Water temperature from Niskin bottle samples measured at the PICO time-series station (34.7181 deg N, 76.6707 deg W) from 2010-2012 (PICO project)

Website: https://www.bco-dmo.org/dataset/4037
Version: 03 Sept 2013
Version Date: 2013-09-03

Project
» Pivers Island Coastal Observatory (PICO)

Contributors	Affiliation	Role
Johnson, Zackary I.	Duke University	Principal Investigator, Contact
Hunt, Dana	Duke University	Co-Principal Investigator
Rauch, Shannon	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Table of Contents

Dataset Description

Water temperature measured at the Pivers Island Coastal Observatory (PICO) from 2010 to 2012.

Note: Temperature was not measured at all time points, thus, some dates have no data ('nd') in the 'temp_bot' column.

Methods & Sampling

Water was sampled using a 5 L niskin bottle centered at 1 m with a bottle length of 0.7 m. Temperature was measured in duplicate using NIST traceable thermocouples (VWR#23609-232).

Data Processing Description

Quality Scores (qflag) as follows:
1 = excellent (no known issues),
2 = suspect,
3 = poor (known reason to suspect data).

BCO-DMO Processing Notes:
- Created 'replicate' column and re-arranged data so that replicates are in rows, not columns.
- Modified parameter names to conform with BCO-DMO naming conventions.
- Replaced blanks with 'nd' to indicate 'no data'.

- Separated date into month, day, and year columns.

[table of contents | back to top]

Data Files

File
temperature.csv (Comma Separated Values (.csv), 55.16 KB) MD5:cbab3227c13297fb403a9703c62808ef Primary data file for dataset ID 4037

[table of contents | back to top]

Parameters

Parameter	Description	Units
deployment	Deployment name/id number.	text
lat	Latitude of sampling location. Positive = North.	decimal degrees
lon	Longitude of sampling location. Positive = East.	decimal degrees
year	Year (local time) of the sampling event.	YYYY
month_local	Month (local time) when the sampling event occurred.	mm (01 to 12)
PID_num	Unique, sequential "occupation" number for sampling. (The unique time/day when sampling occurred.)	dimensionless
day_local	Day of month (local time) when the sampling event occurred.	dd (01 to 31)
time_local	Time (local) when the sampling event occurred; 24-hour clock.	HHMM.mm
time_qflag	Quality score for time_local: 1 = excellent (no known issues); 2 = suspect; 3 = poor (known reason to suspect data).	dimensionless
depth	Depth of water sampling.	meters
replicate	Replicate identifier. (All of the "A" temperatue samples are from the same bottle, however "A" replicates for temperature are unrelated to "A" replicates in the other PICO datasets.)	text
temp_bot	Temperature from Niskin bottle samples.	degrees Celsius
temp_bot_qflag	Quality score for temp_bot: 1 = excellent (no known issues); 2 = suspect; 3 = poor (known reason to suspect data).	dimensionless
yrday	Consecutive day of year for a specified year, as a decimal. The fraction of the value represents the time within the day (e.g. a value of 1.5 means January 1 at 1200 hours).	dimensionless
ISO_DateTime_Local	Date-time (local) formatted to ISO 8601 standard.	YYYY-MM-DDTHH:MM:SS.ss

[table of contents | back to top]

Instruments

Dataset-specific Instrument Name	Niskin bottle
Generic Instrument Name	Niskin bottle
Generic Instrument Description	A Niskin bottle (a next generation water sampler based on the Nansen bottle) is a cylindrical, non-metallic water collection device with stoppers at both ends. The bottles can be attached individually on a hydrowire or deployed in 12, 24, or 36 bottle Rosette systems mounted on a frame and combined with a CTD. Niskin bottles are used to collect discrete water samples for a range of measurements including pigments, nutrients, plankton, etc.

Dataset-specific Instrument Name	Water Temperature Sensor
Generic Instrument Name	Water Temperature Sensor
Dataset-specific Description	Temperature was measured in duplicate using NIST traceable thermocouples (VWR#23609-232)
Generic Instrument Description	General term for an instrument that measures the temperature of the water with which it is in contact (thermometer).

[table of contents | back to top]

Deployments

PICO_1-301

Website	https://www.bco-dmo.org/deployment/59063
Platform	Duke University Marine Lab
Start Date	2010-06-28
End Date	2012-06-26
Description	The PICO time series is sampled weekly (or more frequently) to capture physical, chemical and biological variability in the coastal ocean. This time series enables the investigator to collaborate with a number of researchers and will serve as a long-term research focus. Project information: http://oceanography.ml.duke.edu/johnson/research/pico/

[table of contents | back to top]

Project Information

Pivers Island Coastal Observatory (PICO)

Website: http://oceanography.ml.duke.edu/johnson/research/pico/

Coverage: 34.7181 deg N, 76.6707 deg W

From the project website:
Carbon dioxide is rising at ~3% per year in the atmosphere and oceans leading to increases in dissolved inorganic carbon and a reduction in pH. This trend is expected to continue for the foreseeable future and ocean pH is predicted to decrease substantially making the ocean more acidic, potentially affecting the marine ecosystem. However, coastal estuaries are highly dynamic systems that often experience dramatic changes in

environmental variables over short periods of times. In this study, the investigators are measuring key variables of the marine carbon system along with other potential forcing variables and characteristics of the ecosystem that may be affected by these pH changes. The goal of this project is to determine the time-scales and magnitude of natural variability that will be superimposed on any long term trends in ocean chemistry.

This project is associated with Ocean Acidification: microbes as sentinels of adaptive responses to multiple stressors: contrasting estuarine and open ocean environments.

[table of contents | back to top]

Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1031064
NSF Ocean Sciences Research Initiation Grants (NSF OCE-RIG)	OCE-RIG-1322950

[table of contents | back to top]