Water quality (including salinity, temperature, pH, O2, chl, DIC, DOC) time series from a mooring and time-series transect in Tomales Bay, Central California Coast from 2008-2011 (BOAR project)

Website: https://www.bco-dmo.org/dataset/3691
Version: 12 Oct 2012
Version Date: 2012-10-12

Project
» Bodega Ocean Acidification Research (BOAR)

Contributors	Affiliation	Role
Hill, Tessa M.	University of California-Davis (UC Davis-BML)	Principal Investigator, Contact
Russell, Ann D.	University of California-Davis (UC Davis)	Principal Investigator, Contact
Gaylord, Brian	University of California-Davis (UC Davis-BML)	Co-Principal Investigator
Sanford, Eric	University of California-Davis (UC Davis-BML)	Co-Principal Investigator
Rauch, Shannon	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Table of Contents

Dataset Description

Oceanographic sampling for water quality parameters in Tomales Bay, CA (38.148N, 122.898W). Tomales Line is a ~monthly time series through Tomales Bay, California, sampling every 2 km.

This study reoccupies the stations studied in the LMER BRIE study: http://lmer.marsci.uga.edu/tomales/

For live-streaming data from Tomales Bay, visit http://www.ipacoa.org/Explorer and click on the icon in Tomales Bay.

Methods & Sampling

Sample/station number refers to km inside mouth of Tomales Bay (station 2 = 2km from mouth). "Buoy" indicates a sample at the navigational buoy at the entrance of Tomales Bay. Field data were collected using a YSI ProPlus multi parameter probe. Alkalinity was analyzed using auto titration and corrected using Dickson Lab standards. DIC samples were sent to outside labs for analyses.

Data Processing Description

Original parameter names were changed to conform to BCO-DMO conventions.

12 Oct 2012: Station coordinates provided by PI were added.

30 March 2015: Restricted-only access and added ISO_DateTime field.

[ ]

Data Files

File
Tomales_line.csv(Comma Separated Values (.csv), 46.05 KB) MD5:700bc78c8e836bf63545ce2238a80d27 Primary data file for dataset ID 3691

[ ]

Parameters

Parameter	Description	Units
date_local	Date (local time).	mm/dd/YYYY
month_local	2-digit month of year, local time.	mm (01 to 12)
day_local	2-digit day of month, local time.	dd (01 to 31)
year	Four-digit year.	YYYY
time_local	Local time, 24-hour clock.	HHMM
sta_id	Station ID; Refers to km inside mouth of Tomales Bay (station 2 = 2km from mouth).	dimensionless
sal	Salinity.	psu
temp	Water temperature.	degrees C
pH	pH	NBS pH scale
pH_mV	pH in millivolts.	mV
O2_sat_pcnt	Percent dissolved oxygen. Originally named 'ODO'.	%
O2_mg_L	Dissolved oxygen. Originally named 'ODO'.	mg/L
chl	Total chlorophyll. Note: units are mg/L	mg/L
sp_cond	Specific conductance.	S/cm
alk	Alkalinity analyzed using auto titration and corrected using Dickson Lab standards.	umol/kg
DIC	Dissolved inorganic Carbon analyzed at UC Davis lab. Originally named 'DIC_UC_Davis_PES'.	umol/kg
DIC2	Dissolved inorganic Carbon analyzed at University of Georgia lab. Originally named 'DIC_U_of_GA'. NOTE: units are umol/L.	umol/L
DOC_ppm	Dissolved organic Carbon analyzed at UC Davis lab. Originally named 'DOC_UC_Davis_PES'. NOTE: units are ppm.	ppm
comment	Additional field notes/comments related to data acquisition and/or processing.	text
lat	Latitude of the sampling station. Positive = North.	decimal degrees
lon	Longitude of the sampling station. Positive = East.	decimal degrees
ISO_DateTime_Local	Date and time formatted to ISO 8601 standard. This standard is based on ISO 8601:2004(E) and takes on any of the following forms: e.g. 2009-08-30T09:05:00[.xx] (local time) 2009-08-30T14:05:00[.xx]-05:00 where 'T' indicates the start of the time string. Optional: Note the Time Zone (TZ) as +/-HH:MM. Time Zone signage is for conversion from local to UTC.	YYYY-MM-DDTHH:MM:SS[.xx][+/-TZ]

Instruments

Dataset-specific Instrument Name	YSI Professional Plus Multi-Parameter Probe
Generic Instrument Name	YSI Professional Plus Multi-Parameter Probe
Dataset-specific Description	Field data were collected using a YSI ProPlus multi parameter probe.
Generic Instrument Description	The YSI Professional Plus handheld multiparameter meter provides for the measurement of a variety of combinations for dissolved oxygen, conductivity, specific conductance, salinity, resistivity, total dissolved solids (TDS), pH, ORP, pH/ORP combination, ammonium (ammonia), nitrate, chloride and temperature. More information from the manufacturer.

Deployments

Tomales_Line

Website	https://www.bco-dmo.org/deployment/58872
Platform	Tomales_Bay_Moorings
Start Date	2008-08-20
End Date	2011-06-29
Description	Time-series stations composing a transect in Tomales Bay, CA. Stations are sampled ~monthly for the BOAR project ('Bodega Ocean Acidification Research'). Stations are same as those used in the LMER/BRIE study (http://lmer.marsci.uga.edu/tomales/).

Project Information

Bodega Ocean Acidification Research (BOAR)

Website: http://bml.ucdavis.edu/research/research-programs/climate-change/oceanacidification/

Coverage: Central California coast (northeast Pacific)

The absorption of human-produced CO2 into the world's oceans is decreasing seawater pH and causing marked declines in the saturation state for calcium carbonate, a major building block for shells, skeletons, and tests of many marine species. Such changes (collectively termed "ocean acidification") have the potential to devastate a broad array of organisms, both at the level of individuals and at population and ecosystem scales. Although awareness of these issues is rapidly growing, most of what is known is based on studies of coral reef organisms and plankton.

The proposed work will enhance understanding of impacts from ocean acidification by providing rigorous data on several new fronts applicable to temperate systems. The project will operate within one of the strongest upwelling centers of the eastern Pacific, where global trends in acidification are amplified by the presence of cold water characterized by already-high levels of aqueous CO2. Using an integrated, comparative approach that exploits the expertise of oceanographers, marine chemists, and biologists, the project will explicitly couple moored and shipboard measurements of seawater chemistry to controlled laboratory and field studies of biological responses.

Two vital foundation species (the California mussel, *Mytilus californianus*, and the Olympia oyster, *Ostrea conchaphila*) will be targeted. These two species play disproportionately important roles in open-coast and estuarine systems, respectively. Larvae (which are often the most vulnerable stages) of mussels and oysters will be cultured under elevated-CO2 conditions through the full pelagic period and into juvenile life. Growth and survivorship will be quantified, and water temperature and salinity will be varied to test for interactive effects of multiple factors. Intraspecific variation in response of larvae from different parental lineages will be examined. "Carry-over" effects that originate from exposure during the larval stage, but influence subsequent juvenile growth and survival, will be determined both in the laboratory and using field outplants. Because larval and juvenile stages play important roles as demographic age-structure bottlenecks, overall population consequences will be estimated through comparison of observed impacts on early life stages to other recognized sources of recruitment variation.

Data Status: Data will be reported from the BML offshore oceanographic moorings and from moorings within nearby Tomales Bay. The moorings will be outfitted with autonomously recording pH and pCO2 sensors, and these measurements will be supplemented with discrete water samples collected monthly along two associated transects.

Live Data: For live-streaming data from Tomales Bay, visit http://www.ipacoa.org/Explorer and click on the icon in Tomales Bay.

Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0927255