

# Multi-cruise sampling event log from R/V Oceanus OC404-01 and R/V Weatherbird II WB0409 cruises in the Sargasso Sea in 2004 (EDDIES project)

**Website:** <https://www.bco-dmo.org/dataset/3017>

**Data Type:** Cruise Results

**Version:** 1

**Version Date:** 2007-02-27

## Project

» [Eddies Dynamics, Mixing, Export, and Species composition](#) (EDDIES)

## Program

» [Ocean Carbon and Biogeochemistry](#) (OCB)

Contributors	Affiliation	Role
<a href="#">Bates, Nicholas</a>	Bermuda Biological Station for Research (BBSR)	Chief Scientist
<a href="#">McGillicuddy, Dennis J.</a>	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
<a href="#">Ewart, Courtney</a>	University of California-Santa Barbara (UCSB)	Co-Principal Investigator
<a href="#">Chandler, Cynthia L.</a>	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

## Abstract

Multi-cruise sampling event log from R/V Oceanus OC404-01 and R/V Weatherbird II WB0409 cruises in the Sargasso Sea in 2004.

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## Coverage

**Spatial Extent:** N:37.934 E:-58.752 S:28.641 W:-68.703

**Temporal Extent:** 2004-06-12 - 2004-07-03

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## Dataset Description

**PI:** Dennis McGillicuddy and Nick Bates  
**of:** WHOI and BBSR  
**dataset:** multi-cruise sampling event log  
**dates:** 12 June 2004 to 03 July 2004 (20040612-20040703)  
**location:** N: 37.934 S: 28.641 W: -68.703 E: -58.754  
**project/cruise:** EDDIES 2004 Survey 1 OC404-1 and Transect 1 WB0409  
**platform:** R/V OCEANUS and R/V WEATHERBIRD II

Methodology: [processing notes](#) are available

Change history:

051213: create merged cruise log from OC404-1 and WB0409 CTD event logs

060313: add date and time fields (cchandler, OCB DMO)

070227: add all sampling events from complete event log created and contributed by Courtney Ewart (UCSB); (added by cchandler)

Related information:

070227: Courtney Ewart (UCSB) contributed a merged CTD map for OC404-1 and WB0409 that may help to determine relative CTD station locations ([PDF file of 3 maps](#))

DMO note: The WB0409 cruise is also called EDDIES Transect #1 or EDT1 (EDDIES Transects 1 and 2 were done in 2004, 3 and 4 in 2005)

The dist\_EC (distance from eddy center, ADCP eddy center trajectories) was calculated by Valery Kosnyrev (WHOI).

## **Data Processing Description**

### **EDDIES 2004 cruises: Survey 1 OCEANUS 404-1 and Transect 1 WB0409 event\_log\_E1 data processing notes**

**PI: Dennis McGillicuddy (WHOI) and Nick Bates (BBSR)**

27 February 2007: Prepared for OCB data system by Cyndy Chandler, OCB DMO (MCG Dept, WHOI) from a processing notes file contributed by Courtney Ewart (UCSB).

The merged cruise event log of all recorded sampling events aboard two coordinated EDDIES cruises in 2004 was created and contributed by Courtney Ewart (UCSB) in August 2006.

Courtney Ewart  
Graduate Program in Marine Science  
University of California  
Santa Barbara, CA 93106  
[ewart@lifesci.ucsb.edu](mailto:ewart@lifesci.ucsb.edu)

#### **The merged event log combines data from:**

OC and WB CTD cast sheets

WHOI XBT logs and combined CTD station logs (OCB DMO, WHOI)

Thorium pump cast logs contributed by Steve Pike (WHOI)

Optics and BBOP Metadata from Dave Siegel (UCSB)

and ADCP eddy center trajectories calculated by Valery V. Kosnyrev (WHOI)

Information for the sediment traps could not be located.

## **Explanation of sampling\_type descriptor codes**

EC	Location of eddy center each day based on ADCP trajectory (V. Kosnyrev). Time was set to 0000 to generate a unique event #, and does not therefore represent GMT 0000.
BBOP	WB chl samples taken for BBOP (1, 20, 40, 60m)
CTD Profile	No bottles fired. CTD depth profile only.
Go-flo	Production array deployment
CTD	Niskin bottles fired and sampled
LP/Rad	Light probe/Radiometer
MOC	Mocness tow
ST	Surface tow
Wire	unknown sampling event type

**NOTE:** "Rad" and "LP" are same event type (radiometer) but "OC404-4 event log" info for LP does not match Siegel "Optics Metadata" xls file, so have included both an LP and Rad category here. "LP" events can be eliminated if "Rad" events from optics meta data are correct since "Rad" metadata seems more complete than "LP" metadata.

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## Data Files

File
<b>event_log_E1.csv</b> (Comma Separated Values (.csv), 44.70 KB) MD5:5c1785278c568d10a42833b9c28d9f5c
Primary data file for dataset ID 3017

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## Parameters

Parameter	Description	Units
event	unique sampling event number composite of UTC date and time in the format YYYYMMDDhhmm	unitless
date	start date of event (UTC) in the format YYYYMMDD	unitless
time	start time of event (UTC) in the format hhmm	unitless
lon	longitude, negative denotes West	decimal degrees
lat	latitude, negative denotes South	decimal degrees
Cruise_ID	cruise identifier	dimensionless
sta	CTD station number	dimensionless
ev_type	event type descriptor	dimensionless
sampling_type	sampling device type	dimensionless
depth_max	maximum depth of sampling	meters
dist_EC	distance from eddy center	kilometers
radiometer_file	file associated with radiometer	dimensionless
activity_and_comments	concatenated string: cruise_ID, sampling method, and 2 digit station	dimensionless

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## Deployments

### OC404-01

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57956">https://www.bco-dmo.org/deployment/57956</a>
<b>Platform</b>	R/V Oceanus
<b>Report</b>	<a href="http://ocb.whoi.edu/EDDIES/CRUISES/2004/OC404-1_Draft_Cruise_Report.pdf">http://ocb.whoi.edu/EDDIES/CRUISES/2004/OC404-1_Draft_Cruise_Report.pdf</a>
<b>Start Date</b>	2004-06-11
<b>End Date</b>	2004-07-03
<b>Description</b>	EDDIES 2004 Survey 1 cruise Funded by: NSF OCE-0241310 Original cruise data are available from the NSF R2R data catalog (Cruise DOI: 10.7284/900337)

### WB0409

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57955">https://www.bco-dmo.org/deployment/57955</a>
<b>Platform</b>	R/V Weatherbird II
<b>Start Date</b>	2004-06-23
<b>End Date</b>	2004-07-02
<b>Description</b>	EDT1 2004 Transect 1 cruise Funded by: NSF OCE-0241310

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## Project Information

### Eddies Dynamics, Mixing, Export, and Species composition (EDDIES)

**Website:** [http://science.whoi.edu/users/olga/eddies/EDDIES\\_Project.html](http://science.whoi.edu/users/olga/eddies/EDDIES_Project.html)

**Coverage:** Sargasso Sea

The original title of this project from the NSF award is: Collaborative Research: Impacts of Eddies and Mixing on Plankton Community Structure and Biogeochemical Cycling in the Sargasso Sea".

Prior results have documented eddy-driven transport of nutrients into the euphotic zone and the associated accumulation of chlorophyll. However, several key aspects of mesoscale upwelling events remain unresolved by the extant database, including: (1) phytoplankton physiological response, (2) changes in community structure, (3) impact on export out of the euphotic zone, (4) rates of mixing between the surface mixed layer and the base of the euphotic zone, and (5) implications for biogeochemistry and differential cycling of carbon and associated bioactive elements. This leads to the following hypotheses concerning the complex, non-linear biological regulation of elemental cycling in the ocean:

H1: Eddy-induced upwelling, in combination with diapycnal mixing in the upper ocean, introduces new nutrients into the euphotic zone.

H2: The increase in inorganic nutrients stimulates a physiological response within the phytoplankton community.

H3: Differing physiological responses of the various species bring about a shift in community structure.

H4: Changes in community structure lead to increases in export from, and changes in biogeochemical cycling within, the upper ocean.

## **Publications**

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## **Program Information**

### **Ocean Carbon and Biogeochemistry (OCB)**

**Website:** <http://us-ocb.org/>

**Coverage:** Global

The Ocean Carbon and Biogeochemistry (OCB) program focuses on the ocean's role as a component of the global Earth system, bringing together research in geochemistry, ocean physics, and ecology that inform on and advance our understanding of ocean biogeochemistry. The overall program goals are to promote, plan,

and coordinate collaborative, multidisciplinary research opportunities within the U.S. research community and with international partners. Important OCB-related activities currently include: the Ocean Carbon and Climate Change (OCCC) and the North American Carbon Program (NACP); U.S. contributions to IMBER, SOLAS, CARBOOCEAN; and numerous U.S. single-investigator and medium-size research projects funded by U.S. federal agencies including NASA, NOAA, and NSF.

The scientific mission of OCB is to study the evolving role of the ocean in the global carbon cycle, in the face of environmental variability and change through studies of marine biogeochemical cycles and associated ecosystems.

The overarching OCB science themes include improved understanding and prediction of: 1) oceanic uptake and release of atmospheric CO<sub>2</sub> and other greenhouse gases and 2) environmental sensitivities of biogeochemical cycles, marine ecosystems, and interactions between the two.

The OCB Research Priorities (updated January 2012) include: ocean acidification; terrestrial/coastal carbon fluxes and exchanges; climate sensitivities of and change in ecosystem structure and associated impacts on biogeochemical cycles; mesopelagic ecological and biogeochemical interactions; benthic-pelagic feedbacks on biogeochemical cycles; ocean carbon uptake and storage; and expanding low-oxygen conditions in the coastal and open oceans.

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