



Prepared in cooperation with the
 U.S. Environmental Protection Agency
 Great Lakes Restoration Initiative
 New York State Department of Environmental Conservation
 Natural Resources Conservation Services, Monroe County
 Citizen Scientists

Estimating Loading Above and Below Agricultural Best Management Practices (BMPs) and Combined Animal Feeding Operations (CAFOs) in the Genesee River Watershed

The USGS is implementing best practices to control soil erosion and reduce the nutrients that reach the Rochester Embayment, the Genesee River and the Genesee River Watershed.

The current information available for the Genesee River and watershed is insufficient to assess if the Beneficial Use Impairment (BUI) delisting criteria for the Rochester Embayment Area of Concern (AOC) can or have been met. With on-going and future projects that are implementing best practices to control soil erosion and the reduction of nutrients that reach the Rochester Embayment, the river and the watershed, it becomes a necessity to:

1.) collect more frequent Total Suspended Sediment (TSS) data for the Genesee River both within and outside of the AOC; and 2.) to have a study design capable of evaluating the impact/success of the current and proposed GLRI projects in the watershed. This project is envisioned as a two-year pilot for the Genesee River, with potentially wider applications in the Lake Ontario basin and other Great Lake areas.
 ~EPA QAPP

The U.S. Geological Survey (USGS) in cooperation with the U.S. Environmental Protection Agency (EPA) Region 2, New York Department of Conservation (NYSDEC), Natural Resources Conservation Service (NRCS), Monroe County, and a group of Citizen Scientists is conducting an ongoing program to sample 10 locations in the Genesee River basin, including the Genesee River and in two watersheds in the basin (Oatka and Honeoye Creeks). Samples for Total

Site Selections in the Genesee River Basin in cooperation with the Great Lakes Restoration Initiative (GLRI) and the Beneficial Use Impairment Delisting Study

ID	NAME	LATITUDE	LONGITUDE		DRAINAGE	DIST. TO MOUTH
					mi ²	mi
04223000	Genesee River at Portageville, NY	423413.0	780232.0	⁸³	984	89.8
04227500	Genesee River near Mount Morris, NY	424600.0	775020.0	⁸³	1424	63
04231600	Genesee River at Ford Street Bridge, Rochester	430830.2	773658.7	⁸³	2474	9.5
04232007	Genesee River at Genesee Docks at Rochester, NY	431350.1	773659.5	⁸⁴	2490	0.7
04230380	Oatka Creek at Warsaw, NY	424439.0	780815.0	⁸³	39.1	48.9
04230400	Oatka Creek at Pearl Creek, NY	425054.0	780337.0	²⁷	78.4	34.4
04230431	Oatka Creek Upstream of Le Roy, NY	425728.5	780125.4	⁸⁴	127	22.3
04230500	Oatka Creek at Garbutt, NY	430036.0	774729.0	⁸³	200	4.2
04230055	Honeoye Creek at West Rush, NY	425842.0	774153.0	²⁷	265	2
04229500	Honeoye Creek at Honeoye Falls, NY	425726.0	773520.0	⁸³	196	15.3

Figure 1. (mi²--square miles; NA--not available; ²⁷--NAD27; ⁸⁴--WGS 84; ⁸³--NAD 1983)

Suspended Solids (TSS), turbidity, Total Phosphorus (TP), Soluble Reactive Phosphorous (SRP), along with a habitat assessment are being collected at the following sites in Figure 1. The site selection is based on the existing USGS gage network and NRCS Environmental Quality Incentive Program (EQIP) sites that were designed for agricultural producers actively using their lands for agricultural production and aims to utilize those EQIP sites that are within reasonable proximity of existing USGS gaging stations. The sampling locations are both within the Rochester AOC as well as outside of it, to allow an effective assessment of sources for the

BUI evaluation within up-stream watersheds. The preliminary results will be reviewed after six months, to one year, after the start of the project and site selections adjusted if necessary. A full analysis and justification will be provided to all project partners; any modifications after the 2-year pilot will be based on a consensus opinion and captured in a revision of the Quality Assurance Project Plan (QAPP).

Samples are collected monthly and annually during at least three high-flow events. High-flow is determined by a rise in the hydrograph of more than 40 percent above baseflow and has been established at each of the 10 sites. NYSDEC Region 9 field personnel and trained volunteers will collect a sample for TSS, turbidity, TP and

Dissolved Orthophosphate (Soluble Reactive Phosphorus, SRP). Samples will be shipped to a NYSDEC designated contract laboratory for analysis. Volunteers will also perform a habitat assessment. The USGS is conducting training of all participants using methods designed by the USGS. The USGS will conduct follow-up or re-training as needed if the study continues from the pilot stage. Additionally, the USGS is collecting quarterly side-by-side water-quality samples with DEC personnel and volunteers as part of the quality-assurance protocol.

The laboratory manages data internally according to laboratory's compliance with the requirements of the NYSDEC ASP/PAP. Data can be downloaded at the STORET Data Warehouse which features Watershed summaries and the MyWATERS Mapper for water quality assessments.

- Data can be accessed at <http://www.epa.gov/STORET/dbtop.html>

Genesee River Upper Falls, Letchworth State Park, NY



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For Additional Information

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