

CTD station list from cruises W0306A, W0308C, AT11-17, AT11-30, TUIM14MV, TN200 from the Pacific North West, Coastal Waters off Washington State and Vancouver Island; 2003-2006 (ECOHAB-PNW project)

Website: <https://www.bco-dmo.org/dataset/3380>

Version: 05 November 2010

Version Date: 2010-11-05

Project

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

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Dataset Description

Cruise Id, Station Number, Cast, Date/Time, Lat/Lon and Depth of each CTD station

Methods & Sampling

Generated from CTD Profile data headers

Data Processing Description

Generated from CTD Profile data headers

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Data Files

File
CTD_Stations.csv (Comma Separated Values (.csv), 79.83 KB) MD5:73ba9e5b70de9feabd578c840b02d909
Primary data file for dataset ID 3380

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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

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Deployments

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
Description	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. .

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	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.

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	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

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
Description	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

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	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.

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
Description	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.

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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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