Salinity measurements from Niskin bottle samples 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/4035
Version: 03 Sept 2013
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Project
» Pivers Island Coastal Observatory (PICO)

Contributors	Affiliation	Role
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Dataset Description

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

Note: Salinity was not measured at all time points, thus, some dates have no data ('nd') in the salinity columns.

Methods & Sampling

Water was sampled using a 5 L niskin bottle centered at 1 m with a bottle length of 0.7 m. Salinity was measured using a calibrated handheld digital refractometer (Atago PAL-06S), using a refractometer (Vista A366ATC), or using a Guideline Portasal 8410A all according to manufacturer's instructions and calibrated against known reference materials.

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.

Data Files

File
salinity.csv (Comma Separated Values (.csv), 56.42 KB) MD5:e282269c39bc6febe761486c5847e21b Primary data file for dataset ID 4035

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" salinity samples are from the same bottle, however "A" replicates for salinity are unrelated to "A" replicates in the other PICO datasets.)	text
sal_Atago	Salinity measured using a calibrated handheld digital refractometer (Atago PAL-06S).	
sal_Atago_qflag	Quality score for sal_Atago: 1 = excellent (no known issues); 2 = suspect; 3 = poor (known reason to suspect data).	dimensionless
sal_SpyGlass	Salinity measured using a refractometer (Vista A366ATC).	
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

Instruments

Dataset-specific Instrument Name	Refractometer
Generic Instrument Name	Refractometer
Dataset-specific Description	Salinity was measured using a calibrated handheld digital refractometer (Atago PAL-06S) or using a refractometer (Vista A366ATC).
Generic Instrument Description	A refractometer is a laboratory or field device for the measurement of an index of refraction (refractometry). The index of refraction is calculated from Snell's law and can be calculated from the composition of the material using the Gladstone-Dale relation. In optics the refractive index (or index of refraction) n of a substance (optical medium) is a dimensionless number that describes how light, or any other radiation, propagates through that medium.

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/

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.

Funding

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