

HRECOS Mohawk River at Ilion Metadata

Last updated: 03/24/2025

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Station Overview

Location: Ilion Marina ([43.019750, -75.028472](#))

Data collection period: 09/23/2015 – present; seasonal due to canal drawdown

Parameters: pH, dissolved oxygen, specific conductance, turbidity, water temperature, and water depth above sonde

Previous location: Frankfort, NY ([43.045277, -75.070093](#))

Previous data collection period: 2013: 5/1-6/15, 8/23-11/5; 2014: 5/6-7/17

Previous parameters: pH, dissolved oxygen, specific conductance, turbidity, and water temperature.

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Station Description:

The Mohawk River at Ilion water quality monitoring station contributes to the NY State Department of Environmental Conservation's (NYSDEC) Statewide Water Quality Monitoring Program and will assist in the overall development of water management strategies to protect and improve New York's natural resources. Funding is provided by the NYSDEC Mohawk River Basin Program and the New York State Environmental Protection Fund.

The station is located on the shoreline of the Village of Ilion Marina and RV Park. A YSI EXO2 sonde, which is housed in a perforated aluminum pipe mounted to the concrete bulkhead wall, sits 9.8 feet below the top of the wall. Total water depth at this location is ~11 feet. Measurements are taken at 15-minute intervals. See Sensor Specifications section below for more information. Data are logged to a Campbell Scientific CR800 datalogger.

Water depth (relative to sonde) is measured by the sonde's pressure sensor, which is naturally affected by variations in atmospheric (barometric) pressure. Therefore, station is equipped with a CS106 barometer which is used to correct for this phenomenon in real-time, using the following equation:

$$\text{Corrected Depth} = \text{Depth} + ((1013 - \text{Barometric Pressure}) * .0102)$$

¹*Frankfort buoy station (discontinued)*: The previous iteration of this monitoring project was a YSI EMM68 buoy anchored ~1000 ft upstream of the Frankfort Marina in Frankfort, NY, which is about 3 miles upriver of the current location on the non-canal section of the Mohawk. The water depth at this location was ~17 ft. Sensors resided 1 m below the water surface. The parameters recorded were the same as those recorded at Ilion, except for water depth. The Frankfort buoy station was discontinued in July 2014 after multiple equipment failures because of damage from major flooding and debris.

Special Remarks:

Date	Remark
All	Sonde is pulled every winter when the Mohawk River levels are drawn down.
5/31 – 6/16/2013	Power failure
6/10-6/20/2013	Buoy damaged during major flooding
8/1/2013	Buoy redeployed
8/16/2013	Power failure
8/23/2013	Buoy redeployed
10/14/2013	pH sensor failure; not replaced until 2014
11/5/2013	Buoy pulled for winter
5/6/2014	Buoy redeployed
July 2014	Buoy damaged during major flooding
10/28/2024	Sonde removed for winter

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
[GIC]	no instrument deployed due to ice
[GNF]	deployment tube clogged/no flow
[GOW]	out of water event

Sensor 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

YSI EXO2 Sensor Specifications:

Consult description and remarks for upgrade dates.

Parameter: Temperature

Units: Celsius (C)

Sensor Type: Thermistor

Model#: 599870-01

Range: -5 to 50 C

Accuracy: -5 to 35: +/- 0.01, 35 to 50: +/- .005

Resolution: 0.01 C

Parameter: Conductivity

Units: mS/cm

Sensor Type: 4-electrode cell with autoranging

Model#: 599870-01

Range: 0-200 mS/cm

Accuracy: 0 to 100: +/- 0.5% of reading or 0.001 mS/cm; 100 to 200: +/- 1% of reading

Resolution: 0.001 mS/cm to 0.1 mS/cm

Parameter: Salinity

Units: practical salinity units (psu)/parts per thousand (ppt)

Sensor Type: Calculated from conductivity and temperature

Range: 0 to 70 psu

Accuracy: +/- 1.0% of reading pr 0.1 ppt, whichever is greater

Resolution: 0.01 psu

Parameter: Dissolved Oxygen % saturation

Sensor Type: Optical probe w/ mechanical cleaning

Model#: 599100-01

Range: 0 to 500% air saturation

Accuracy: 0-200% air saturation: +/- 1% of the reading or 1% air saturation, whichever is greater 200-500% air saturation: +/- 5% or reading

Resolution: 0.1% air saturation

Parameter: Dissolved Oxygen mg/L (Calculated from % air saturation, temperature, and salinity)

Units: milligrams/Liter (mg/L)

Sensor Type: Optical probe w/ mechanical cleaning

Model#: 599100-01

Range: 0 to 50 mg/L

Accuracy: 0-20 mg/L: +/-0.1 mg/l or 1% of the reading, whichever is greater 20 to 50 mg/L: +/- 5% of the reading

Resolution: 0.01 mg/L

Parameter: pH

Units: pH units

Sensor Type: Glass combination electrode

Model#: 599701 (guarded) or 599702 (wiped)

Range: 0 to 14 units

Accuracy: +/- 0.01 units within +/- 10° of calibration temperature, +/- 0.02 units for entire temperature range

Resolution: 0.01 units

Parameter: Turbidity

Units: formazin nephelometric units (FNU)

Sensor Type: Optical, 90-degree scatter

Model#: 599101-01

Range: 0 to 4000 FNU

Accuracy: 0 to 999 FNU: 0.3 FNU or +/-2% of reading (whichever is greater); 1000 to 4000 FNU +/-5% of reading

Resolution: 0 to 999 FNU: 0.01 FNU, 1000 to 4000 FNU: 0.1 FNU

Parameter: Chlorophyll

Units: micrograms/Liter, RFU

Sensor Type: Optical probe

Model#: 599102-01

Range: 0 to 400 ug/Liter; 0 to 100 RFU

Accuracy: Dependent on methodology

Resolution: 0.1 ug/L chl a, 0.1% RFU

Parameter: Phycocyanin

Units: micrograms/Liter, RFU

Sensor Type: Optical probe

Model#: 599102-01

Range: 0 to 100 ug/Liter; 0 to 100 RFU

Accuracy: Dependent on methodology

Resolution: 0.1 ug/L PC, 0.1% RFU

Remarks on Sensor Specifications and Units*Conductivity:*

Historically, specific conductivity data from HRECOS sites was reported in millisiemens/cm. However beginning in 2019, reporting switched to microsiemens/cm. All data files available on hrecos.org have been converted to reflect this change.