



# Owasco Lake Watershed Inspection and Protection Division

## *2021 Annual Report*

### Our Mission:

To make regular thorough inspections of Owasco Lake, its watercourses, and its watershed to identify compliance with the Rules and Regulations set forth for the Owasco Lake Watershed and to provide educational outreach within the watershed community that supports environmental awareness and lake stewardship.

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The OLWIPD utilizes an Unmanned Aerial Vehicle (UAV) to capture a view of Owasco Lake, looking north from the mouth of the Owasco Inlet.



## OWASCO LAKE WATERSHED MANAGEMENT COUNCIL 2021 SUMMARY

The glacial Finger Lakes are typically known for pristine water quality conditions, yet over the last decade the City of Auburn and Town of Owasco have experienced water quality challenges stemming from the presence of harmful blue-green algae blooms (HABs) on Owasco Lake which serves as a principle water supply for the region. The challenges and costs of treating surface water as a drinking water supply, and the degradation of water quality that poses threats to lake recreation and the local economy, have led to the advancement of water quality protection and restoration efforts locally. The inter-municipal Owasco Lake Watershed Management Council (OLWMC) has advanced as a central hub for coordinating watershed protection and restoration efforts through: (1) organizational, personnel, educational, and outreach capacity building; (2) increased revenue generation; and (3) the implementation of new watershed monitoring technologies and equipment. It is the OLWMC's Vision that collective municipal representation watershed-wide will advance the Council's position to coordinate and prioritize water quality protection efforts and watershed improvement projects. This Vision is being met through improved communication with watershed municipalities and the associated provision of services, programming, and education and outreach materials that promote conservation efforts at watershed scale.

Through the 2021 calendar year, the OLWMC has played an active role supporting the advancement of both the Community Consensus Watershed Rules and Regulations (WRR) update project that recommends a new set of WRR to enhance and better define local requirements relative to current WRR, and the 9E Watershed Plan that will serve to guide stakeholder interest, prioritize watershed improvement projects, and ultimately act as a pathway for New York State (NYS) project funding for the Council and its partners. In 2021, the Emerson Foundation committed a grant award for \$16,000 to meet commitments from both the French and Metcalf Foundations (\$5,000, respectively) to cover the cost of a new hybrid-electric inspection vehicle for the Owasco Lake Watershed Inspection and Protection Division (OLWIPD), building capacity for the needs of the OLWIPD to conduct watershed surveillance activities to implement WRR. Recent collaboration among Finger Lakes regional watershed partners and Wegmans Food Markets promoted LED flare sales to limit the adverse pollution and safety impacts of conventional incendiary flares. The OLWMC's highly endorsed Lake Friendly Living pledge campaign piggybacks on a growing Finger Lakes regional effort and encourages increased awareness and buy-in for recommended land use conservation practices within the Owasco Lake watershed. Associated program signage was, and will continue to be, installed throughout the watershed. Further, the OLWMC spearheaded a NYS Assembly commemorative resolution to endorse LFL awareness throughout the region. Over the last couple of years, OLWMC staff have published semi-monthly recognition articles via the Citizen newspaper, spotlighting watershed residents voluntarily making strides in land use conservation. The OLWMC's robust website ([www.OLWMC.org](http://www.OLWMC.org)) includes these published recognition articles, the LFL program pledge, and invaluable reference materials. The OLWMC's ongoing Hyfi® project targets tributary level sensor installations and data collection within the watershed to better inform managers and the public about dynamic stream flow conditions. Discrete community projects in 2021 included the installation of a riparian buffer on a local farm along Veness Brook in the spring and a raingarden at Emerson Park in the fall. Additionally, OLWMC staff worked closely with Camp Y Owasco on HABs identification training and utilizing the OLWMC's educational watershed model for camp youth curriculum development.

The OLWMC welcomes the voice of new municipal Directors and is committed to engaging remaining municipalities that have yet to join. The Town of Dryden resolved to join the OLWMC in 2022, and the OLWMC board welcomes their interest and involvement. Water purveyors, the City of Auburn and the Town of Owasco, are the primary source of annual revenue to the OLWMC. For 2022, the City of Auburn maintained its annual contribution of \$200,000, yet added an additional \$10,000 commitment to meet a funding match requirement for a Great Lakes grant that will support conservation enhancements on a watershed farm. The Town of Owasco increased annual funding contributions by \$2,000 to \$29,000. Both water purveyors and watershed municipalities acknowledge the sense of urgency in the community for clean and safe lake water resource and recognize the need for funding the OLWMC's valuable work. The Towns of Fleming and Niles contribute \$7,000 and \$2,000, respectively, and the Town of Scipio now commits \$3,000. Funding from the Towns of Moravia and Sennett, and the Village of Moravia amount to \$2,000, \$2,500, and \$2,000, respectively. The OLWMC is now well-positioned to target grants that can fund Council objectives and associated project initiatives. Recently, a local partnership-based proposal seeks to help fund farm planning efforts throughout the watershed. The OLWMC is looking forward to continuing to build relationships throughout the watershed and will continue to strive towards advancing watershed protection and restoration efforts to protect Owasco Lake as a cornerstone to the community.

Sincerely,



**Adam Effler, PhD, Executive Director**



**Ed Wagner, Chair**

## Lake and Watershed Status

In 2021, widespread and severe meteorological events within the Owasco Lake watershed affected highly erodible soils. Heavy rainfall events, which occurred throughout the year, were more detrimental to watercourses and the landscape than in previous years. According to the National Weather Service, the Owasco Lake watershed received 8 to 16 inches of precipitation above normal levels for 2021. Many residents reported that the resulting floods were of similar magnitude to Hurricane Agnes of 1972. Visual observations of streambank erosion, sediment deposition, and sediment transport were made throughout the watershed. The southern portion of the watershed demonstrated high vulnerability to erosion and flooding, illustrating the need for long-term flood resiliency and community protections to meet the challenges of increasingly extreme local weather patterns. The watershed community responded promptly to these rainfall events through emergency permitting and expedited repairs, which minimized further impacts to Owasco Lake. Despite the wet year, the agricultural community installed thousands of acres of cover crops before the winter of 2021, displaying an exceptional effort towards reducing the impacts of soil and nutrient migration to local waterways.



Winter view of Owasco Lake looking to the west, Town of Owasco, New York.

## 2021 Inspection Summary

The Owasco Lake Watershed Inspection and Protection Division's surveillance of the watershed was largely uninterrupted by the COVID-19 pandemic. To meet the objective of implementing the Watershed Rules and Regulations, and to ensure protective measures were utilized to minimize stormwater runoff, monitoring efforts focused on streams, roadside ditches, steep slope disturbances, construction sites, residential septic systems, and commercial and agricultural operations.

Throughout 2021, the Inspection Division responded to water quality threats, participated in community engagement programs, and documented the occurrence of cyanobacterial blooms. Surveillance efforts of activities and conditions which could negatively impact water quality resulted in 109 site visits, identifying 8 violations. Regulatory implementation by the Inspection Division alongside enforcement assistance from county, state, and federal agencies resulted in prompt implementation of corrective actions by landowners, resulting in 100 percent compliance.



Shoreline damage following a heavy rainfall event looking to the north, Town of Scipio, New York.



## 2021 WATERSHED INSPECTION HIGHLIGHTS

### Severe Erosion / Infrastructure

Erosion was a significant issue in 2021 due to high velocity runoff from extreme rain events. Several culverts failed, and local agencies are still working to repair damage to steep slopes, ravines, and ditches.

<u>Watershed Feature</u>	<u># of Occurrences</u>
Streambank Erosion	15
Shoreline Stabilization	3
<i>Total Sites Inspected</i>	<i>18</i>



Erosive effects following an intense storm event in Scipio, New York.

### Agricultural Concerns

Landowners within the watershed implemented conservation measures to minimize nutrient and sediment loss. Thousands of acres of cover crops were planted, despite challenges with wet weather.

<u>Land Use Concern</u>	<u># of Occurrences</u>
Animal Access to Stream	1
Compost Pile Locations	1
Field Erosion	1
Manure Applications	5
<i>Total Sites Inspected</i>	<i>8</i>

*\*Site Violations: 0*



Cover crops in November on Rt. 38a, Town of Owasco, New York.

### Stormwater / Construction Activities

<u>Municipality</u>	<u># of Occurrences</u>
Owasco	14 (1- Federal)
Niles	5
Fleming	9 (1- DEC stormwater)*
Skaneateles	4
Moravia	4
Scipio	9 (1- DEC stormwater)*
Groton	2
Sempronius	1
Venice	1
<i>Total Sites Inspected</i>	<i>49</i>

*\*Site Violations: 3*



Commercial construction project in Moravia, New York.



## 2021 WATERSHED INSPECTION HIGHLIGHTS

### Miscellaneous Inspections

<u>Watershed Concern</u>	<u># of Occurrences</u>
Logging & Land Clearing Activities	10
Septic Systems	9 (1)*
Streambank & Shoreline Disturbance	8
Beaver Dam Activity	5
Animal Disposals	3
Hazardous Material Spill	2
Mean High Water Level Check	11 (3)*
Wetland Issue	2
Water Control Inspection	Multiple
Household Refuse	4 (1)*
Hyfi Sensor Installation & Replacement	Multiple
<i>Total Site Inspections</i>	<i>54</i>

*\*Site Violations: 2 (Cayuga County Health Department), 3 (NYSDEC)*



### Projects of 2021

Inspection Division staff installed new tributary water level sensors throughout the Owasco Lake watershed, provided by a Michigan-based organization, Hyfi. The sensors are located at Dutch Hollow Brook, the Owasco Flats, the Owasco Inlet, Veness Brook, and Sucker Brook.

Hyfi sensors can be used to alert residents of stream conditions in real time, serving as a warning for flood events. The sensors also assist with quantifying streamflow and estimating nutrient loading when coupled with water quality sampling and cross-sectional stream surveys. The live data produced by these sensors can be found on the Owasco Lake Watershed Management Council's website. In 2021, Hyfi sensors increased the OLWIPD's capacity to monitor and assess stream conditions, particularly during storm events; watercourse elevation data collected during periods of high flow informed the community, partners, and the OLWIPD of the conditions that contributed to severe erosion and flooding.



Hyfi sensor installation at an Owasco Flats Sediment Retention Basin in Moravia, New York.



# Watershed Inspections

## Category      Symbol

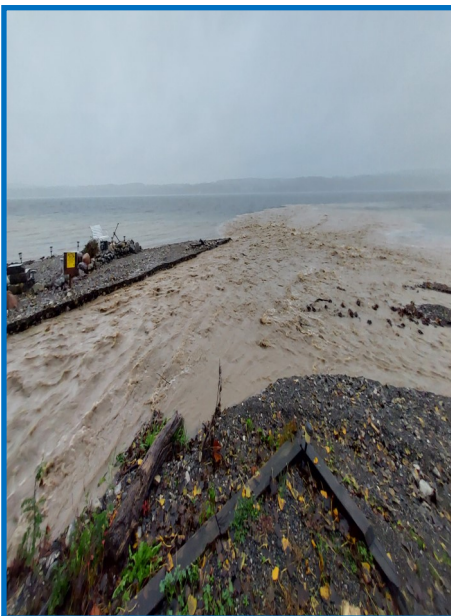
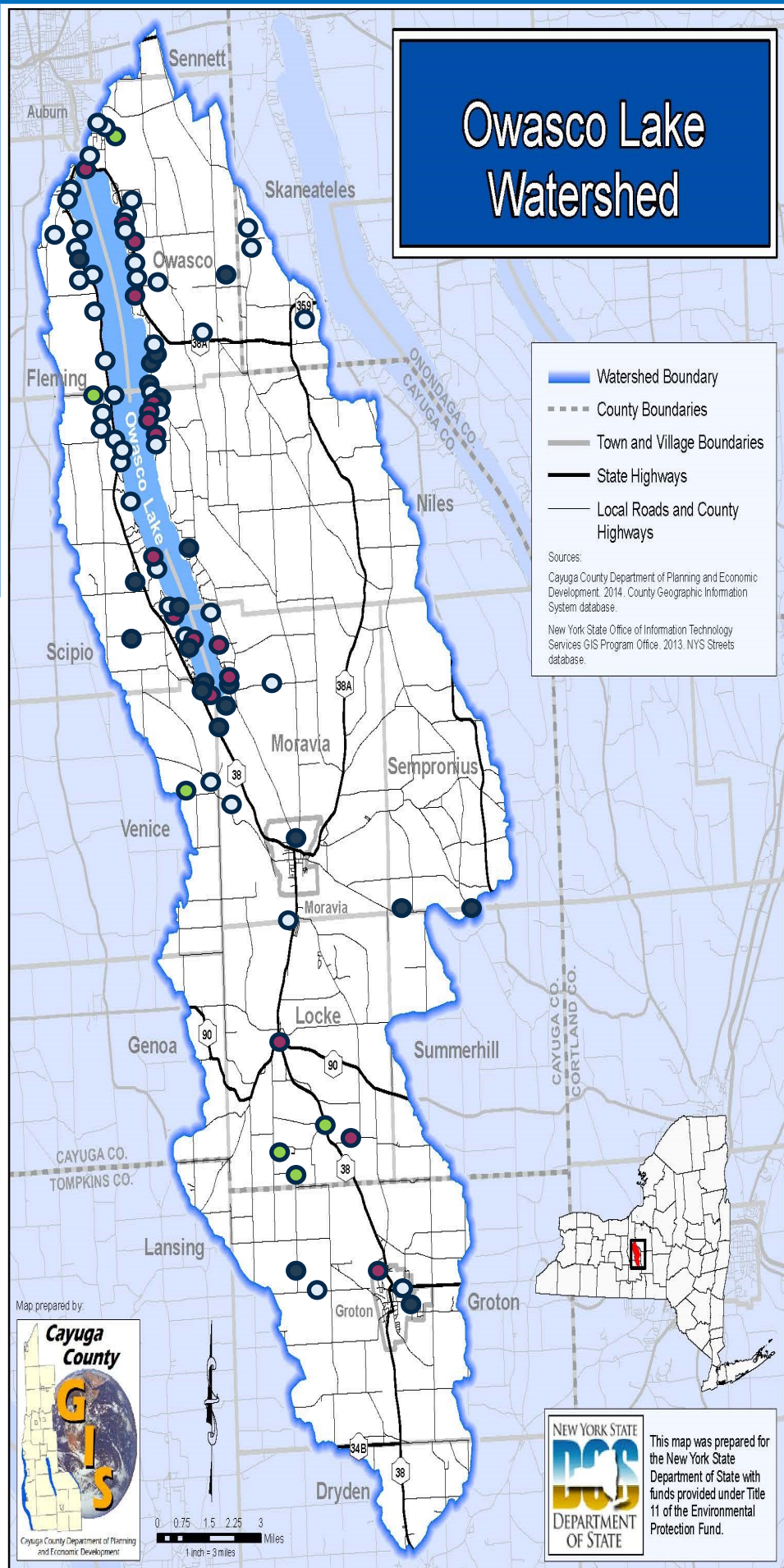
Infrastructure:      ●

Construction /  
Stormwater Sites:      ○

Agricultural Issues:      ●

Miscellaneous:      ●

# Owasco Lake Watershed



### Plunkett Point Tributary (above).

The October 26th storm created numerous sediment plumes in Owasco Lake, and severely eroded shorelines and streambanks. Many homeowners and businesses were flooded, which resulted in emergency permits to repair and stabilize eroded properties.



## STAFF UPDATES AND CONTACT INFORMATION

### Staff Update

In June of 2021, Alexandria (Ally) Berry replaced the role of Andrew (Drew) Snell as Lead Watershed Inspector. As a local resident and SUNY-ESF graduate, Ally is extensively familiar with the challenges the watershed community faces. Ally's background experience and passion for the local area make her well-equipped to address a variety of water quality concerns within the Owasco Lake watershed. She actively engages and collaborates with residents, producers, and partner organizations to elevate the Inspection Division and drive its mission.

The OLWIPD also welcomes Jillian Aluisio, Watershed Inspector, who started her role in January of 2022. Jillian is also a SUNY-ESF graduate with a background in environmental and watershed science. Jillian is looking forward to utilizing her educational and professional background to assist the OLWIPD with identifying and addressing watershed-sourced pollution that can impact the lake as a drinking water resource.



Lead Watershed Inspector participating in Asian Clam sampling with Cayuga County WQMA.  
Photo: Michele Wunderlich, Associate Planner at CC Planning and Economic Development.



Watershed Inspector displaying riprap that will be used to stabilize an eroded streambank in Scipio, New York.

### Outlooks for 2022

The most essential priority of the OLWIPD is to make regular and thorough inspections of Owasco Lake and all watercourses to ascertain compliance with the Owasco Lake Watershed Rules and Regulations. The OLWIPD plans to increase surveillance of the southern portion of the watershed, as the storms of 2021 revealed areas near Hemlock Creek and the Owasco Inlet that continue to display vulnerability to flooding. The OLWIPD recognizes that these areas may require additional surveillance to minimize and mitigate the erosive effects of intense storms, as weather patterns become more extreme, .

The OLWIPD will continue to advance education for, and outreach to, the watershed community to foster lake stewardship. Furthermore, OLWIPD will resume Harmful Algal Bloom (HAB) monitoring throughout the summer and fall and additionally assist with ongoing tributary sampling throughout the watershed.

### Staff Contact Information

#### **Alexandria (Ally) Berry**

*Lead Watershed Inspector*

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Phone | Text: (315) 427-5188

#### **Jillian Aluisio**

*Watershed Inspector*

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## USEFUL FACTS AND INFORMATION

**I**f you suspect a watershed impact affecting Owasco Lake or its tributaries, please contact us ASAP! *All reports received will remain anonymous!*

To report an algae bloom on Owasco Lake, please call 315-427-5188, or visit: [www.owascoinspection.org](http://www.owascoinspection.org) for anonymous reporting.

### *Important Reminders*

- To avoid disruption of trout spawning, in-stream work should be avoided to the greatest extent practicable from: **November 1 - June 15.**
- Shoreline Construction Mean High Water Level: **713.9'**
- NYS Lake Classification for Owasco Lake: **AA—source for drinking water**
- Stream Classifications: The watershed has protected streams that may require permitting.
- Before performing any shoreline or streambank construction, make certain state and federal permits are in place.
- Site-specific erosion and sediment control materials should be deployed prior to excavation activities.

### Owasco Lake Watershed Facts and Figures

<b>Drainage Area</b>	208 square miles
<b>Counties within the watershed</b>	3—Cayuga, Onondaga, & Tompkins
<b>Townships within the watershed</b>	14—Owasco, Fleming, Groton, Scipio, Venice, Skaneateles, Moravia, Sempronius, Locke, Genoa, Lansing, Niles, Summerhill, Dryden, Sennett
<b>Maximum Lake Depth</b>	~177 feet
<b>Lake Length</b>	11 miles
<b>Lake Average Width</b>	1.2 miles
<b>Finger Lakes Rank</b>	6th Largest
<b>Number of Residents Consuming Owasco Lake Waters</b>	~45,000 people
<b>Land to Lake Ratio</b>	20:1 (Largest of the Finger Lakes)
<b>Average Volume of Water in Owasco Lake</b>	260 billion gallons

### Directors of the Owasco Lake Watershed Management Council

**Town of Owasco:** Ed Wagner, **Cayuga County:** Aileen McNabb –Coleman, **City of Auburn:** Ginny Kent, **Town of Niles:** Joan Jayne, **Town of Locke:** Thane Benson, **Town of Fleming:** Don Oltz, **Town of Moravia:** Terry Baxter, **Village of Moravia:** Gary Mulvaney, **Village of Groton:** Nancy Niswender, **Town of Summerhill:** Charlie Ripley, **Town of Sennett:** Thomas Blair, **Town of Scipio:** Melinda Pitman, **Town of Dryden:** Anne Clarke

*Vacant Municipal Town Seats: Groton, Venice, Skaneateles, Lansing, Sempronius, and Genoa*

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#### **NEW LOCATION**

Our new mailing address is:

**6073 West Lake Road  
Auburn, NY 13021**

#### Owasco Lake Watershed Inspection Committee Members

Ms. Ginny Kent, Councilor, City of Auburn  
 Mr. Ed Wagner, Supervisor, Town of Owasco  
 Ms. Aileen McNabb-Coleman, County Legislative Representative  
 Mr. Seth Jensen, P.E., Director of Municipal Utilities, City of Auburn