERS [click on the image to view a larger version]

[ [table of contents](#) | [back to top](#) ]

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## Project Information

**Zooplankton feeding at the base of the particle maximum: Gatekeepers of the Vertical Flux?**

## **(GATEKEEPERS)**

**Website:** <http://iod.ucsd.edu/gatekeeper/>

**Coverage:** Monterey Bay, CA and waters offshore

### **Zooplankton feeding at the base of the particle maximum: Gatekeepers of the Vertical Flux?**

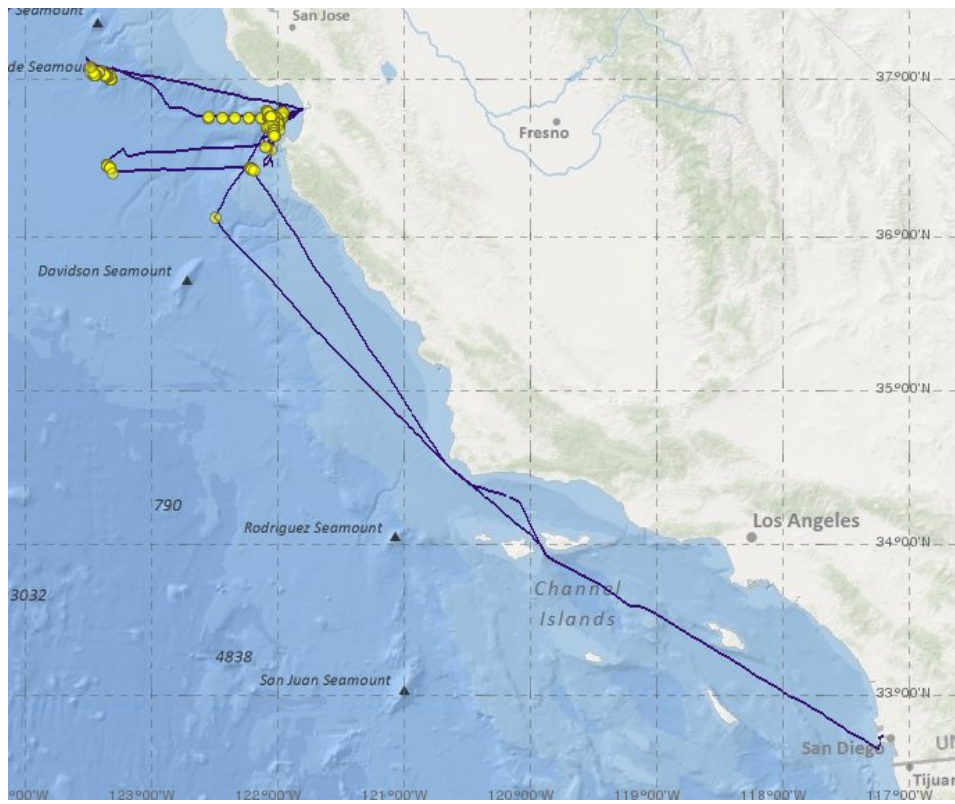
A range of observations suggest that zooplankton act as gatekeepers for material leaving the euphotic zone. This study will investigate the interactions of zooplankton with other particles using a suite of autonomous and tethered instruments in conjunction with finescale water sampling. The SOLOPC (Sounding Oceanographic Observer with Laser Optical Plankton Counter) will be the autonomous instrument and provide hourly profiles of zooplankton and other particles. Previous sampling with the SOLOPC indicated a diel cycle of production and abundance of particles in the euphotic zone and their sinking and consumption, presumably by zooplankton observed at the base of the particle abundance maximum. The SOLOPC senses particles, including zooplankton and aggregates, and measures their equivalent spherical diameters which can be used to compute particle size spectra. However, it is difficult to use the SOLOPC to distinguish among particle types, such as copepods, larvaceans, and aggregates, particularly if they are small. The research will include an intensive field study that will take place in Monterey Bay and use adaptive sampling to observe near SOLOPCs with a new, AUV-borne imaging system, ship-based CTD and MOCNESS sampling, and MBARI's ROV Ventana. The investigators will alter a SOLOPC to be stationary relative to an isopycnal and use the particle counts that it accumulates to calculate a flux spectrum. They will combine the flux and concentration spectra to estimate particle sinking velocities as a function of particle diameter. Zooplankton feeding in the water column will be estimated by analyzing the gut fluorescence of animals caught in zooplankton nets and by counting the distribution of fecal pellets in water samples. Results will enhance the understanding of the role of the zooplankton as gatekeepers in the vertical flux of particles and, hence, the biological pump. The study will also provide new insight into factors that affect zooplankton behavior and ecology.

Collaborating institutions include SIO, TAMU, LUMCON, MBARI, BIO, and Université Paris VI. The SOLOPC, modified to measure flux as well as profile, and REFLICS are intended for acquisition and use by other researchers worldwide. The understanding we gain of role of the zooplankton as gatekeepers of the vertical flux will contribute valuably to understanding of the biological pump and the carbon cycle.

### **PUBLICATIONS PRODUCED AS A RESULT OF THIS RESEARCH**

Jackson, GA and DM Checkley Jr. "Particle size distributions in the upper 100 m water column and their implications for animal feeding in the plankton," *Deep-Sea Research*, 2011.

Figure 1. R/V New Horizon Cruise NH1008 GATEKEEPERS  
[click on the image to view a larger version]



[ [table of contents](#) | [back to top](#) ]

## Funding

Funding Source	Award
<a href="#">NSF Division of Ocean Sciences (NSF OCE)</a>	<a href="#">OCE-0927863</a>
<a href="#">NSF Division of Ocean Sciences (NSF OCE)</a>	<a href="#">OCE-0928139</a>
<a href="#">NSF Division of Ocean Sciences (NSF OCE)</a>	<a href="#">OCE-0928425</a>

[ [table of contents](#) | [back to top](#) ]