

CTD profile data collected from cruises AT11-17, AT11-30, TN200, TUIM14MV, W0306A, W0308C from the Coastal Waters off Washington State and Vancouver Island; 2003-2006 (ECOHAB-PNW project)

Website: <https://www.bco-dmo.org/dataset/3232>

Version: 17 August 2010

Version Date: 2010-08-17

Project

» [ECOHAB - Pacific Northwest](#) (ECOHAB-PNW)

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Dataset Description

Final processed CTD data for the cruises associated with the ECOHAB-PNW Project.

Methods & Sampling

Refer to individual platform deployments for details on instrumentation and data acquisition.

Data Processing Description

Refer to individual platform deployments for details on CTD data processing.

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Data Files

File
CTD_Profiles.csv (Comma Separated Values (.csv), 47.14 MB) MD5:68d97c2d6e3415a92fe568eb4794150c
Primary data file for dataset ID 3232

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Parameters

Parameter	Description	Units
Cruise	RISE Project Cruise Id	text
CruiseID_CTD	RISE CTD Data Specific Cruise Id	text
station	Cast	integer
type	Station Type	text
date	Date (GMT)	YYYYMMDD
time	Time (GMT)	HHMMSS
lon	longitude (West is negative)	Decimal degrees
lat	latitude (South is negative)	Decimal degrees
depth_bot	Bottom Depth	meters
PRESSURE	Pressure	decibars
TEMPERATURE	Temperature (Primary)	degrees celsius
TEMPERATURE2	Secondary Temperature	degrees celsius
fluorometer_raw	rFv = raw Fluorometer volts	volts
Chlorophyll_A	Chlorophyll-A = Sea Tech/Wetlabs FLF Fluorometer measuremen	ugrams/l
Transmissometry	Transmission (light) Percent per meter	percentage
OXYGEN_ml	O= Dissolved Oxygen concentration from SeaBird SBE43 oxygen sensor; uncorrected by sampling.	ml/l
OXYGEN_umol	O= Dissolved Oxygen concentration from SeaBird SBE43 oxygen sensor; uncorrected by sampling.	umol/kg
PAR	PAR = Irradiance; Photosynthetically Activated Radiation (a measure of light intensity)	$\mu\text{Ein m}^{-2} \text{s}^{-1}$
SALINITY	Salinity (Primary) (corrected)	PSU
SALINITY2	Secondary Salinity (corrected)	PSU
TEMP_POTENTIAL	Potential Temperature (PT) calculated from T and pressure	degrees celsius
SIGMA_T	density; sigma-t calculated from salinity; T1; Sal1 and pressure)	kg m^{-3}
SIGMA_THETA	density; sigma-t calculated from salinity; T1; Sal1 and pressure)	kg m^{-3}
DYNAMIC_METERS	Dynamic Height (Dyn-m)	Dyn-m
Attenuation	(Beam) Attenuation (light)	m^{-1}

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Instruments

Dataset-specific Instrument Name	CTD Seabird 911
Generic Instrument Name	CTD Sea-Bird 911
Dataset-specific Description	W0306A, W0308C The data were collected using the Wecoma's SBE911+ system with dual Temperature and Conductivity sensors, a SeaTech fluorometer sensor, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. AT11-17, AT11-50 The data were collected using the Atlantis' SBE911+ system with dual Temperature and conductivity sensors, a Wetlab ECO-AFL/FL fluorometer sensor, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. TUIM14MV The data were collected using the Melville's SBE911+ system with dual Temperature and conductivity sensors, a Chelsea/Seatech/Wetlabs CStar fluorometer sensor, Chelsea/Wetlabs Transmissometer, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. TN200 The data was collected using the Thompson's SBE911+ system with dual Temp and conductivity sensors, a Wetlab ECO-AFL/FL Fluorometer, WetLabs CSTAR transmissometer, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor.
Generic Instrument Description	The Sea-Bird SBE 911 is a type of CTD instrument package. The SBE 911 includes the SBE 9 Underwater Unit and the SBE 11 Deck Unit (for real-time readout using conductive wire) for deployment from a vessel. The combination of the SBE 9 and SBE 11 is called a SBE 911. The SBE 9 uses Sea-Bird's standard modular temperature and conductivity sensors (SBE 3 and SBE 4). The SBE 9 CTD can be configured with 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
Dataset-specific Description	Biospherical Instruments 4-pi light intensity sensor (PAR)
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	Sea Tech Fluorometer
Generic Instrument Name	Sea Tech Fluorometer
Dataset-specific Description	Sea Tech/Wetlabs FLF fluorometer (chlorophyll)
Generic Instrument Description	The Sea Tech chlorophyll-a fluorometer has internally selectable settings to adjust for different ranges of chlorophyll concentration, and is designed to measure chlorophyll-a fluorescence in situ. The instrument is stable with time and temperature and uses specially selected optical filters enabling accurate measurements of chlorophyll a. It can be deployed in moored or profiling mode. This instrument designation is used when specific make and model are not known. The Sea Tech Fluorometer was manufactured by Sea Tech, Inc. (Corvallis, OR, USA).

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	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

Dataset-specific Instrument Name	Wet Labs CSTAR Transmissometer
Generic Instrument Name	WET Labs {Sea-Bird WETLabs} C-Star transmissometer
Generic Instrument Description	The C-Star transmissometer has a novel monolithic housing with a highly integrated opto-electronic design to provide a low cost, compact solution for underwater measurements of beam transmittance. The C-Star is capable of free space measurements or flow-through sampling when used with a pump and optical flow tubes. The sensor can be used in profiling, moored, or underway applications. Available with a 6000 m depth rating. More information on Sea-Bird website: https://www.seabird.com/c-star-transmissometer/product?id=6076246717

Deployments

AT11-17

Website	https://www.bco-dmo.org/deployment/58003
Platform	R/V Atlantis
Report	http://bcodata.whoi.edu/ECOHAB_PNW/ECOHAB_Cruise3_Report.pdf
Start Date	2004-09-08
End Date	2004-09-28
Description	<p>AT11-17: This is ECOHAB_3 (ECOHAB Cruise 3). Third cruise of the 6 ECOHAB-PNW cruises. Numbered sequentially from Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6. Original cruise data are available from the NSF R2R data catalog</p> <p>Methods & Sampling</p> <p>The data were collected using the Atlantis' SBE911+ system with dual Temperature and conductivity sensors, a Wetlab ECO-AFL/FL fluorometer sensor, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. Link to NODC Data Form 24-13 for Atlantis cruise number AT11-17 CTD Data Submission File: an1117_con_rept.txt Date: 11/30/2008 Instrument configuration file: F:confilesAN1117ctd018.con Configuration report for SBE 911plus/917plus CTD ----- ----- Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : RS-232C Scans to average : 1 Surface PAR voltage added : Yes NMEA position data added : Yes Scan time added : No 1) Frequency 0, Temperature Serial number : 2446 Calibrated on : 5-11-04 G : 4.37266086e-003 H : 6.48722827e-004 I : 2.40891324e-005 J : 2.26701934e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 2148 Calibrated on : 5-11-04 G : -1.04026033e+001 H : 1.41916517e+000 I : 5.54106781e-004 J : 3.32324209e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 58939 Calibrated on : 30 apr 2001 C1 : -4.928049e+004 C2 : -5.591409e-001 C3 : 1.510530e-002 D1 : 3.994470e-002 D2 : 0.000000e+000 T1 : 3.017493e+001 T2 : -4.671701e-004 T3 : 3.967900e-006 T4 : 3.098920e-009 T5 : 0.000000e+000 Slope : 1.00000000 Offset : 0.00000 AD590M : 1.135000e-002 AD590B : -8.132450e+000 4) Frequency 3, Temperature, 2 Serial number : 2265 Calibrated on : 11-May-04 G : 4.33190889e-003 H : 6.44107823e-004 I : 2.37558645e-005 J : 2.26964688e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 2077 Calibrated on : 16-July-04 G : -1.02565600e+001 H : 1.47987624e+000 I : -5.25035158e-003 J : 4.81904318e-004 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 6) A/D voltage 0, Fluorometer, Wetlab ECO-AFL/FL Serial number : 008 Calibrated on : 9-21-01 Vblank : 0.0000 Scale factor : 1.00000000e+000 7) A/D voltage 1, Free 8) A/D voltage 2, PAR/Irradiance, Biospherical/Licor Serial number : 4617 Calibrated on : M : 1.00000000 B : 0.00000000 Calibration constant : 2000000000.00000000 Multiplier : 1.00000000 Offset : -0.74800000 9) A/D voltage 3, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : CST-536DR Calibrated on : 4-30-2002 M : 20.6156 B : 1.1514 Path length : 0.250 10) A/D voltage 4, Oxygen, SBE 43 Serial number : 0712 Calibrated on : 7-6-04 Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 3.3380e-001 Boc : 0.0000 Offset : -0.5126 Tcor : 0.0020 Pcor : 1.35e-004 Tau : 0.0 Coefficients for Murphy-Larson: Soc : 0.00000e+000 Offset : 0.00000e+000 A : 0.00000e+000 B : 0.00000e+000 C : 0.00000e+000 E : 0.00000e+000 Tau : 0.00000e+000 11) A/D voltage 5, Free 12) A/D voltage 6, Altimeter Serial number : Calibrated on : Scale factor : 14.715 Offset : 0.000 13) A/D voltage 7, OBS, Seapoint Turbidity Serial number : Calibrated on : Gain setting : 100 x Scale factor : 1.000 14) SPAR voltage, Unavailable 15) SPAR voltage, SPAR/Surface Irradiance Serial number : Calibrated on : Conversion factor : 1.00000000 Ratio multiplier : 1.00000000</p> <p>Processing Description</p> <p>The data were initially processed aboard ship using SeaBird's processing with their standard, recommended parameters. The procedure used for quality control and calibration post processing follows that developed at NOAA's Pacific Marine Environmental Laboratory in the Eco-FOCI (Fisheries and Oceanography coordinated Investigations). Each cast was then inspected for reasonableness and for spikes using the criterion that for 1-m bin data, sigma-t inversions > 0.02 were unacceptable. Temperature or conductivity values causing such</p>

inversions were removed and the result data gaps were linearly interpolated. Due to the Atlantis' method for conducting CTD deployment during the first 135 casts, many values for variables (T, Sal, Fluorescence, Oxygen) at the top of the profiles needed to be discarded in the top few meters. The ship's method was to turn the CTD on while the instruments were on deck. On some of those casts, significant spiking to 15-18m occurred. After cast 135 a better methodology for conducting CTD casts was instated. This procedure involves taking the CTD to 10m, then the pump is tuned on. After 1-2 minutes the CTD is brought to the surface and the cast is begun. Using his method resulted in a big improvement in the quality of near surface measurements. Water samples, taken approximately every third station, were taken to calibrate salinity. The results were compared to data measured by the CTD sensor to determine the offset of the CTD data. After the salinity calibration was applied, densities, and dynamic heights were recalculated.

http://bcodata.whoi.edu/ECOHAB_PNW/NODC_DataDocForm_EH3b.pdf">Link to NODC Data Form 24-13 for Atlantis cruise number AT11-17 CTD Data Submission BCO-DMO Processing/Edits Original ".txt" file imported into spreadsheet ECOHAB-PNW master cruise id added to dataset for compatibility with other ECOHAB-PNW datasets Supplied cruise parameter retained as CruiseId_CTD Additional parameters added for overall standardization between ECOHAB-PNW CTD datasets These parameters have "nd" (no data) entered for values » Parameter names modified to conform to BCO-DMO convention Some renamed to BCO-DMO standard (date, time, lat, lon) Spaces removed or replaced with underscores Duplicate parameter names individualized Parameter units removed from names Single Date/Time parameter split into two parameters (date and time) date reformatted to YYYYMMDD time reformatted to HHMMSS Longitude converted signed for West longitude (negative) by subtracting 360.0 from supplied value Data values padded with decimal places as appropriate Error values changed to BCO-DMO standard of "nd" "9999" changed to "nd" "-1.00E+10" changed to "nd"

AT11-30

Website	https://www.bco-dmo.org/deployment/58004
Platform	R/V Atlantis
Report	http://bcodata.whoi.edu/ECOHAB_PNW/ECOHAB_Cruise4_Report.pdf
Start Date	2005-07-07
End Date	2005-07-27
	<p>AT11-30: This is ECOHAB_4 (ECOHAB Cruise 4). Fourth cruise of the 6 ECOHAB-PNW cruises. Numbered sequentially from Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6 Original cruise data are available from the NSF R2R data catalog</p> <p>Methods & Sampling</p> <p>The data were collected using the Atlantis' SBE911+ system with dual Temperature and conductivity sensors, a Wetlab ECO-AFL/FL fluorometer sensor, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. Link to NODC Data Form 24-13 for Atlantis cruise number AT11-30 CTD Data Submission File: an1130_con_rept.txt Date: 11/30/2008 Instrument configuration file: F:confilesAN1130at224.con Configuration report for SBE 911plus/917plus CTD ----- ----- Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : RS-232C Scans to average : 1 Surface PAR voltage added : Yes NMEA position data added : Yes Scan time added : No 1) Frequency 0, Temperature Serial number : 2271 Calibrated on : 5-21-05 G : 4.33370545e-003 H : 6.41092283e-004 I : 2.32179131e-005 J : 2.16704788e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 2584 Calibrated on : 11-3-04 G : -1.04645617e+001 H : 1.58080404e+000 I : -5.30548516e-005 J : 1.03070226e-004 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 58939 Calibrated on : 30 apr 2001 C1 : -4.928049e+004 C2 : -5.591409e-001 C3 : 1.510530e-002 D1 : 3.944700e-002 D2 : 0.000000e+000 T1 : 3.017493e+001 T2 : -4.671701e-004 T3 : 3.967900e-006 T4 : 3.098920e-009 T5 : 0.000000e+000 Slope : 1.00008000 Offset : -0.52920 AD590M : 1.135000e-002 AD590B : -8.132450e+000 4) Frequency 3, Temperature, 2 Serial number : 2446 Calibrated on : 12-29-04 G : 4.37263026e-003 H : 6.48648273e-004 I : 2.40274689e-005 J : 2.25033571e-006 F0 :</p>

Description	<p>1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 2645 Calibrated on : 11-4-04 G : -1.02331030e+001 H : 1.41323502e+000 I : -9.07984148e-004 J : 1.39126811e-004 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 6) A/D voltage 0, Fluorometer, Wetlab ECO-AFL/FL Serial number : Calibrated on : Vblank : 0.0000 Scale factor : 1.00000000e+000 7) A/D voltage 1, Free 8) A/D voltage 2, PAR/Irradiance, Biospherical/Licor Serial number : 4617 Calibrated on : M : 1.00000000 B : 0.00000000 Calibration constant : 200000000.00000000 Multiplier : 1.00000000 Offset : -0.74800000 9) A/D voltage 3, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : cst536dr Calibrated on : 4-30-02 M : 20.6156 B : 1.1514 Path length : 0.250 10) A/D voltage 4, Altimeter Serial number : Calibrated on : Scale factor : 14.715 Offset : 0.000 11) A/D voltage 5, Oxygen, SBE 43 Serial number : 0072 Calibrated on : 14 jun 05 Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 3.2240e-001 Boc : 0.0000 Offset : -0.6126 Tcor : 0.0025 Pcor : 1.35e-004 Tau : 0.0 Coefficients for Murphy-Larson: Soc : 0.00000e+000 Offset : 0.00000e+000 A : 0.00000e+000 B : 0.00000e+000 C : 0.00000e+000 E : 0.00000e+000 Tau : 0.00000e+000 12) A/D voltage 6, User Polynomial Serial number : Calibrated on : Sensor name : nitrate A0 : -2.57997936 A1 : 25.79979360 A2 : 0.00000000 A3 : 0.00000000 13) A/D voltage 7, User Polynomial, 2 Serial number : Calibrated on : Sensor name : salinity A0 : -1.28998968 A1 : 12.89989680 A2 : 0.00000000 A3 : 0.00000000 14) SPAR voltage, Unavailable 15) SPAR voltage, SPAR/Surface Irradiance Serial number : Calibrated on : Conversion factor : 9978450000000000.00000000 Ratio multiplier : 1.00000000</p> <p>Processing Description</p> <p>The data were initially processed aboard ship using SeaBird's processing with their standard, recommended parameters. The procedure used for quality control and calibration post processing follows that developed at NOAA's Pacific Marine Environmental Laboratory in the Eco-FOCI (Fisheries and Oceanography coordinated Investigations). Each cast was then inspected for reasonableness and for spikes using the criterion that for 1-m bin data, sigma-t inversions > 0.02 were unacceptable. Temperature or conductivity values causing such inversions were removed and the result data gaps were linearly interpolated. On 77 of the casts, the secondary salinity sensor data contained so many spikes, that it was impossible to reasonably despoke it, so that data for that variable was discarded from the dataset. Portions of the secondary salinity data were removed from a few of the remaining casts. On cast 221, the primary (not the secondary T and S) were discarded. Water samples, taken approximately every third station, were taken to calibrate salinity. The results were compared to data measured by the CTD sensor to determine the offset of the CTD data. After the salinity calibration was applied, densities, and dynamic heights were recalculated.</p> <p>http://bcodata.whoi.edu/ECOHAB_PNW/NODC_DataDocForm_EH4b.pdf>Link to NODC Data Form 24-13 for Atlantis cruise number AT11-30 CTD Data Submission BCO-DMO Processing/Edits » Original ".txt" file imported into spreadsheet » ECOHAB-PNW master cruise id added to dataset for compatibility with other ECOHAB-PNW datasets Supplied cruise parameter retained as Cruiseld_CTD » Additional parameters added for overall standardization between ECOHAB-PNW CTD datasets These parameters have "nd" (no data) entered for values » Parameter names modified to conform to BCO-DMO convention Some renamed to BCO-DMO standard (date, time, lat, lon) Spaces removed or replaced with underscores Duplicate parameter names individualized Parameter units removed from names » Single Date/Time parameter split into two parameters (date and time) date reformatted to YYYYMMDD time reformatted to HHMMSS » Longitude converted signed for West longitude (negative) by subtracting 360.0 from supplied value » Data values padded with decimal places as appropriate » Error values changed to BCO-DMO standard of "nd" "9999" changed to "nd" "-1.00E+10" changed to "nd"</p>
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TN200

Website	https://www.bco-dmo.org/deployment/58006
Platform	R/V Thomas G. Thompson
Report	http://bcodata.whoi.edu/ECOHAB_PNW/ECOHAB_Cruise6_Report.pdf
Start Date	2006-09-11
End Date	2006-10-04
	Cruise TN200 is also known as ECOHAB_6 (ECOHAB Cruise 6) the sixth of 6 ECOHAB-PNW

cruises that are numbered sequentially from Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6. Cruise information and original data are available from the NSF R2R data catalog.

Methods & Sampling

The data were collected using the Thompson's SBE911+ system with dual Temperature and conductivity sensors, a Wetlab ECO-AFL/FL Fluorometer, a WetLabs CSTAR transmissometer, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. Link to NODC Data Form 24-13 for Thompson cruise number TN200 CTD Data Submission File: tn200_con_rept.txt Date: 11/30/2008 Instrument configuration file: F:confiles n2002000007.CON Configuration report for SBE 911plus/917plus CTD -----

----- Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : RS-232C Scans to average : 1 Surface PAR voltage added : No NMEA position data added : Yes Scan time added : Yes 1) Frequency 0, Temperature Serial number : 2131 Calibrated on : 30-June-2005 G : 4.13910413e-003 H : 6.23251254e-004 I : 2.05342512e-005 J : 2.04785655e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 2903 Calibrated on : 01-July-2005 G : -1.02565864e+001 H : 1.41763679e+000 I : 8.69627192e-004 J : 2.84969531e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.0000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 34901/1416 Calibrated on : 10-Sep-99 C1 : -2.869955e+004 C2 : -1.565582e+000 C3 : 9.161829e-003 D1 : 3.074801e-002 D2 : 0.000000e+000 T1 : 3.023683e+001 T2 : -1.016075e-003 T3 : 4.744095e-006 T4 : 0.000000e+000 T5 : 0.000000e+000 Slope : 0.99994000 Offset : -8.37910 AD590M : 1.133000e-002 AD590B : -8.498580e+000 4) Frequency 3, Temperature, 2 Serial number : 2195 Calibrated on : 30-June-2005 G : 4.34901293e-003 H : 6.51231655e-004 I : 2.39757100e-005 J : 2.22661406e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 2881 Calibrated on : 01-July-2005 G : -9.98493252e+000 H : 1.37246729e+000 I : 7.54720333e-004 J : 2.42144702e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.0000 6) A/D voltage 0, Oxygen, SBE 43 Serial number : 0542 Calibrated on : 17-July-2005 Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 3.8500e-001 Boc : 0.0000 Offset : -0.4815 Tcor : 0.0014 Pcor : 1.35e-004 Tau : 0.000000e+000 A : 0.000000e+000 B : 0.000000e+000 C : 0.000000e+000 E : 0.000000e+000 Tau : 0.000000e+000 7) A/D voltage 1, Altimeter Serial number : 1098 Calibrated on : Scale factor : 14.800 Offset : 0.000 8) A/D voltage 2, Fluorometer, Wetlab ECO-AFL/FL Serial number : FLRTD-229 Calibrated on : 09-Sep-2004 Vblank : 0.0730 Scale factor : 1.29648000e+001 9) A/D voltage 3, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : CST-402DR Calibrated on : 03-Aug-2004 M : 20.0000 B : 0.0000 Path length : 0.250 10) A/D voltage 4, User Polynomial Serial number : 063 Calibrated on : Sensor name : ISUS A0 : -6.92900000 A1 : 27.55900000 A2 : 0.00000000 A3 : 0.00000000 11) A/D voltage 5, User Polynomial, 2 Serial number : 063 Calibrated on : Sensor name : ISUS A0 : -6.08900000 A1 : 14.41300000 A2 : 0.00000000 A3 : 0.00000000 12) A/D voltage 6, PAR/Irradiance, Biospherical/Licor Serial number : 7175 Calibrated on : 22-Mar-2002 M : 2.00000000 B : 0.00000000 Calibration constant : 39062500000.00000000 Multiplier : 1000.00000000 Offset : 0.00000000 13) A/D voltage 7, Free

Description

Processing Description

The data were initially processed aboard ship using SeaBird Electronics' processing with their standard, recommended parameters. The procedure used for quality control and calibration post processing follows that developed at NOAA's Pacific Marine Environmental Laboratory in the Eco-FOCI (Fisheries and Oceanography coordinated Investigations). Each cast was then inspected for reasonableness and for spikes using the criterion that for 1-m bin data, sigma-t inversions > 0.02 were unacceptable. Temperature or conductivity values causing such inversions were removed and the result data gaps were linearly interpolated. Water samples, taken approximately every third station, were analyzed for salinity using an Autosol. The results were compared to data measured by the CTD sensor to determine the offset of the CTD data. http://bcodata.whoi.edu/ECOHAB_PNW/NODC_DataDocForm_EH6b.pdf>Link to NODC Data Form 24-13 for Thompson cruise number TN200 CTD Data Submission BCO-DMO Processing/Edits » Original ".txt" file imported into spreadsheet » ECOHAB-PNW master cruise id added to dataset for compatibility with other ECOHAB-PNW datasets Supplied cruise parameter retained as Cruiseld_CTD » Additional parameters added for overall standardization between ECOHAB-PNW CTD datasets These parameters have "nd" (no data) entered for values » Parameter names modified to conform to BCO-DMO convention Some renamed to BCO-DMO standard (date, time, lat, lon) Spaces removed or replaced with underscores Duplicate

	parameter names individualized Parameter units removed from names » Single Date/Time parameter split into two parameters (date and time) date reformatted to YYYYMMDD time reformatted to HHMMSS » Longitude converted signed for West longitude (negative) by subtracting 360.0 from supplied value » Data values padded with decimal places as appropriate » Error values changed to BCO-DMO standard of "nd" "9999" changed to "nd" "-1.00E+10" changed to "nd"
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TUIM14MV

Website	https://www.bco-dmo.org/deployment/58005
Platform	R/V Melville
Report	http://bcodata.whoi.edu/ECOHAB_PNW/ECOHAB_Cruise5_Report.pdf
Start Date	2005-09-02
End Date	2005-09-22
Description	<p>Cruise TUIM14MV is also known as ECOHAB_5 (ECOHAB Cruise 5) the fifth cruise of the 6 ECOHAB-PNW cruises; numbered sequentially from Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6. Cruise information and original data are available from the NSF R2R data catalog.</p> <p>Methods & Sampling</p> <p>The data were collected using the Melville's SBE911+ system with dual Temperature and conductivity sensors, a Chelsea/Seatech/Wetlabs CStar fluorometer sensor, Chelsea/Wetlabs Transmissometer, Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. Link to NODC Data Form 24-13 for Melville cruise id TUIM14MV CTD Data Submission File: 8m0509_con_rept.txt Date: 11/30/2008 Instrument configuration file: F:confilesme0509ctd009.CON Configuration report for SBE 911plus/917plus CTD ----- Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : IEEE-488 (GPIB) Scans to average : 1 Surface PAR voltage added : No NMEA position data added : Yes Scan time added : No 1) Frequency 0, Temperature Serial number : 2359 Calibrated on : 17-FEB-2005odf G : 4.32814586e-003 H : 6.45643386e-004 I : 2.42576001e-005 J : 2.49241974e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 2766 Calibrated on : 02-Aug-05s G : -1.03722597e+001 H : 1.45612894e+000 I : -7.41726782e-004 J : 1.25838632e-004 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.0000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 88907-777 Calibrated on : 12-Jan-2005odf C1 : -4.516713e+004 C2 : -6.769488e-001 C3 : 1.191515e-002 D1 : 3.702537e-002 D2 : 1.984244e-006 T1 : 3.041228e+001 T2 : -4.880158e-004 T3 : 3.351044e-006 T4 : 1.775127e-008 T5 : 0.000000e+000 Slope : 1.00000000 Offset : 0.00000 AD590M : 1.280490e-002 AD590B : -9.096340e+000 4) Frequency 3, Temperature, 2 Serial number : 2380 Calibrated on : 15-Feb-2005odf G : 4.34124979e-003 H : 6.42086192e-004 I : 2.39291699e-005 J : 2.28031692e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 2765 Calibrated on : 18-Feb-05 G : -1.00375502e+001 H : 1.37695794e+000 I : -9.71475038e-004 J : 1.44271004e-004 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.0000 6) A/D voltage 0, Fluorometer, Chelsea Aqua 3 Serial number : 088191 Calibrated on : 14-Dec-2004 VB : 0.450900 V1 : 2.028900 Vacetone : 0.625500 Scale factor : 1.000000 Slope : 1.000000 Offset : 0.000000 7) A/D voltage 1, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : CST-492DR Calibrated on : 30-Aug-2001 M : 20.3827 B : -0.1019 Path length : 0.250 8) A/D voltage 2, Oxygen, SBE 43 Serial number : 0454 Calibrated on : 04-Feb-05p Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 4.6170e-001 Boc : 0.0000 Offset : -0.5031 Tcor : -0.0007 Pcor : 1.35e-004 Tau : 0.0 Coefficients for Murphy-Larson: Soc : 0.00000e+000 Offset : 0.00000e+000 A : 0.00000e+000 B : 0.00000e+000 C : 0.00000e+000 E : 0.00000e+000 Tau : 0.00000e+000 9) A/D voltage 3, Free 10) A/D voltage 4, PAR/Irradiance, Biospherical/Licor Serial number : 4508 Calibrated on : 11-Feb-2004 M : 1.00000000 B : 0.00000000 Calibration constant : 0.00000001 Multiplier : 1.00000000 Offset : 0.00000000 11) A/D voltage 5, Free 12) A/D voltage 6, Altimeter Serial number : 9711091 Calibrated on : 2001 Scale factor : 3.000 Offset : 0.000 13) A/D voltage 7, Free</p> <p>Processing Description</p> <p>The data were processed using SeaBird Electronics' processing with their standard,</p>

recommended parameters. The procedure used for quality control and calibration post processing follows that developed at NOAA's Pacific Marine Environmental Laboratory in the Eco-FOCI (Fisheries and Oceanography coordinated Investigations). Each cast was then inspected for reasonableness and for spikes using the criterion that for 1-m bin data, sigma-t inversions > 0.02 were unacceptable. Temperature or conductivity values causing such inversions were removed and the result data gaps were linearly interpolated. Water samples, taken approximately every third station, were analyzed for salinity using an autosal aboard the vessel. The results were compared to data measured by the CTD sensor to determine the calibration correction for the salinity values. The resulting corrections were applied to all the profile data. http://bcodata.whoi.edu/ECOHAB_PNW/NODC_DataDocForm_EH5b.pdf>Link to NODC Data Form 24-13 for Melville cruise id TUIM14MV CTD Data Submission BCO-DMO Processing/Edits » Original ".txt" file imported into spreadsheet » ECOHAB-PNW master cruise id added to dataset for compatibility with other ECOHAB-PNW datasets Supplied cruise parameter retained as Cruiseld_CTD » Additional parameters added for overall standardization between ECOHAB-PNW CTD datasets These parameters have "nd" (no data) entered for values » Parameter names modified to conform to BCO-DMO convention Some renamed to BCO-DMO standard (date, time, lat, lon) Spaces removed or replaced with underscores Duplicate parameter names individualized Parameter units removed from names » Single Date/Time parameter split into two parameters (date and time) date reformatted to YYYYMMDD time reformatted to HHMMSS » Longitude converted signed for West longitude (negative) by subtracting 360.0 from supplied value » Data values padded with decimal places as appropriate » Error values changed to BCO-DMO standard of "nd" "9999" changed to "nd" "-1.00E+10" changed to "nd"

W0306A

Website	https://www.bco-dmo.org/deployment/58001
Platform	R/V Wecoma
Report	http://bcodata.whoi.edu/ECOHAB_PNW/ECOHAB_Cruise1_Report.pdf
Start Date	2003-06-02
End Date	2003-06-23
	<p>W0306A: This is ECOHAB_1 (ECOHAB Cruise 1) First cruise of the 6 ECOHAB/PNW cruises. Numbered sequentially from Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6. .</p> <p>Methods & Sampling</p> <p>The data were collected using the Wecoma's SBE911+ system with dual Temperature and Conductivity sensors, a SeaTech fluorometer sensor a Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. Link to NODC Data Form 24-13 for Wecoma cruise number W0306A CTD Data Submission File: w0306a_con_rept_1-137.txt Date: 11/30/2008 Instrument configuration file: F:confilesw0306acast001.CON Configuration report for SBE 911plus/917plus CTD -----</p> <p>Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : IEEE-488 (GPIB) Scans to average : 1 Surface PAR voltage added : No NMEA position data added : Yes Scan time added : No 1) Frequency 0, Temperature Serial number : 1369 Calibrated on : 17-Dec-02 G : 4.83548052e-003 H : 6.76581922e-004 I : 2.61744258e-005 J : 2.06430958e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 1030 Calibrated on : 17-Dec-02 G : -4.19336969e+000 H : 5.90788091e-001 I : 3.71301760e-005 J : 3.13616304e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 9P6012-2843 Calibrated on : 17-Jul-01 C1 : -4.029491e+004 C2 : -8.058990e-001 C3 : 1.260260e-002 D1 : 3.076300e-002 D2 : 0.000000e+000 T1 : 3.021184e+001 T2 : -4.772503e-004 T3 : 3.981640e-006 T4 : 3.194480e-009 T5 : 0.000000e+000 Slope : 1.00000000 Offset : 0.00000 AD590M : 1.157000e-002 AD590B : -8.237500e+000 4) Frequency 3, Temperature, 2 Serial number : 1371 Calibrated on : 17-Dec-02 G : 4.83369723e-003 H : 6.78344390e-004 I : 2.65701597e-005 J : 2.09190892e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 1054 Calibrated on : 02-Jul-02 G : -4.08915197e+000 H : 5.91598520e-001 I : -8.13084544e-005 J : 3.90272813e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 6) A/D voltage 0, Fluorometer, Seatech/Wetlabs FLF Serial number : 101S Calibrated</p>

Description

on : 19 Dec 01 Scale factor : 3.000000e+000 Offset : 0.000 7) A/D voltage 1, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : CTS-590DR Calibrated on : 05/01/02 M : 1.0000 B : 0.0000 Path length : 0.250 8) A/D voltage 2, Oxygen, SBE 43 Serial number : 0387 Calibrated on : 03/01/03 Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 4.3780e-001 Boc : 0.0000 Offset : -0.4728 Tcor : 0.0015 Pcor : 1.35e-004 Tau : 0.0 Coefficients for Murphy-Larson: Soc : 0.00000e+000 Offset : 0.00000e+000 A : 0.00000e+000 B : 0.00000e+000 C : 0.00000e+000 E : 0.00000e+000 Tau : 0.00000e+000 9) A/D voltage 3, Free 10) A/D voltage 4, Altimeter Serial number : Datasonics Calibrated on : Scale factor : 15.000 Offset : 0.000 11) A/D voltage 5, Free 12) A/D voltage 6, PAR/Irradiance, Biospherical/Licor Serial number : 4246 Calibrated on : 25Jul2000 M : 1.00000000 B : 0.00000000 Calibration constant : 20300000000000.00000000 Multiplier : 53.95400000 Offset : 0.00000000 13) A/D voltage 7, Free File: w0306a_con_rept_138-246.txt Date: 11/30/2008 Instrument configuration file: F:\confilesw0306acast246.CON Configuration report for SBE 911plus/917plus CTD ----- Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : IEEE-488 (GPIB) Scans to average : 1 Surface PAR voltage added : No NMEA position data added : Yes Scan time added : No 1) Frequency 0, Temperature Serial number : 1366 Calibrated on : 05-Sept-02 G : 4.83426629e-003 H : 6.76281636e-004 I : 2.56989753e-005 J : 1.99492586e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 2356 Calibrated on : 17-Dec-02 G : -1.00784754e+001 H : 1.46955327e+000 I : 4.365644460e-004 J : 6.08868326e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 9P6012-2843 Calibrated on : 17-Jul-01 C1 : -4.029491e+004 C2 : -8.058990e-001 C3 : 1.260260e-002 D1 : 3.076300e-002 D2 : 0.000000e+000 T1 : 3.021184e+001 T2 : -4.772503e-004 T3 : 3.981640e-006 T4 : 3.194480e-009 T5 : 0.000000e+000 Slope : 1.00000000 Offset : 0.00000 AD590M : 1.157000e-002 AD590B : -8.237500e+000 4) Frequency 3, Temperature, 2 Serial number : 1371 Calibrated on : 17-Dec-02 G : 4.83369723e-003 H : 6.78344390e-004 I : 2.65701597e-005 J : 2.09190892e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 1054 Calibrated on : 02-Jul-02 G : -4.08915197e+000 H : 5.91598520e-001 I : -8.13084544e-005 J : 3.90272813e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 6) A/D voltage 0, Fluorometer, Seatech/Wetlabs FLF Serial number : 101S Calibrated on : 19 Dec 01 Scale factor : 3.000000e+000 Offset : 0.000 7) A/D voltage 1, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : CTS-590DR Calibrated on : 05/01/02 M : 1.0000 B : 0.0000 Path length : 0.250 8) A/D voltage 2, Oxygen, SBE 43 Serial number : 0387 Calibrated on : 03/01/03 Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 4.3780e-001 Boc : 0.0000 Offset : -0.4728 Tcor : 0.0015 Pcor : 1.35e-004 Tau : 0.0 Coefficients for Murphy-Larson: Soc : 0.00000e+000 Offset : 0.00000e+000 A : 0.00000e+000 B : 0.00000e+000 C : 0.00000e+000 E : 0.00000e+000 Tau : 0.00000e+000 9) A/D voltage 3, Free 10) A/D voltage 4, Altimeter Serial number : Datasonics Calibrated on : Scale factor : 15.000 Offset : 0.000 11) A/D voltage 5, Free 12) A/D voltage 6, PAR/Irradiance, Biospherical/Licor Serial number : 4246 Calibrated on : 25Jul2000 M : 1.00000000 B : 0.00000000 Calibration constant : 20300000000000.00000000 Multiplier : 53.95400000 Offset : 0.00000000 13) A/D voltage 7, Free

Processing Description

The data were initially processed using SeaBird Electronics' processing with SeaBird's standard, recommended parameters. The following post-processing procedure was used for quality control and calibration of those resulting files. The procedure used for quality control and calibration post processing follows that developed at NOAA's Pacific Marine Environmental Laboratory in the Eco-FOCI (Fisheries and Oceanography coordinated Investigations). Each cast was visually inspected for reasonableness and for spikes. The criterion used is that for 1-m bin data, sigma-t inversions > 0.02 were unacceptable. Temperature or conductivity values causing such inversions were removed and the result data gaps were linearly interpolated. On most casts, data was extrapolated to the surface from the first data point at 2-3m depth. Water samples, taken approximately every third station, were analyzed for salinity using an autosal aboard the Wecoma. The results were compared to data measured by the CTD sensor to determine the calibration correction for the salinity values. The resulting corrections were applied to all the profile data. On several casts on EH1 (135-137) the primary sensors were damaged, so secondary sensors were used in subsequent calculations for those casts. Cast039 was not a CTD profile, and is not included.
http://bcodata.whoi.edu/ECOhab_PNW/NODC_DataDocForm_EH1b.pdf>Link to NODC Data Form 24-13 for Wecoma cruise number W0306A CTD Data Submission BCO-DMO

	<p>Processing/Edits » Original ".txt" file imported into spreadsheet » ECOHAB-PNW master cruise id added to dataset for compatibility with other ECOHAB-PNW datasets Supplied cruise parameter retained as Cruiseld_CTD » Additional parameters added for overall standardization between ECOHAB-PNW CTD datasets These parameters have "nd" (no data) entered for values » Parameter names modified to conform to BCO-DMO convention Some renamed to BCO-DMO standard (date, time, lat, lon) Spaces removed or replaced with underscores Duplicate parameter names individualized Parameter units removed from names » Single Date/Time parameter split into two parameters (date and time) date reformatted to YYYYMMDD time reformatted to HHMMSS » Longitude converted signed for West longitude (negative) by subtracting 360.0 from supplied value » Data values padded with decimal places as appropriate » Error values changed to BCO-DMO standard of "nd" "9999" changed to "nd" "-1.00E+10" changed to "nd"</p>
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W0308C

Website	https://www.bco-dmo.org/deployment/58002
Platform	R/V Wecoma
Report	http://bcodata.whoi.edu/ECOHAB_PNW/ECOHAB_Cruise2_Report.pdf
Start Date	2003-08-30
End Date	2003-09-19
Description	<p>W0308C: This is ECOHAB_2 (ECOHAB Cruise 2). Second cruise of the 6 ECOHAB-PNW cruises. Numbered sequentially from Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6.</p> <p>Methods & Sampling</p> <p>The data were collected using the Wecoma's SBE911+ system with dual Temperature and Conductivity sensors, a SeaTech fluorometer sensor a Biospherical Instruments/LICOR PAR (Irradiance) sensor, and a Sea Bird SBE043 dissolved oxygen sensor. Link to NODC Data Form 24-13 for Wecoma cruise number W0308C CTD Data Submission File: w0308c_con_rept.txt Date: 11/30/2008 Instrument configuration file: F:\confiles\w0308ccast003.CON Configuration report for SBE 911plus/917plus CTD ----- Frequency channels suppressed : 0 Voltage words suppressed : 0 Computer interface : IEEE-488 (GPIB) Scans to average : 1 Surface PAR voltage added : No NMEA position data added : Yes Scan time added : No 1) Frequency 0, Temperature Serial number : 1366 Calibrated on : 05-Sept-02 G : 4.83426629e-003 H : 6.76281636e-004 I : 2.56989753e-005 J : 1.99492586e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 2) Frequency 1, Conductivity Serial number : 2356 Calibrated on : 17-Dec-02 G : -1.00784754e+001 H : 1.46955327e+000 I : 4.36564460e-004 J : 6.08868326e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 3) Frequency 2, Pressure, Digiquartz with TC Serial number : 9P6012-2843 Calibrated on : 17-Jul-01 C1 : -4.029491e+004 C2 : -8.058990e-001 C3 : 1.260260e-002 D1 : 3.076300e-002 D2 : 0.000000e+000 T1 : 3.021184e+001 T2 : -4.772503e-004 T3 : 3.981640e-006 T4 : 3.194480e-009 T5 : 0.000000e+000 Slope : 1.00000000 Offset : 0.00000 AD590M : 1.157000e-002 AD590B : -8.237500e+000 4) Frequency 3, Temperature, 2 Serial number : 1371 Calibrated on : 17-Dec-02 G : 4.83369723e-003 H : 6.78344390e-004 I : 2.65701597e-005 J : 2.09190892e-006 F0 : 1000.000 Slope : 1.00000000 Offset : 0.0000 5) Frequency 4, Conductivity, 2 Serial number : 1054 Calibrated on : 02-Jul-02 G : -4.08915197e+000 H : 5.91598520e-001 I : -8.13084544e-005 J : 3.90272813e-005 CTcor : 3.2500e-006 CPcor : -9.57000000e-008 Slope : 1.00000000 Offset : 0.00000 6) A/D voltage 0, Fluorometer, Seatech/Wetlabs FLF Serial number : 101S Calibrated on : 19 Dec 01 Scale factor : 3.000000e+000 Offset : 0.000 7) A/D voltage 1, Transmissometer, Chelsea/Seatech/Wetlab CStar Serial number : CTS-590DR Calibrated on : 05/01/02 M : 1.0000 B : 0.0000 Path length : 0.250 8) A/D voltage 2, Oxygen, SBE 43 Serial number : 0387 Calibrated on : 03/01/03 Equation : Owens-Millard Coefficients for Owens-Millard: Soc : 4.3780e-001 Boc : 0.0000 Offset : -0.4728 Tcor : 0.0015 Pcor : 1.35e-004 Tau : 0.0 Coefficients for Murphy-Larson: Soc : 0.00000e+000 Offset : 0.00000e+000 A : 0.00000e+000 B : 0.00000e+000 C : 0.00000e+000 E : 0.00000e+000 Tau : 0.00000e+000 9) A/D voltage 3, Free 10) A/D voltage 4, Altimeter Serial number : Datasonics Calibrated on : Scale factor : 15.000 Offset : 0.000 11) A/D voltage 5, Free 12) A/D voltage 6, PAR/Irradiance, Biospherical/Licor Serial number : 4246 Calibrated on : 25Jul2000 M : 1.00000000 B : 0.00000000 Calibration constant : 20300000000000.00000000 Multiplier : 53.95400000</p>

Offset : 0.00000000 13) A/D voltage 7, Free

Processing Description

The data were initially processed using SeaBird Electronics' processing with SeaBird's standard, recommended parameters. The following post-processing procedure was used for quality control and calibration of those resulting files. The procedure used for quality control and calibration post processing follows that developed at NOAA's Pacific Marine Environmental Laboratory in the Eco-FOCI (Fisheries and Oceanography coordinated Investigations). Each cast was visually inspected for reasonableness and for spikes. The criterion used is that for 1-m bin data, sigma-t inversions > 0.02 were unacceptable. Temperature or conductivity values causing such inversions were removed and the result data gaps were linearly interpolated. On most casts, data was extrapolated to the surface from the first data point at 2-3m depth. Water samples, taken approximately every third station, were analyzed for salinity using an autosal aboard the Wecoma. The results were compared to data measured by the CTD sensor to determine the calibration correction for the salinity values. The resulting corrections were applied to all the profile data.

http://bcodata.whoi.edu/ECOHAB_PNW/NODC_DataDocForm_EH2b.pdf">Link to NODC Data Form 24-13 for Wecoma cruise number W0308C CTD Data Submission BCO-DMO Processing/Edits » Original ".txt" file imported into spreadsheet » ECOHAB-PNW master cruise id added to dataset for compatibility with other ECOHAB-PNW datasets Supplied cruise parameter retained as Cruiseld_CTD » Additional parameters added for overall standardization between ECOHAB-PNW CTD datasets These parameters have "nd" (no data) entered for values » Parameter names modified to conform to BCO-DMO convention Some renamed to BCO-DMO standard (date, time, lat, lon) Spaces removed or replaced with underscores Duplicate parameter names individualized Parameter units removed from names » Single Date/Time parameter split into two parameters (date and time) date reformatted to YYYYMMDD time reformatted to HHMMSS » Longitude converted signed for West longitude (negative) by subtracting 360.0 from supplied value » Data values padded with decimal places as appropriate » Error values changed to BCO-DMO standard of "nd" "9999" changed to "nd" "-1.00E+10" changed to "nd"

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Project Information

ECOHAB - Pacific Northwest (ECOHAB-PNW)

Coverage: Off the Pacific Northwest coast

ECOHAB-PNW is a 5-year multi-disciplinary project that will study the physiology, toxicology, ecology and oceanography of toxic *Pseudo-nitzschia* species off the Pacific Northwest coast.

This program studies the physiology, toxicology, ecology and oceanography of toxic *Pseudo-nitzschia* species off the Pacific Northwest coast, a region in which both macro-nutrient supply and current patterns are primarily controlled by seasonal coastal upwelling processes. Recent studies suggest that the seasonal Juan de Fuca eddy, a nutrient rich retentive feature off the Washington coast serves as a "bioreactor" for the growth of phytoplankton, including diatoms of the genus *Pseudo-nitzschia*. Existing ship of opportunity data are consistent with the working hypothesis that the seasonal Juan de Fuca eddy is an initiation site for toxic *Pseudo-nitzschia* that impact the Washington coast and that upwelling sites adjacent to the coast are less likely to develop toxicity.

The long-term program goal is to develop a mechanistic basis for forecasting toxic *Pseudo-nitzschia* bloom development here and in other similar coastal regions in Eastern Boundary upwelling systems.

Specific study objectives are:

- 1. To determine the physical/biological/chemical factors that make the Juan de Fuca eddy region more viable for growth and sustenance of toxic *Pseudo-nitzschia* than the nearshore upwelling zone;
- 2. To determine the combination of environmental factors that regulate the production, accumulation, and/or release of domoic acid (DA) from *Pseudo-nitzschia* cells in the field;

- 3. To determine possible transport pathways between DA initiation sites and shellfish beds on the nearby coast.

The scientific operations of this study included obtaining multi-disciplinary data from a large scale grid, sampling water properties while following a drifter, deployment of surface drifters, satellite imagery, laboratory studies using water collected at selected sites, and numerical modeling of both the circulation and chlorophyll concentration. Water samples included macronutrients, iron, particulate and dissolved domoic acid, Pseudo-nitzschia species and numbers. Experiments were done to estimate growth and grazing rates. Moored arrays were deployed to provide time series of currents and water properties from May to October, each year from 2003-2006. Numerical modeling studies on a fine scale grid focused on the seasonal development of the Juan de Fuca eddy and its change in structure during selected wind conditions. Conditions favorable to release of phytoplankton from the eddy region were assessed.

After four years of field work the research team is able to describe a possible sequence of events necessary to ingestion of domoic acid by coastal shellfish:

(1) Plankton must become concentrated in the bloom source region. ECOHAB PNW studies suggest this requires

a period of downwelling-favorable or lightly fluctuating winds.

(2) Next the plankton must undergo stress sufficient to cause an increase in cellular toxin: in the Juan de Fuca eddy region toxin can be found on any survey of the region in both early and late summer within a 21 day time scale.

(3) Patches of toxic plankton must then escape from the offshore source region. For the Juan de Fuca eddy region

escape is favored during upwelling-favorable wind conditions that allow the geostrophic constraint of the eddy circulation pattern to be broken.

(4) The patch must move alongshore to sites with shellfish populations, and

(5) must retain its toxicity during the time period of transport. For a toxic source in the Juan de Fuca eddy this requires southward advection across the shelf, as occurs during periods of upwelling-favorable winds in summer and early fall. ECOHAB PNW studies show that toxin can be maintained in the 7-14 days required for transport. For an Oregon source such as Heceta bank to impact the Washington shelf, this requires northward

advection across the shelf, as occurs during periods of downwelling-favorable winds in spring.

(6) Last, the toxic patch must move onshore to coastal beaches and/or estuaries,

(7) where it must remain there for a period sufficient for significant ingestion by shellfish.

Cruises/Platforms:

Cruise = ECOHAB-PNW cruises, numbered sequentially from

Cruise_1 - Cruise_6 as ECOHAB_1 - ECOHAB_6.

Cruise_1=ECOHAB_1, R/V Wecoma, W0306A, June 2-23, 2003 [Cruise Report](#)

Cruise_2=ECOHAB_2, R/V Wecoma, W0308C, August 30 - September 19, 2003 [Cruise Report](#)

Cruise_3=ECOHAB_3, R/V Atlantis, AT11-17, September 8-28, 2004 [Cruise Report](#)

Cruise_4=ECOHAB_4, R/V Atlantis, AT11-30, July 7-27, 2005 [Cruise Report](#)

Cruise_5=ECOHAB_5, R/V Melville, TUIM14MV, September 2-22, 2005 [Cruise Report](#)

Cruise_6=ECOHAB_6, R/V Thomas G. Thompson, TN200, Sept. 11- Oct. 4, 2006 [Cruise Report](#)

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0234587
National Oceanic and Atmospheric Administration (NOAA)	NA170P2789

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