

# Turbidity measured by handheld turbidimeter 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/4032>

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## Project

» [Pivers Island Coastal Observatory](#) (PICO)

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## Dataset Description

Turbidity (in Nephelometric Turbidity Units [NTU]) measured at the Pivers Island Coastal Observatory (PICO) from 2010 to 2012.

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

## Methods & Sampling

Turbidity was measured in duplicate on discrete samples using a calibrated handheld turbidimeter (Orion AQ4500).

## 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.

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## Data Files

File
<b>turbidity.csv</b> (Comma Separated Values (.csv), 54.81 KB) MD5:01e673735a197ee5a18967bc5e48273d Primary data file for dataset ID 4032

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## 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" turbidity samples are from the same bottle, however "A" replicates for turbidity are unrelated to "A" replicates in the other PICO datasets.)	text
turbidity	Turbidity measured in duplicate on discrete samples using a calibrated handheld turbidimeter.	Nephelometric Turbidity Units (NTU)
turbidity_qflag	Quality score for turbidity: 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

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## Instruments

<b>Dataset-specific Instrument Name</b>	Turbidity Meter
<b>Generic Instrument Name</b>	Turbidity Meter
<b>Dataset-specific Description</b>	An Orion AQ4500 Turbidimeter was used to measure turbidity of discrete samples.
<b>Generic Instrument Description</b>	A turbidity meter measures the clarity of a water sample. A beam of light is shown through a water sample. The turbidity, or its converse clarity, is read on a numerical scale. Turbidity determined by this technique is referred to as the nephelometric method from the root meaning "cloudiness". This word is used to form the name of the unit of turbidity, the NTU (Nephelometric Turbidity Unit). The meter reading cannot be used to compare the turbidity of different water samples unless the instrument is calibrated. Description from: <a href="http://www.gvsu.edu/wri/education/instructor-s-manual-turbidity-10.htm">http://www.gvsu.edu/wri/education/instructor-s-manual-turbidity-10.htm</a> (One example is the Orion AQ4500 Turbidimeter)

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## Deployments

### PICO\_1-301

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/59063">https://www.bco-dmo.org/deployment/59063</a>
<b>Platform</b>	Duke University Marine Lab
<b>Start Date</b>	2010-06-28
<b>End Date</b>	2012-06-26
<b>Description</b>	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: <a href="http://oceanography.ml.duke.edu/johnson/research/pico/">http://oceanography.ml.duke.edu/johnson/research/pico/</a>

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## 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.](#)

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## Funding

Funding Source	Award
<a href="#">NSF Division of Ocean Sciences (NSF OCE)</a>	<a href="#">OCE-1031064</a>
<a href="#">NSF Ocean Sciences Research Initiation Grants (NSF OCE-RIG)</a>	<a href="#">OCE-RIG-1322950</a>

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