HRECOS Port of Albany Weather Metadata

Last updated: 03/24/2025

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Station Overview
Location: Port of Albany, Hudson River (42.61954, -73.75890)

Data collection period: 01/04/2011 – present

Parameters: air temperature, barometric pressure, dew point, radiation (PAR)*, precipitation, daily cumulative rainfall, relative humidity, wind speed**, direction***, and gusts.

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Station Description:
The Albany HRECOS Meteorological station began reporting on January 4th, 2011. It is mounted on the concrete bulkhead on the western shoreline of the Hudson River at the Port of Albany, just to the south of the Cargill Granary. Its coordinates are 42.61954 N, 73.75890 W. Sensors are installed on a 10' tower that is above nearby vegetation and over one hundred feet from nearby structures. Data are reported to a CR1000 datalogger.

Meteorological sensors at this site reports the following parameters every 15 minutes. Dew point and daily cumulative rainfall are calculated by the database.

* Until 6/27/2014, PAR was recorded as photon density (umol s^-1 m^-2). This was changed to total photon flux (mmole m^-2) to be consistent with other HRECOS weather stations.

**Until 6/24/2014, wind speed was recorded as resultant mean. From here on it will be recorded as normal wind speed.

***Although sensors are located a significant distance away from structures, a 2017 analysis by DEC Division of Air Resources suggested that the warehouse to the NW of the station is blocking NW winds. It was noted that NW winds are the second most common after S at the Albany Airport weather station (~8 mi. NNW). See Appendix A for a detailed analysis.

Special Remarks:

Date	Remark
01/04/2011 – 9/6/2011	Barometric pressure used the wrong coefficients. Historical data record was corrected.
10/06/2011	Rain bucket unclogged during site visit
12/22/2011 – 1/1/2012	Power failure
06/17/2012 – 6/18/2012	Power failure
09/06/2012	Wind sensor failure
11/08/2012	Wind sensor replaced
11/08/2012 – 11/15/2012	Wind sensor installed incorrectly; direction is incorrect
06/27/2014	Rain bucket calibration
07/15/2014	All sensors replaced with newly calibrated ones
6/27/2015	Rain bucket unclogged during site visit
8/4/2015	Rain bucket unclogged during site visit
5/23/2016	Discovered that data were offset by 17 minutes. Possible bad internal battery on server PC. Disabled automated time update in LoggerNet and corrected logger time (1:29 PM EST to 1:46 PM EST). Exact duration of time offset unknown, but likely less than 1 year.
8/2/2016	Rain bucket unclogged during site visit
6/26/2018	Rain bucket unclogged during site visit
4/10/2025	Weather station will be dismantled so that equipment can be repaired and/or replaced.

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

Albany Weather Sensor Specifications

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: 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: ± 0.3 m/s or 1% of reading

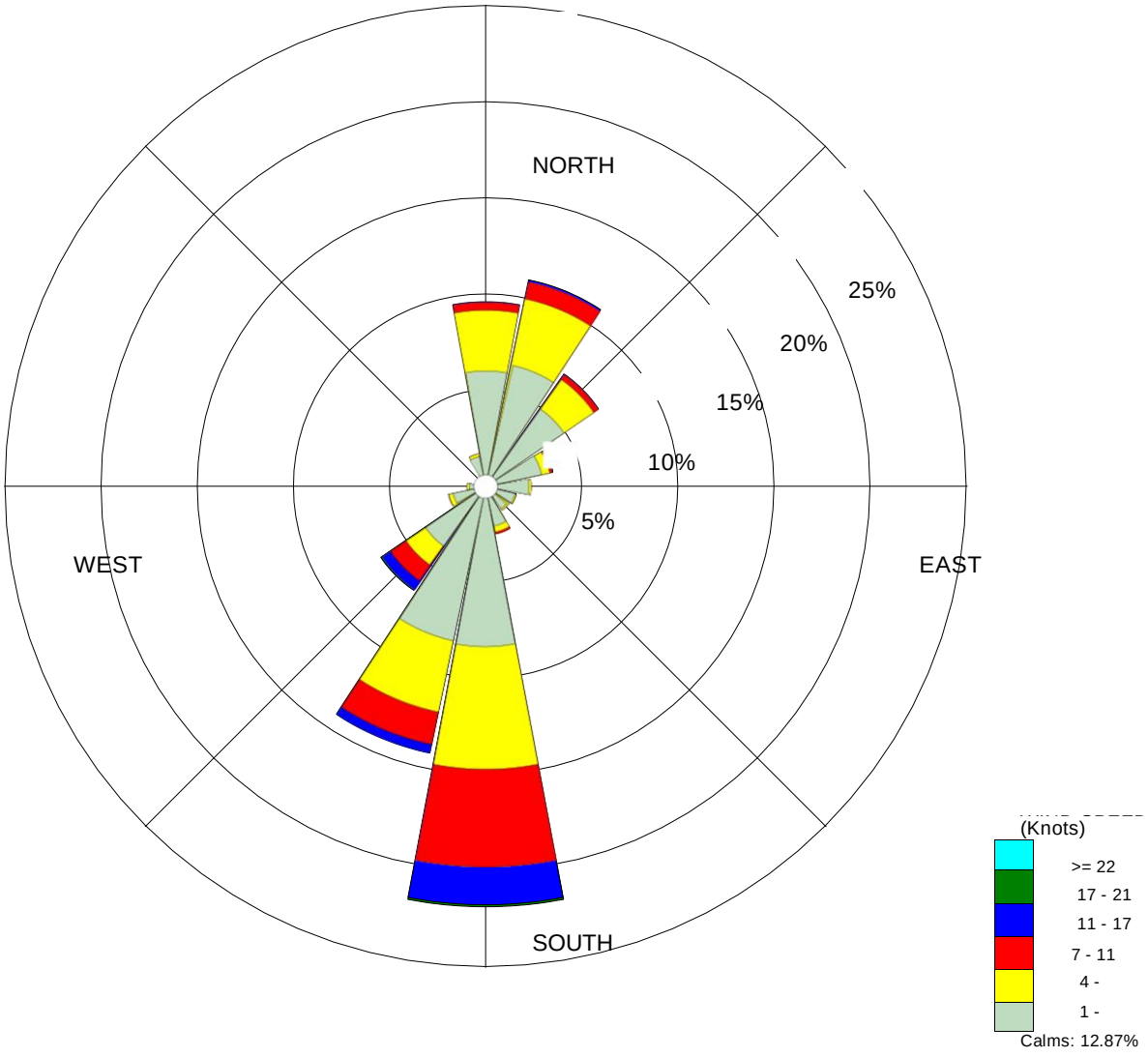
Appendix A

WIND ROSE PLOT:

HRECOS Weather Station, Port of Albany, NY Winds averaged over 5 years (2012-2016)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **Start Date: 1/1/2012 - 01:00 End Date: 12/31/2016 -**		
	CALM WINDS: **12.87%**	TOTAL COUNT: **41736 hrs.**	
	AVG. WIND SPEED: **3.60 Knots**	DATE: **6/29/2017**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software