One decibar-averaged CTD profiles from R/V Oceanus and R/V Weatherbird II cruises in the Sargasso Sea (EDDIES project)

Website: https://www.bco-dmo.org/dataset/3044
Version: 10 December 2008
Version Date: 2008-12-10

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
Ledwell, James R.	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
McGillicuddy, Dennis J.	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
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Dataset Description

CTD pressure, temperature, salinity profiles

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Data Files

File
ctd_OC404-01.csv (Comma Separated Values (.csv), 6.43 MB) MD5:547bd3ab7dcd52878f0bc4c0b12f61c7 version 1 November 2007 (original version 22 June 2005) PI: Dennis McGillicuddy EDDIES 2004 Survey 1 OC404-1 CTD profile data

File

ctd_OC404-04.csv (Comma Separated Values (.csv), 6.62 MB)
MD5:0f377757a8116199c81ccf63e3e0ac0f

version 01 November 2007
(original version 11 July 2005)

PI: Dennis McGillicuddy

EDDIES 2004 Survey 2 OC404-4 CTD profile data

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ctd_OC415-01.csv (Comma Separated Values (.csv), 7.29 MB)
MD5:1661a1e67cbea85efc080f55d61c8f26

version 22 December, 2005
PI: Dennis McGillicuddy (WHOI)

EDDIES 2005 Survey 1 OC415-1 CTD profile data

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ctd_OC415-02.csv (Comma Separated Values (.csv), 1.85 MB)
MD5:ab0e37903c7359be6ec50758ffab724a

version 15 February 2006
PI: Jim Ledwell (WHOI)

EDDIES 2005 Tracer 1 OC415-2 CTD profile data
processed during cruise by Cynthia Sellers (WHOI)

DMO note: date time lon and lat taken from CTD cast NMEA header

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ctd_OC415-03.csv (Comma Separated Values (.csv), 10.30 MB)
MD5:a7530b194e0d61e85a3918089294cfed

version 17 February 2006
PI: Dennis McGillicuddy (WHOI)

EDDIES 2005 Survey 2 OC415-3 CTD profile data

DMO note: date time lon and lat taken from CTD cast NMEA header

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ctd_OC415-04.csv (Comma Separated Values (.csv), 3.47 MB)
MD5:21bcee55cb1e0febb7e01ccfb13d9167

version 01 March 2007
PI: Jim Ledwell (WHOI)

EDDIES 2005 Tracer 2 OC415-4 CTD profile data
processed during cruise by Cynthia Sellers (WHOI)

DMO note: date time lon and lat taken from CTD cast NMEA header
           event number is from cruise event log

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ctd_WB0409.csv (Comma Separated Values (.csv), 1.26 MB)
MD5:c3468d0937944f7b3069cf3890738d0e

version 10 December 2008
PI: Nick Bates

CTD profile data
WB0409 EDDIES Transect 1

<table>
<tr><td colspan="3">File</td></tr>
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File

ctd_WB0413.csv　(Comma Separated Values (.csv), 1.06 MB)
MD5:5ab8ba961b76c88233058c3fe179e8d6

version 08 March 2006
PI: Nick Bates

CTD profile data
WB0413 EDDIES Transect 2

Parameters

Parameter	Description	Units
event	unique sampling event number	YYYYMMDDhhmm
date	start date of event (GMT)	YYYYMMDD
time	start time of event (GMT)	hhmm
lon	longitude, negative denotes West	decimal degrees
lat	latitude, negative denotes South	decimal degrees
Pmax	pressure, maximum during cast	decibars
sta	station number	dimensionless
press	pressure, from CTD	decibars
depth	depth, calculated from pressure	meters
temp	temperature, from CTD, ITS-90 (from primary T0 sensor)	degrees Celsius
potemp	potential temperature, ITS-90 (from primary T0,C0 sensors)	degrees Celsius
sal	salinity, from CTD, PSS-78 (PSU) (from primary T0,C0 sensors)	dimensionless
sigma_0	sigma theta (potential density) (from primary T0,C0 sensors)	kilograms/meter^3

temp_S	temperature, from CTD, ITS-90 (from secondary T1 sensor)	degrees Celsius
sal_S	salinity, from CTD, PSS-78 (PSU) (from secondary T1,C1 sensors)	dimensionless
sigma_S	sigma theta (potential density) (from secondary T1,C1 sensors)	kilograms/meter^3
cond	conductivity, from CTD (from primary C0 sensor)	Siemens/meter
cond_S	conductivity, from CTD (from secondary C1 sensor)	Siemens/meter
O2_ml_L	oxygen, dissolved from SBE CTD	milliliters/liter
fluor_chla	fluorescence, from CTD profiler WET Labs ECO-AFL/FL sensor, rescaled units are numerically equivalent to chlorophyll-a concentrations	micrograms/liter
PAR	irradiance, Biospherical/Licor	microEinsteins/meter^2/second
SPAR	surface irradiance	microEinsteins/meter^2/second
trans	light transmission from Chelsea/Seatech/Wetlab CStar 0.000 indicates missing or no data	percent/100
sigma_0_S	sigma theta (potential density) (from secondary T1,C1 sensors)	kilograms/meter^3
O2_umol_kg	oxygen, dissolved from SBE CTD	micromoles/kilogram
turb	seapoint turbidity meter data	FTU
O2_mg_L	oxygen, dissolved from SBE 43	milligrams/liter
fluor	fluorescence, (wetlabs eco)	micrograms/liter
O2_ml_L_S	oxygen, dissolved (secondary)	milliliters/liter
sigma_t	sigma -T (density) from primary cond and temp	kilograms/meter^3

Instruments

Dataset-specific Instrument Name	CTD Sea-Bird SBE 911plus
Generic Instrument Name	CTD Sea-Bird SBE 911plus
Dataset-specific Description	SBE 911/917 plus CTD Pressure, Digiquartz with TC dual Temperature and Conductivity sensors Fluorometer, Wetlab ECO-AFL/FL PAR/Irradiance, Biospherical/Licor Transmissometer, Chelsea/Seatech/Wetlab CStar ISUS_NO3 Oxygen, SBE 43 SPAR/Surface Irradiance
Generic Instrument Description	The Sea-Bird SBE 911 plus is a type of CTD instrument package for continuous measurement of conductivity, temperature and pressure. The SBE 911 plus includes the SBE 9plus Underwater Unit and the SBE 11plus Deck Unit (for real-time readout using conductive wire) for deployment from a vessel. The combination of the SBE 9 plus and SBE 11 plus is called a SBE 911 plus. The SBE 9 plus uses Sea-Bird's standard modular temperature and conductivity sensors (SBE 3 plus and SBE 4). The SBE 9 plus CTD can be configured with up to eight auxiliary sensors to measure other parameters including dissolved oxygen, pH, turbidity, fluorescence, light (PAR), light transmission, etc.). more information from Sea-Bird Electronics

Dataset-specific Instrument Name	LI-COR Biospherical PAR Sensor
Generic Instrument Name	LI-COR Biospherical PAR Sensor
Generic Instrument Description	The LI-COR Biospherical PAR Sensor is used to measure Photosynthetically Available Radiation (PAR) in the water column. This instrument designation is used when specific make and model are not known.

Dataset-specific Instrument Name	SBE 43 Dissolved Oxygen Sensor
Generic Instrument Name	Sea-Bird SBE 43 Dissolved Oxygen Sensor
Generic Instrument Description	The Sea-Bird SBE 43 dissolved oxygen sensor is a redesign of the Clark polarographic membrane type of dissolved oxygen sensors. more information from Sea-Bird Electronics

Dataset-specific Instrument Name	Transmissometer
Generic Instrument Name	Transmissometer
Generic Instrument Description	A transmissometer measures the beam attenuation coefficient of the lightsource over the instrument's path-length. This instrument designation is used when specific manufacturer, make and model are not known.

Dataset-specific Instrument Name	Wet Labs ECO-AFL/FL Fluorometer
Generic Instrument Name	Wet Labs ECO-AFL/FL Fluorometer
Generic Instrument Description	The Environmental Characterization Optics (ECO) series of single channel fluorometers delivers both high resolution and wide ranges across the entire line of parameters using 14 bit digital processing. The ECO series excels in biological monitoring and dye trace studies. The potted optics block results in long term stability of the instrument and the optional anti-biofouling technology delivers truly long term field measurements. more information from Wet Labs

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Deployments

OC404-01

Website	https://www.bco-dmo.org/deployment/57956
Platform	R/V Oceanus
Report	http://ocb.whoi.edu/EDDIES/CRUISES/2004/OC404-1_Draft_Cruise_Report.pdf
Start Date	2004-06-11
End Date	2004-07-03
Description	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) **Methods & Sampling** PI: Dennis McGillicuddy of: Woods Hole Oceanographic Institution (WHOI) dataset: CTD pressure, temperature, salinity profiles dates: 12 June 2004 to 03 July 2004 (20040612-20040703) location: N: 37.934 S: 29.777 W: -68.703 E: -58.754 project/cruise: EDDIES/OC404-1 2004 Survey 1 platform: R/V Oceanus Methodology The processing notes are also available as a single PDF file: Methods as a PDF. Change history: YYMMDD 050622: downloaded original *.cdn files from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO 060320: downloaded original *.cdn files from EDDIES data web site; save all data columns and compute depth, potemp and density 071101: downloaded June 2007 reprocessed *.cdn files from EDDIES data web site; save all data columns and compute depth and potemp; ISUS Nitrate sensor data removed; no PAR sensor for sta 9; added to OCB database by Cyndy Chandler (BCO-DMO, WHOI) OCB DMO Note: Data were recovered from Seabird *.cdn files and are reported as 1 dbar pressure sorted profiles. Data from both primary (T0 and C0) and secondary (T1 and C1) sensors are included. Secondary sensor parameter names all end in "_S"; data values originally reported as voltages were reprocessed in June 2007 and the units are reflected below; no PAR sensor on CTD unit during station 9

OC404-04

Website	https://www.bco-dmo.org/deployment/57961
Platform	R/V Oceanus
Report	http://ocb.whoi.edu/EDDIES/CRUISES/2004/OC404-4_Draft_Cruise_Report.pdf
Start Date	2004-07-25
End Date	2004-08-12
Description	EDDIES project 2004 Survey 2 cruise Funded by: NSF OCE-0241310 Original cruise data are available from the NSF R2R data catalog **Methods & Sampling** PI: Dennis McGillicuddy of: Woods Hole Oceanographic Institution (WHOI) dataset: CTD pressure, temperature, salinity profiles (68 stations) dates: 26 July 2004 to 11 August 2004 (20040726-20040811) location: N: 31.942 S: 29.958 W: -66.603 E: -59.450 project/cruise: EDDIES/OC404-4 2004 Survey 2 platform: R/V Oceanus Methodology Change history: YYMMDD 050711: downloaded original data from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO 060320: save all data columns and compute depth, potemp and density 071101: downloaded June 2007 reprocessed *.cdn files from EDDIES data web site; save all data columns and compute depth and potemp; added to OCB database by Cyndy Chandler (BCO-DMO, WHOI) OCB DMO Note: Data were recovered from Seabird *.cdn files and are reported as 1 dbar pressure sorted profiles. Data from both primary (T0 and C0) and secondary (T1 and C1) sensors are included. Secondary sensor parameter names all end in "_S"; data values originally reported as voltages were reprocessed in June 2007 and the units are reflected below

OC415-01

Website	https://www.bco-dmo.org/deployment/57962
Platform	R/V Oceanus
Report	http://ocb.whoi.edu/EDDIES/CRUISES/2005/OC415_Draft_Cruise_Report_050722.pdf
Start Date	2005-06-20
End Date	2005-07-15
Description	EDDIES project 2005 Survey 1 cruise Funded by: NSF OCE-0241310 Original cruise data are available from the NSF R2R data catalog **Methods & Sampling** PI: Dennis McGillicuddy of: Woods Hole Oceanographic Institution (WHOI) dataset: CTD profiles; pres, temp, salinity, etc. dates: 20 June 2005 to 15 July 2005 location: N: 40.753 S: 28.733 W: -70.546 E: -61.920 project/cruise: EDDIES/OC415-1 2005 Survey 1 platform: R/V Oceanus Methodology Change history: YYMMDD 051221: downloaded original data from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO 070524: units confirmed via email by Larry Anderson (WHOI) OCB DMO Note: Data were recovered from Seabird *.cdn files and are reported as 1 dbar pressure sorted profiles. Data from both primary (T0 and C0) and secondary (T1 and C1) sensors are included, as well as their derived parameters, salinity and density. Secondary sensor parameter names all end in "_S".

OC415-02

Website	https://www.bco-dmo.org/deployment/57964
Platform	R/V Oceanus
Start Date	2005-07-18
End Date	2005-08-04
Description	EDDIES project 2005 Tracer 1 cruise Funded by: NSF OCE-0241310 Original cruise data are available from the NSF R2R data catalog **Methods & Sampling** PI: Jim Ledwell (Chief Scientist) of: Woods Hole Oceanographic Institution (WHOI) dataset: CTD profiles; pres, temp, salinity, etc. dates: 19 July 2005 to 01 August 2005 (20050719-20050801) location: N: 30.785 S: 28.306 W: -67.826 E: -66.576 project/cruise: EDDIES/OC415-2 2005 Tracer 1 platform: R/V Oceanus Methodology Change history: YYMMDD 050906: downloaded original data from EDDIES data web site; added to OCB database by Cyndy Chandler, OCB DMO 070524: units confirmed via email by Larry Anderson (WHOI) Map: CTD cast locations and without casts 19 and 20 OCB DMO Note: Data were recovered from Seabird *.cnv files and are reported as 1 dbar pressure sorted profiles. Data from both primary (T0 and C0) and secondary (T1 and C1) sensors are included. Secondary sensor parameter names all end in "_S".

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 **Methods & Sampling** PI: Dennis McGillicuddy of: Woods Hole Oceanographic Institution (WHOI) dataset: CTD profiles; pres, temp, salinity, etc. dates: 07 August 2005 to 25 August 2005 (20050807-20050825) location: N: 33.064 S: 29.279 W: -69.409 E: -63.165 project/cruise: EDDIES/OC415-3 2005 Survey 2 platform: R/V Oceanus Methodology Change history: YYMMDD 051221: downloaded original data from EDDIES data web site; 060217: added to OCB database by Cyndy Chandler, OCB DMO 070524: units confirmed via email by Larry Anderson (WHOI) OCB DMO Note: Data were recovered from Seabird *.cdn files and are reported as 1 dbar pressure sorted profiles. Data from both primary (T0 and C0) and secondary (T1 and C1) sensors are included, as well as their derived parameters, salinity and density. Secondary sensor parameter names all end in "_S". Warning: this dataset includes poor quality conductivity values

OC415-04

Website	https://www.bco-dmo.org/deployment/57967
Platform	R/V Oceanus
Report	http://ocb.whoi.edu/EDDIES/CRUISES/2005/OC415-4_cruise_report.pdf
Start Date	2005-08-29
End Date	2005-09-15
Description	EDDIES project 2005 Tracer 2 cruise Funded by: NSF OCE-0241310 The cruise end date was originally entered as 9/14/2005 (source: UNOLS final ship schedule), but this was changed in February 2015 to end date 9/15/2005. The official record from the vessel operator shows the end date being 9/15/2015. Original cruise data are available from the NSF R2R data catalog

Methods & Sampling
PI: Jim Ledwell (Chief Scientist) of: Woods Hole Oceanographic Institution (WHOI) dataset: CTD profiles; pres, temp, salinity, etc. dates: 31 August 2005 to 11 September 2005 (20050831-20050911) location: N: 30.460 S: 29.558 W: -70.382 E: -69.200 project/cruise: EDDIES/OC415-4 2005 Tracer 2 platform: R/V Oceanus Methodology Change history: YYMMDD 051221: downloaded original CTD data files from EDDIES data web site; 060301: added to OCB database by Cyndy Chandler, OCB DMO 070301: replaced with new data from Olga Kosnyreva (WHOI); revised oxygen calibrations applied 070524: units confirmed via email by Larry Anderson (WHOI) OCB DMO Note: Data were recovered from Seabird *.cdn files and are reported as 1 dbar pressure sorted profiles. Data from both primary (T0 and C0) and secondary (T1 and C1) sensors are included. Secondary sensor parameter names all end in "_S". PAR irradiance data (Biospherical/Licor) were recorded during acquisition, but all values were 2.2802e-01, so those data were not loaded into this database. |

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	EDT1 2004 Transect 1 cruise Funded by: NSF OCE-0241310

Methods & Sampling
PI: Nick Bates of: Bermuda Biological Station for Research (BBSR) dataset: CTD profiles; pres, temp, salinity, etc. dates: 24 June 2004 to 02 July 2004 (20040624-20040702) location: N: 31.928 S: 29.779 W: -66.178 E: -64.082 project/cruise: EDDIES/WB0409 2004 Transect 1 (EDT1) platform: R/V Weatherbird II Methodology: see Chapter 3: CTD & Related Measurements in U.S. JGOFS BATS Method Manual Version 4 (1997). Bermuda Atlantic Time-Series Study April 1997. Anthony H. Knap, Anthony F. Michaels et al., 136 pp. (link to BATS Method Manual version 4 local copy) Change history: YYMMDD 060307: downloaded x0409c*f.dat files from EDDIES data web site added to OCB database by Cyndy Chandler, OCB DMO; event, date, time, lon and lat are from CTD cast list; "unused" field (all -9.990) removed from data; potential temperature derived using MATLAB PhyPropSW routine [sw_ptmp.m] 081210: Pmax values corrected. OCB DMO Note: all data are from primary sensors unless noted Caution: this data set is considered final, but oxygen, conductivity and it's derived parameters have not yet had field calibrations applied. Still need documentation for these data: (no units were specified, DMO is guessing at all of them) ?? assuming salinity scale is PSS-78; and depth calculated from CTD pressure; assuming temp scale ITS-90 (not IPTS-68); guessing units for cond = S/m and CTD O2 = umol/kg guessing density is sigma-t (and not sigma-theta) |

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	EDT2 2004 Transect 2 cruise Funded by: NSF OCE-0241310 **Methods & Sampling** PI: Nick Bates of: Bermuda Biological Station for Research (BBSR) dataset: CTD profiles; pres, temp, salinity, etc. dates: 02 August 2004 to 11 August 2004 (20040802-20040811) location: N: 31.761 S: 30.331 W: -66.406 E: -64.164 project/cruise: EDDIES/WB0413 2004 Transect 2 (EDT2) platform: R/V Weatherbird II Methodology: see Chapter 3: CTD & Related Measurements in U.S. JGOFS BATS Method Manual Version 4 (1997). Bermuda Atlantic Time-Series Study April 1997. Anthony H. Knap, Anthony F. Michaels et al., 136 pp. (link to BATS Method Manual version 4 local copy) Change history: YYMMDD 060308: downloaded x0413c*f.dat files from EDDIES data web site added to OCB database by Cyndy Chandler, OCB DMO; event, date, time, lon and lat are from CTD cast list; "unused" field (all -9.990) removed from data; potential temperature derived using MATLAB PhyPropSW routine [sw_ptmp.m] OCB DMO Note: all data are from primary sensors unless noted Caution: this data is considered final, but oxygen, conductivity and it's derived parameters have not yet had field calibrations applied. Still need documentation for this data: (no units were specified, DMO is guessing at all of them) ?? assuming salinity scale is PSS-78; and depth calculated from CTD pressure; assuming temp scale ITS-90 (not IPTS-68); guessing units for cond = S/m and CTD O2 = umol/kg guessing density is sigma-t (and not sigma-theta)

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

Andrews, J.E., Hartin, C., and Buesseler, K.O.. "7Be Analyses in Seawater by Low Background Gamma-Spectroscopy.," Journal of Radioanalytical and Nuclear Chemistry, v.277, 2008, p. 253.

Andrews, J.E., Hartin, C., Buesseler, K.O.. "7Be Analyses in Seawater by Low Background Gamma-Spectroscopy," Journal of Radioanalytical and Nuclear Chemistry, v.277, 2008, p. 253.

Benitez-Nelson, C.R. and McGillicuddy, D.J.. "Mesoscale Physical-Biological-Biogeochemical Linkages in the Open Ocean: An Introduction to the Results of the E-Flux and EDDIES Programs.," Deep Sea Research II, v.55, 2008, p. 1133.

Benitez-Nelson, C.R. and McGillicuddy, D.J.. "Mesoscale Physical-Biological-Biogeochemical Linkages in the Open Ocean: An Introduction to the Results of the E-Flux and EDDIES Programs," Deep-Sea Research II, v.55, 2008, p. 1133.

Bibby, T.S., Gorbunov, M.Y., Wyman, K.W., Falkowski, P.G.. "Photosynthetic community responses to upwelling in mesoscale eddies in the subtropical North Atlantic and Pacific Oceans," Deep-Sea Research Part II: Topical Studies in Oceanography, v.55, 2008, p. 1310.

Buesseler, K.O., Lamborg, C., Cai, P., Escoube, R., Johnson, R., Pike, S., Masque, P., McGillicuddy, D.J., Verdeny, E.. "Particle Fluxes Associated with Mesoscale Eddies in the Sargasso Sea," Deep Sea Research II, v.55, 2008, p. 1426.

Carlson, C.A., del Giorgio, P., Herdl, G.. "Microbes and the dissipation of energy and respiration: From cells to ecosystems," Oceanography, v.20, 2007, p. 89.

Davis, C.S., and McGillicuddy, D.J.. "Transatlantic Abundance of the N2-Fixing Colonial Cyanobacterium Trichodesmium," Science, v.312, 2006, p. 1517.

Ewart, C.S., Meyers, M.K., Wallner, E., McGillicuddy, D.J., Carlson, C.A.. "Microbial Dynamics in Cyclonic and Anticyclonic Mode-Water Eddies in the Northwestern Sargasso Sea," Deep Sea Research II, v.55, 2008, p. 1334.

Ewart, C.S., Meyers, M.K., Wallner, E., McGillicuddy, D.J., Carlson, C.A.. "Microbial Dynamics in Cyclonic and Anticyclonic Mode-Water Eddies in the Northwestern Sargasso Sea," Deep-Sea Research II, v.55, 2008, p. 1334.

Goldthwait, S.A. and Steinberg, D.K.. "Elevated biomass of mesozooplankton and enhanced fecal pellet flux in cyclonic and mode-water eddies in the Sargasso Sea," Deep-Sea Research Part II: Topical Studies in Oceanography, v.55, 2008, p. 1360.

Greenan, B.J.W.. "Shear and Richardson number in a mode-water eddy," Deep-Sea Research Part II: Topical Studies in Oceanography, v.55, 2008, p. 1161.

Jenkins, W.J., McGillicuddy, D.J., and Lott III, D.E.. "The Distributions of, and Relationship Between 3 He and Nitrate in Eddies," Deep Sea Research II, v.55, 2008, p. 1389.

Jenkins, W.J., McGillicuddy, D.J., Lott III, D.E.. "The Distributions of, and Relationship Between 3 He and Nitrate in Eddies," Deep-Sea Research II, v.55, 2008, p. 1389.

Ledwell, J.R., McGillicuddy, D.J., and Anderson, L.A.. "Nutrient Flux into an Intense Deep Chlorophyll Layer in a Mode-water Eddy.," Deep Sea Research II, v.55, 2008, p. 1139.

Ledwell, J.R., McGillicuddy, D.J., Anderson, L.A.. "Nutrient Flux into an Intense Deep Chlorophyll Layer in a Mode-water Eddy," Deep-Sea Research II, v.55, 2008, p. 1139.

Li, Q.P. and Hansell, D.A.. "Intercomparison and coupling of MAGIC and LWCC techniques for trace analysis of phosphate in seawater," Analytical Chemica Acta, v.611, 2008, p. 68.

Li, Q.P., Hansell, D.A., McGillicuddy, D.J., Bates, N.R., Johnson, R.J.. "Tracer-based assessment of the origin and biogeochemical transformation of a cyclonic eddy in the Sargasso Sea," Journal of Geophysical Research, v.113, 2008, p. 10006.

Li, Q.P., Hansell, D.A., Zhang, J.-Z.. "Underway monitoring of nanomolar nitrate plus nitrite and phosphate in

oligotrophic seawater," Limnology and Oceanography: Methods, v.6, 2008, p. 319.

Li, Q.P., Zhang, J.-Z., Millero, F.J., Hansell, D.A.. "Continuous colorimetric determination of trace ammonium in seawater with a long-path liquid waveguide capillary cell," Marine Chemistry, v.96, 2005, p. 73.

McGillicuddy, D.J., et. al.. "Eddy/Wind Interactions Stimulate Extraordinary Mid-Ocean Plankton Blooms," Science, v.316, 2007, p. 1021.

McGillicuddy, D.J., Ledwell, J.R., and Anderson, L.A.. "Response to Comment on "Eddy/Wind Interactions Stimulate Extraordinary Mid-Ocean Plankton Bloom".," Science, v.320, 2008.

McGillicuddy, D.J., Ledwell, J.R., Anderson, L.A.. "Response to Comment on "Eddy/Wind Interactions Stimulate Extraordinary Mid-Ocean Plankton Bloom"," Science, v.320, 2008.

McGillicuddy, et. al.. "Eddy/Wind Interactions Stimulate Extraordinary Mid-Ocean Plankton Blooms.," Science, v.316, 2007, p. 1021.

Mourino B., and McGillicuddy, D.J.. "Mesoscale Variability in the Metabolic Balance of the Sargasso Sea," Limnology & Oceanography, v.51, 2006, p. 2675.

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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