CTD profiles from R/V Pluteus cruises in Coos Bay, Oregon during 2014 and 2015 (Storm larvae project)

Website: https://www.bco-dmo.org/dataset/564944
Version: validated
Version Date: 2015-08-28

Project
» Spawning During Storms and the Subsequent Dispersal and Settlement of Coastal Invertebrate Larvae (Storm larvae)

Contributors	Affiliation	Role
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Dataset Description

CTD data from cruises during 2014 and 2015 to study spawning during storms and subsequent dispersal and settlement of invertebrate larvae.

Methods & Sampling

These data were obtained from ship-based CTD profiling, using one of several different CTD sensors (the actual sensor brand and serial number are included in each datafile header, i.e. RBR or SeaBird). The time, location, and general conditions were noted and a CTD cast was taken from the vessel.

Data Processing Description

The data are parsed into upcast and downcast data. Then, we bin average the downcast profiles into 1-meter bins. The CTD samples at least 6 Hz, so many measurements go into each 1 m data value. The 1-meter, bin averaged data are reported here.

DMO notes:
metadata in header taken to compose toplevel file and units information put in parameter metadata
standardized headers to include PI, project and version date
for 2015 data, changed -999 to 'nd'

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Data Files

File
CTD_storm_spawn_rs.csv (Comma Separated Values (.csv), 297.02 KB) MD5:37aedad10104d189abcf5011cd526c28 Primary data file for dataset ID 564944

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Parameters

Parameter	Description	Units
year	year	time
platform	ship name	text
CTD	CTD cast number	filename
date_local	date in local time	two digit day; three letter month; four digit year
time_local	time of day in local time; includes seconds	HH:MM:SS
ISO_DateTime_Local	date and time including seconds reformatted to ISO8601 standards; added by DMO	ISO format
lat	the latitude of the CTD cast; North is positive	decimal degrees
lon	the longitude of the CTD cast; West is negative	decimal degrees
depth	the depth of the CTD measurement	meters
temp	water temperature from the CTD	degrees centrigrade
sal	water salinity	PSU
cond	conductivity from the CTD	milliSiemens/centimeter
fluor	fluorescence	grams per liter (usually mg/meter cubed)
turbidity	turbidity	Nephelometric Turbidity Units (NTU)
O2_mg_L	dissolved oxygen measured in milligrams per Liter	mg per liter

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Instruments

Dataset-specific Instrument Name	RBR_CTD
Generic Instrument Name	CTD Richard Brancker Research
Dataset-specific Description	Used for Ship-Based CTD profiling in 2014.
Generic Instrument Description	The RBR Conductivity, Temperature and Depth instrument: http://www.rbr-global.com/products/ct-and-ctd-loggers/rbrconcerto-ctd

Dataset-specific Instrument Name	CTD Seabird
Generic Instrument Name	CTD Sea-Bird
Dataset-specific Description	Used for Ship-Based CTD profiling in 2015.
Generic Instrument Description	A Conductivity, Temperature, Depth (CTD) sensor package from SeaBird Electronics. This instrument designation is used when specific make and model are not known or when a more specific term is not available in the BCO-DMO vocabulary. Refer to the dataset-specific metadata for more information about the specific CTD used. More information from: http://www.seabird.com/

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Deployments

Pluteus2014

Website	https://www.bco-dmo.org/deployment/614689
Platform	R/V Pluteus
Start Date	2014-01-16
End Date	2014-02-24

Pluteus2015

Website	https://www.bco-dmo.org/deployment/614988
Platform	R/V Pluteus
Start Date	2015-01-13
End Date	2015-02-11

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Project Information

Spawning During Storms and the Subsequent Dispersal and Settlement of Coastal Invertebrate Larvae (Storm larvae)

Coverage: Coastal waters of Coos Bay, OR

The study will address four questions concerning invertebrate spawning on the US West Coast: 1) Which nearshore benthic invertebrates spawn during winter? 2) What conditions are associated with spawning events? (Preliminary data lead the PIs to predict that most spawning will occur during periods of large waves and coastal downwelling.) 3) What is the pattern of dispersal of these winter-spawned larvae in the coastal ocean? 4) How do variations in ocean conditions during pelagic development affect delivery of larvae to the shore?

Water will be sampled daily from the seawater intake for the Oregon Institute of Marine Biology marine laboratory in Coos Bay, OR. Water is pumped at high tide when the intake samples coastal ocean water. Early larval stages will be identified by genetic barcoding and a visual ID key will be developed from individuals raised in the lab. Time series analysis will be used to test for the effects of oceanographic parameters (e.g., temperature, salinity, Chl-a, wind stress, and wave data) on spawning events indicated by the sudden appearance of zygotes or embryos. Following a spawning event, oceanographic cruises in the coastal ocean will follow the dispersal and pelagic development of the larvae and relate their distribution to coastal hydrodynamics. Using daily samples from the seawater system and settlement collectors at intertidal sample sites, the PIs will monitor the abundance of late stage larvae in the near-shore and settlement in the intertidal zone. These time series will be compared to hydrographic parameters to identify conditions favoring the maintenance of larvae in the waters adjacent to the coast and the delivery of larvae to the shore.

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Funding

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NSF Division of Ocean Sciences (NSF OCE)	OCE-1259603

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