Combined CTD station and Niskin bottle event logs from R/V Oceanus OC415-03 and R/V Weatherbird II WB0508 cruises in the Sargasso Sea in 2005 (EDDIES project)

Website: https://www.bco-dmo.org/dataset/3020
Version: 08 March 2006
Version Date: 2006-03-08

Project
» Eddies Dynamics, Mixing, Export, and Species composition (EDDIES)

Program
» Ocean Carbon and Biogeochemistry (OCB)

Contributors	Affiliation	Role
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Dataset Description

PI: Dennis McGillicuddy and Nick Bates
of: WHOI and BBSR
dataset: combined CTD station and Niskin bottle event logs
dates: 07 August 2005 to 25 August 2005 (20050807-20050825)
location: N: 33.064 S: 29.279 W: -69.410 E: -63.165
project/cruise: EDDIES 2005 Survey 2 OC415-3 and Transect 2 WB0508
platform: R/V OCEANUS and R/V WEATHERBIRD II

OCB DMO Note: data were merged from cruise event logs in OCB database (060308)
additional documentation is available with those logs;
The WB0508 cruise is also called EDDIES Transect #4 or EDT4
(EDDIES Transects 1 and 2 were done in 2004, 3 and 4 in 2005)

PI note: The sampling code sta_ref sub-string 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.

Related information:
070227: Courtney Ewart (UCSB) contributed a merged CTD map for OC415-3 and WB0508 that may help to determine relative CTD station locations (PDF file of 3 maps)

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Data Files

File
CTD_events_2005_S2.csv (Comma Separated Values (.csv), 8.78 KB) MD5:4b39d8d973c803c6ca1f8c22bb14736f Primary data file for dataset ID 3020

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Parameters

Parameter	Description	Units
event	unique sampling event number composite of UTC date and time	YYYYMMDDhhmm
date	start date of event (UTC)	YYYYMMDD
time	start time of event (UTC)	hhmm
lon	longitude, negative denotes West	decimal degrees
lat	latitude, negative denotes South	decimal degrees
sta	station number	dimensionless
Pmax	pressure, maximum during cast	decibars
sampling_code	concatenated string: cruise_ID, sampling method, 2 digit sta num, sta_ref and sampling type - where BCT = Bats, Carlson and Thorium P = CTD profile only (no bottles)	dimensionless
comments	comments, station location descriptor relative to eddy center	dimensionless

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Deployments

OC415-03

Website	https://www.bco-dmo.org/deployment/57965
Platform	R/V Oceanus
Report	http://ocb.whoi.edu/EDDIES/CRUISES/2005/OC415-3_CrRptDraft_091405.pdf
Start Date	2005-08-07
End Date	2005-08-26
Description	EDDIES project 2005 Survey 2 cruise Funded by: NSF OCE-0241310 Original cruise data are available from the NSF R2R data catalog

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	EDT4 2005 Transect 2 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

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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