

## 1. DATA AND INFORMATION TYPES

### A. Provide a contextual description of the data stream.

The Wired Pier is an array of instruments around the Exploratorium campus at Piers 15 and 17 in the San Francisco Bay, California. Outfitted with a suite of in-situ water quality and a met station, this station is collecting scientific grade measurements which are also used for displaying the live data to visitors. Data are made public through the Exploratorium ERDDAP server (<http://erddap.exploratorium.edu:8080>). Instruments include six minute sampling subsurface marine sensors, an hourly sampling pCO<sub>2</sub> buoy, and a six minute sampling meteorological platform.

Exploratorium data streams are in the process of being added to the CeNCOOS data portal, and will be available in March 2018.

### B. How many station locations are there for this data stream?

Although all sensors are located at the Exploratorium site, they are divided into a few distinct stations due to varying instrument depths:

Exploratorium (SeaBird/Turner Instruments) , historic  
Exploratorium (pCO<sub>2</sub> Buoy), historic  
Exploratorium (Weather)

### C. What are the specific variables of the data.

The variables currently served are:

#### **Exploratorium (SeaBird/Turner Instruments)**

Sea Water Temperature  
Salinity  
Dissolved Oxygen  
Colored Dissolved Organic Matter (CDOM)  
Turbidity  
Phycoerythrin (Freshwater Cyanobacteria)  
Phycocyanin (Marine Cyanobacteria)

#### **Exploratorium (pCO<sub>2</sub> Buoy)**

Dissolved CO<sub>2</sub> (Seawater)  
Dissolved CO<sub>2</sub> (Atmospheric)

#### **Exploratorium (Weather)**

Air Temperature  
Precipitation  
Relative Humidity  
Sea Level Pressure

Solar Radiation  
Wind Speed/Direction  
Wind Gust Speed/Direction

**D. Provide information about the sampling platform or instrumentation.**

The sampling platforms include a SeaBird CTD instrument, Turner C6P fluorometer, pCO<sub>2</sub> buoy, and meteorological platform.

**2. DATA PATHWAY**

**A. Is a data sharing agreement required?**

Data are available publically.

**B. In which format(s) was data received by CeNCOOS?**

Data are downloaded from the Exploratorium ERDDAP in CSV format.

**C. How can the information be accessed?**

The data will be available through the CeNCOOS data portal, where it can be downloaded or explored through interactive visualizations. Specifically, data will be available from two unique access points:

- File Downloads (CSV)
- ERDDAP

**D. What file formats will be used for sharing data, if different from the original?**

Data are shared as CSV and through ERDDAP via the CeNCOOS data portal. Data are also available for exploration in the CeNCOOS portals via interactive, graphical visualizations.

**E. Describe how the data is ingested (e.g. the flow of data from source to CeNCOOS data portals) and any transformations or modifications made to share data in the CeNCOOS data portal.**

Data are downloaded from the source ERDDAP server, transformed to standard units if needed, and stored in the CeNCOOS sensor system. The system may omit values determined to be outside of sane ranges when displaying data in the CeNCOOS portal; all data is included when downloading from CeNCOOS data systems. The system may convert sensor values into user requested units as needed. Metadata is enriched as appropriate (specific units, unambiguous parameter names, CF standard names, etc).

**F. What metadata or contextual information is provided with the data?**

Data are shared in the CeNCOOS portals with descriptive project and file metadata describing the data and accompanying fields. Metadata are also available via ERDDAP:

[https://erddap.cencoos.org/erddap/info/exploratorium\\_exploratorium/index.html](https://erddap.cencoos.org/erddap/info/exploratorium_exploratorium/index.html)

A link to the data source is also provided in the CeNCOOS data portal.

**G. Are there ethical restrictions to data sharing?**

No

**a. If so, how will these be resolved?**

N/A

**H. Who holds intellectual property rights (IPR) to the data?**

Exploratorium

**I. Describe any effect of IPR on data access.**

None (data is public)

**3. DATA SOURCE AND QUALITY CONTROL**

**A. Indicate the data source type (i.e. Federal, Non-Federal, University, State Agency, Local Municipality, Military Establishment (branch), private industry, NGO, non-Profit, Citizen Science, Private individual)**

Private

**a. If Federal data source, were changes applied to the data?**

N/A

**b. If Yes, describe any changes to the data that require documentation?**

N/A

**B. Indicate the data reporting type (e.g. real-time, historical).**

Real-time

**C. If real-time, list the QARTOD procedures that are currently applied.**

Two of the five required QARTOD tests for weather variables are being applied by CeNCOOS: Syntax and Gross Range Tests. Refer to CeNCOOS Data Management System plan for details.

**D. If real-time, list the QARTOD procedures that are planned for implementation.**

Remaining required tests are planned for implementation by December 31, 2018.

**E. What is the status of the reported data? (e.g. raw, some QC, incomplete, delayed mode processed but not QC'd)**

Some QC by the originator (pCO<sub>2</sub> buoy data is not QCed)

**F. Describe the data control procedures that were applied by the originator.**

Contact the data provider for availability of QC information.

**a. Provide a link to any documented procedures.**

N/A

**G. Describe the data control procedures that were applied by CeNCOOS.**

N/A

**a. Provide a link to any documented procedures.**

N/A

**H. List the procedures taken for data that could not be QC'd as directed.**

N/A

**4. STEWARDSHIP AND PRESERVATION POLICIES**

**A. Who is responsible for long-term data archiving?**

Data was aggregated for visualization and exploration with other layers in the CeNCOOS data portal. If the data provider chooses to archive these data at a national archive in the future, they may do it directly, or using the CeNCOOS-facilitated pathway to NCEI.

**B. Which long-term data storage facility will be used for preservation?**

Real-time and near real-time data are automatically archived to NCEI from CeNCOOS. Archived datasets can be viewed at <https://www.nodc.noaa.gov/ioos/>

For more information about CeNCOOS archival practices see [DMP Section 4.8 Data Archival](#)

**C. Describe any transformation necessary for data preservation.**

Data are formatted to NCEI specifications for archival. See [DMP Appendix H1.1 NCEI Archival Agreement](#) for descriptions of NCEI archival methods.

**D. List the metadata or other documentation that will be archived with the data.**

N/A