HRECOS Schodack Landing Weather Metadata

Last updated: 03/24/2025

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Station Overview

Location: Schodack Island, (42.501200, -73.780381)

Data collection period: 4/25/08 – 4/8/13; 12/11/13 – 10/31/2024

Parameters: air temperature, barometric pressure, dew point, radiation (total[1], PAR[2]), precipitation, precipitation, relative humidity, wind speed, direction, and gusts

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Station Description:

The Schodack Island weather station is on a small rock pile island just west of Schodack Island State Park and just south of the I-90 by-pass bridge. All sensors are attached to the tower holding the U.S. Coast Guard navigation aids (marker # 197), except for the barometer, which is onshore. The island is at least 130 meters from either shore so there is no interference from nearby vegetation or ridgelines. Meteorological sensors report the following parameters every 15 minutes. Dew point and daily cumulative rainfall are calculated in real-time. Data is transmitted from a Campbell Scientific CR1000 datalogger via RF401 radios to a CR800 datalogger onshore.

Special Remarks:

Date	Remark
06/05/2009	Rain bucket unclogged
7/13/2010	Rain bucket unclogged. Sensors replaced with newly calibrated ones.
7/13/2010-7/16/2010	Wind monitor deployed incorrectly
11/3/2011- 11/28/2011	Power failure
12/20/2011	Equipment maintenance
8/2012	Equipment maintenance
4/8/2013 – 12/11/2013	Communications failure
12/11/2013	Sensors replaced with newly calibrated ones
4/21/2014	Wind monitor was deployed incorrectly in Dec 2013. All data corrected retroactively.
11/16/2021	Equipment maintenance
10/31/2024	Weather station was dismantled. Plans pending to relocate onshore next to water quality station.

Distribution Terms:
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Data Quality Assurance:
Data collection and verification have been performed on all parameters (except velocity; see below) since the establishment of this station (January 2011) according to the HRECOS Quality Assurance Project Plan, which is available at www.hrecos.org

Remark on velocity: The level gage and velocity meter have been maintained by the U.S. Geological Survey since their adoption/installation by the agency in September 2016. Water elevation is verified by USGS annually, while velocity is only a working dataset and is primarily purposed for short-term operational use. USGS-verified data may have been corrected based on field measurements, sensor calibrations, sensor cleanings, and other observations using standard USGS methodology. Unverified data is provisional and is subject to revision.

Code Definitions

Flag code definitions:

A Accepted data
P Provisional data
S Suspect data, consult comment codes
R Rejected data, consult comment codes
C Corrected data, consult comment codes

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
[GMT] instrument maintenance
[GDP] power down
[GPR] program reload

Sensor Errors

[SIC] incorrect calibration constant, multiplier or offset
[SNV] negative value
[SSN] not a number/unknown value
[SOC] out of calibration
[SSM] sensor malfunction
[SSR] sensor removed

Comments

(CAF) acceptable calibration/accuracy error of sensor
(CDF) data appear to fit conditions
(CRE) significant rain event
(CSM) see metadata
(CVT) possible vandalism/tampering

Weather Sensor Specifications Until 12/11/2013

Parameter: Air temperature
Units: Celsius
Sensor Type: Platinum resistance thermometer
Model#: HMP45AC
Range: -40 C to +60 C
Accuracy: ±0.2°C at 20°C

Parameter: Relative humidity
Units: %
Sensor Type: Capacitive polymer
Model#: HMP45AC
Range: 0 to 100%
Accuracy: At 20°C: ±2% (0-90%); ±3% (90-100%)
Temperature dependence: ±0.05%/°C

Parameter: Barometric pressure
Units: mbar
Sensor Type: Silicon capacitive
Model#: CS106
Range: 500 to 1100 mbar
Accuracy: ±0.3 mb @ +20°C; ±0.6 mb @ 0° to 40°C; ±1.0 mb @ -20° to +45°C; ±1.5 mb @ -40° to +60°C

Parameter: Precipitation
Units: mm
Sensor Type: Tipping bucket with magnetic switch
Model#: CS TE525WS-L
Accuracy: Up to 1 in./hr: ±1%; 1 to 2 in./hr: +0, -2.5%; 2 to 3 in./hr: +0, -3.5%

Parameter: Radiation (PAR)
Units: W/m^2
Sensor Type: Pyranometer
Model#: Kipp and Zonen CM 11
Range: Light spectrum 305-2800 nm

Parameter: Wind direction
Units: Degrees
Sensor Type: Mechanical vane
Model#: MetOne 034B
Accuracy: ± 4 Degrees

Parameter: Wind speed
Units: m/s
Sensor Type: Mechanical propeller
Model#: MetOne 034B

Range: 0 to 100 m/s
Accuracy: ± 1.1 m/s

Weather Sensor Specifications After 12/11/2013
Parameter: Air temperature
Units: Celsius
Sensor Type: Platinum resistance thermometer
Model#: HC2S3
Range: -40 C to +60 C
Accuracy: ±0.1°C at 23°C

Parameter: Relative humidity
Units: %
Sensor Type: Capacitive polymer
Model#: HC2S3
Range: 0 to 100%
Accuracy: ±0.8% at 23°C

Parameter: Barometric pressure
Units: mbar
Sensor Type: Silicon capacitive
Model#: CS106
Range: 500 to 1100 mbar
Accuracy: ±0.3 mb @ +20°C; ±0.6 mb @ 0° to 40°C; ±1.0 mb @ -20° to +45°C; ±1.5 mb @ -40° to +60°C

Parameter: Precipitation
Units: mm
Sensor Type: Tipping bucket with magnetic switch
Model#: CS TE525WS-L
Accuracy: Up to 1 in./hr: ±1%; 1 to 2 in./hr: +0, -2.5%; 2 to 3 in./hr: +0, -3.5%

Parameter: Radiation (PAR)
Units: mmoles/m^2
Sensor Type: Silicon PV detector (400-700 nm)
Model#: LI190SB
Temperature dependence: 0.15% per °C max.

Parameter: Wind direction
Units: Degrees
Sensor Type: Mechanical vane
Model#: RM Young 05103
Range: 355 Degrees
Accuracy: ± 3 Degrees

Parameter: Wind speed
Units: m/s
Sensor Type: Mechanical propeller
Model#: RM Young 05103
Range: 0 to 100 m/s
Accuracy: $\pm$ 0.3 m/s or 1% of reading