

CTD station and Niskin bottle event log from R/V Weatherbird II WB0409, WB0413, WB0506, WB0508 in the Sargasso Sea, 2004-2005 (EDDIES project)

Website: <https://www.bco-dmo.org/dataset/3043>

Version: final

Version Date: 2006-03-08

Project

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

Program

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

Contributors	Affiliation	Role
Bates, Nicholas	Bermuda Biological Station for Research (BBSR)	Principal Investigator
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Dataset Description

PI: Nick Bates (Chief Scientist)
of: Bermuda Biological Station for Research (BBSR)
dataset: CTD station and Niskin bottle event log
dates: 24 June 2004 to 02 July 2004 (20040624-20040702)
location: N: 31.928 S: 29.773 W: -66.178 E: -64.082
project/cruise: EDDIES/WB0409 2004 Transect 1 (EDT1)
platform: R/V Weatherbird II

Methodology: none provided with data

Change history: YYYYMMDD

051213: downloaded original CTD station list from EDDIES data web site;
added to OCB database by Cyndy Chandler, OCB DMO;

OCB DMO Note: data were recovered from CTD station list

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Parameters

Parameter	Description	Units
event	unique sampling event number composite of UTC(GMT) date and time	YYYYMMDDhhmm
sta	station number	dimensionless
cast_type	CTD=CTD rosette bottle cast	dimensionless
date	start date of event (GMT)	YYYYMMDD
date_end	end date of event (GMT)	YYYYMMDD
DOY_1	day of year	YYYY.fraction
DOY_2	day of year	DDD.fraction
time_start	start time of event (GMT)	hhmm
time_end	end time of event (GMT)	hhmm
lat	latitude, negative denotes South recorded at start of cast	decimal degrees
lat_end	latitude, at end of cast	decimal degrees
lon	longitude, negative denotes West recorded at start of cast	decimal degrees
lon_end	longitude, at end of cast	decimal degrees
activity_and_comments	concatenated string: cruise_ID, sampling method, and 2 digit station	dimensionless
time	start time of event (GMT)	hhmm
Pmax_n	pressure, nominal, maximum for station	decibars
sta_ref	reference station indicator	dimensionless
sampling_code	sampling code for event concatenated string: cruise_ID, sampling method, 2 digit sta num, sta_ref and sampling type - where BCT = Bats, Carlson and Thorium	dimensionless
comments	comments, station location descriptor relative to eddy center	dimensionless

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Deployments

WB0409

Website	https://www.bco-dmo.org/deployment/57955
Platform	R/V Weatherbird II
Start Date	2004-06-23
End Date	2004-07-02
Description	<p>EDT1 2004 Transect 1 cruise Funded by: NSF OCE-0241310</p> <p>Methods & Sampling PI: Nick Bates (Chief Scientist) of: Bermuda Biological Station for Research (BBSR) dataset: CTD station and Niskin bottle event log dates: 24 June 2004 to 02 July 2004 (20040624-20040702) location: N: 31.928 S: 29.773 W: -66.178 E: -64.082 project/cruise: EDDIES/WB0409 2004 Transect 1 (EDT1) platform: R/V Weatherbird II Methodology: none provided with data Change history: YYMMDD 051213: downloaded original CTD station list from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO; OCB DMO Note: data were recovered from CTD station list</p>

WB0413

Website	https://www.bco-dmo.org/deployment/57960
Platform	R/V Weatherbird II
Start Date	2004-08-02
End Date	2004-08-11
Description	<p>EDT2 2004 Transect 2 cruise Funded by: NSF OCE-0241310</p> <p>Methods & Sampling PI: Nick Bates (Chief Scientist) of: Bermuda Biological Station for Research (BBSR) dataset: CTD station and Niskin bottle event log dates: 02 August 2004 to 11 August 2004 location: N: 31.817 S: 30.331 W: -66.406 E: -64.154 project/cruise: EDDIES/WB0413 2004 Transect 2 (EDT2) platform: R/V Weatherbird II Methodology: none provided with data Change history: YYYYMMDD 051213: downloaded original CTD cast list from EDDIES data web site added to OCB database by Cyndy Chandler, OCB DMO OCB DMO Note: data were recovered from CTD cast list</p>

WB0506

Website	https://www.bco-dmo.org/deployment/57963
Platform	R/V Weatherbird II
Start Date	2005-07-06
End Date	2005-07-15
Description	<p>EDT3 2005 Transect 1 cruise Funded by: NSF OCE-0241310</p> <p>Methods & Sampling PI: Nick Bates (Chief Scientist) of: Bermuda Biological Station for Research (BBSR) dataset: CTD station and Niskin bottle event log dates: 06 July 2005 to 15 July 2005 (20050706-20050715) location: N: 31.669 S: 30.174 W: -67.114 E: -64.168 project/cruise: EDDIES/WB0506 2005 Transect 1 (EDT3) platform: R/V Weatherbird II OCB DMO note: this cruise is also called EDDIES Transect #3 or EDT3 (EDDIES Transects 1 and 2 were done in 2004, 3 and 4 in 2005) Methodology: none provided with data Change history: YYYYMMDD 060308: downloaded x0506_station.txt from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO; PI note: The sta_ref parameter is the reference station indicator, mostly Oceanus master grid (20km spacing). Note, WBII station number is not included to avoid further confusion. Hence, locations need to be either WBII CTD station number or Oceanus grid number. Where Oceanus grid station does not exist then station will be described in terms of nearest station or some nominal eddy center. For the early part of the cruise station 2317 was deemed EC, then 2316 and finally probably located between 2315 2316 ,2256 and 2257.</p>

WB0508

Website	https://www.bco-dmo.org/deployment/57966
Platform	R/V Weatherbird II
Start Date	2005-08-17
End Date	2005-08-26
Description	<p>EDT4 2005 Transect 2 Funded by: NSF OCE-0241310</p> <p>Methods & Sampling PI: Nick Bates (Chief Scientist) of: Bermuda Biological Station for Research (BBSR) dataset: CTD station and Niskin bottle event log dates: 18 August 2005 to 25 August 2005 (20050818-20050825) location: N: 30.185 S: 29.723 W: -69.410 E: -67.744 project/cruise: EDDIES/WB0508 2005 Transect 2 (EDT4) platform: R/V Weatherbird II OCB DMO note: this cruise is also called EDDIES Transect #4 or EDT4 (EDDIES Transects 1 and 2 were done in 2004, 3 and 4 in 2005) Methodology: none provided with data Change history: YYMMDD 060308: downloaded x0508_station.txt from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO; PI note: The sta_ref parameter is the reference station indicator, mostly Oceanus master grid (20km spacing). Note, WBII station number is not included to avoid further confusion. Hence, locations need to be either WBII CTD station number or Oceanus grid number. Where Oceanus grid station does not exist then station will be described in terms of nearest station or some nominal eddy center (EC). For the early part of the cruise station 2070 was deemed EC, but after W-E transect it was obvious it had shifted. Appeared to have moved to the SW.</p>

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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

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 CO₂ 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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