|  |
| --- |
| **Metadata: Castle Point Pier Station (inactive)****Location:** Stevens Institute, Hoboken, NJ ([40.741969, -74.024056](https://www.google.com/maps/place/40%C2%B044%2731.1%22N%2B74%C2%B001%2726.6%22W/%4040.7419521%2C-74.0244908%2C246m/data%3D%213m1%211e3%214m5%213m4%211s0x0%3A0x0%218m2%213d40.741969%214d-74.024056) )**Data collection periods:** 6/13/16 to 9/29/16**Parameters:** Water depth, acidity, dissolved oxygen, salinity, turbidity, and water temperature |
| *Disclaimer: HRECOS is a research project. No warranty—either express or implied—is made for any information presented by this program.*Researchers interested in accessing this station to co-locate monitoring equipment should contact the station manager (see contact info below). |
| **Contacts**:Brittney Flaten, HRECOS CoordinatorNY State Dept. of Environmental Conservation256 Norrie Point Way, Staatsburg, NY 12580Phone: 845-889-4745Email: brittney.flaten [at] dec.ny.gov |  |
| **Distribution terms:**HRECOS requests that attribution be given whenever HRECOS material is reproduced and re-disseminated and the HRECOS Coordinator be notified prior to publications including any part of the data. Example citation: “Hudson River Environmental Conditions Observing System. 2012. Castle Point Pier Station data. Accessed April 13th, 2036. <http://www.hrecos.org/>.” |
| **Data Quality Assurance:**Data collection and verification have been performed since the establishment of this station (June 2016) according to the HRECOS Quality Assurance Project Plan, which is available at [www.hrecos.org](http://www.hrecos.org) (“About HRECOS” -> “Supporting Documents”). See relevant section on following pages for QAQC flag and comment code definitions. |
| **Location and equipment:**The Castle Point Pier bottom station is located off the western shore of the Hudson River off the Stevens Institute campus in Hoboken, NJ. It is in approximately 9-14’ of water (with low/high tide variability) and is 200’ from the shoreline. The probes are approximately 1.3 feet above the riverbed. The instrument is a YSI 6600 sonde (water depth\*, acidity, dissolved oxygen, salinity, turbidity, and water temperature). The Castle Point buoy station’s near-surface measurements include the same sensors (except depth) and are a few hundred feet to the northeast, and together these two stations give a top-to-bottom estimate of estuarine gradients such as salinity and density stratification.\*Water pressure above the instrument is measured by the sonde via pressure transducer, then converted to a depth, therefore this measurement is influenced by atmospheric pressure variations. The error caused by the phenomenon is equal to approximately 1.03 cm for every 1 millibar change in atmospheric pressure. Some HRECOS stations correct for this in real-time, however this station does not support this real-time correction. The correction can be applied manually using concurrent barometric pressure data from a nearby weather station (*i.e.,* Pier 84) and the following equation:*Corrected Depth = Depth + ((1013- Barometric Pressure) \* .0102)* |
| **Special remarks / notes:** * 6/9/2016 – initial deployment
* 8/2/2016 – some sensors not functioning, likely due to known problem that the instrument slowly flooded with seawater (old, stripped canister threading)
* 11/3/2016 – generally good data until biofouling occurred (we could not recover it sooner, so we let it foul). For most sensors there were good data for August and into early-to-mid September 2016
 |
| **QAQC Comment Code definitions:** General Errors[GIM] instrument malfunction [GIT] instrument recording error, recovered telemetry data [GMC] no instrument deployed due to maintenance/calibration [GPF] power failure/low battery [GQR] rejected due to QAQC checks[GSM] see metadata [GIC] no instrument deployed due to ice [GNF] deployment tube clogged/no flow [GOW] out of water eventSensor Errors [SBO] blocked optic [STF] catastrophic temperature sensor failure [SCF] conductivity sensor failure [SDF] depth port frozen [SDP] DO membrane puncture [SDO] DO suspect [SIC] incorrect calibration/contaminated standard [SNV] negative value [SPC] post calibration out of range [SSD] sensor drift [SSM] sensor malfunction [SOW] sensor out of water [SSR] sensor removed (not deployed) [STS] turbidity spike [SWM] wiper malfunction/loss Comments (CAB) algal bloom (CAF) acceptable calibration/accuracy error of sensor (CAP) depth sensor in water, affected by atmospheric pressure (CBF) biofouling (CCU) cause unknown (CDA) DO hypoxia < 28 percent saturation (CDB) disturbed bottom (CDF) data appear to fit conditions (CFK) fish kill (CIP) surface ice present at sample station (CLT) low tide (CMC) in field maintenance/cleaning (CMD) mud in probe guard(CND) new deployment begins (CRE) significant rain event (CSM) see metadata (CTS) turbidity spike (CVT) possible vandalism/tampering (CWD) data collected at wrong depth (CWE) significant weather event |

**Table 1.** Sensor specifications

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Units | Sensor type | Model | Range | Accuracy | Resolution | Notes |
| **Acidity** | Hydrogen ion concentration (pH) | Glass combination electrode | 599702 | 0 – 14 units | ±0.1 pH units within ±10°Cof calibration temperature;±0.2 pH units for entire temp range | 0.01 units | T63<3 sec |
| **Salinity (calculated)**  | Parts per thousand (ppt) | Calculated from cond. and temp. | N/A | 0 – 70 ppt | +/‐ 1.0% of reading or 0.1ppt | 0.01 ppt | NA |
| **Specific Conductance** | Microsiemens per cm (µS/cm) | Nickel electrode | YSI 6560 | 0 – 100 µS/cm | ±-0.5% + 0.001 µS/cm | 0.001 – 0.1 µS/cm (range dependent) | NA |
| **Dissolved oxygen** | Air saturation (%)¾¾¾¾mg/L | Optical, luminescence lifetime ¾¾¾¾Calculated | 599100-01 | 0 – 500%¾¾¾¾0 – 50 mg/L | 0 – 200%: ±1%200 – 500%: ±5%¾¾¾¾0 – 20 mg/L: ±0.1 mg/L or 1% (whichever is greater);20 – 50 mg/L: ±-5% | 0.1%¾¾¾¾0.01 mg/L | T63<5 sec |
| **Turbidity** | Nephelometric Turbidity Units (NTU) | Optical | YSI 6136 | 0 – 1000 NTU | ±2% or 0.3 NTU (whichever is greater) | 0.1 NTU | NA |
| **Water level** | Meters (m) | Pressure transducer | YSI 6600 (sonde) | 0 to 30 ft (9.1 m) | 0-10 ft: +/- 0.01 ft (0.003 m); 10-30 ft: +/- 0.06 ft (0.018 m) | 0.001 ft (0.001 m) | Not vented to atmosphere |
| **Water temperature** | Celsius (°C) | Thermistor | 599870-01 | -5 to +45°C | -5 to 35°C: ±0.01°C35 to 50°C: ±0.05°C | 0.001°C | T63<1 sec |