



2022 Annual Report

Owasco Lake Watershed Inspection and Protection Division

Our Mission:

To make regular and thorough inspections of Owasco Lake, its watercourses, and its watershed; to identify and promote compliance with the Watershed Rules and Regulations set forth in New York State Public Health Law; and to provide educational outreach within the watershed community that promotes environmental awareness and lake stewardship.

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OWASCO LAKE WATERSHED MANAGEMENT COUNCIL: EXECUTIVE DIRECTOR'S SUMMARY

Owasco Lake is part of the Great Lakes Basin in the Finger Lakes region of New York. Its watershed encompasses 208 square miles across three counties. Owasco Lake is an oligo-mesotrophic lake classified by the NYS Department of Environmental Conservation (NYSDEC) as a Class AA (TS) waterbody suitable for drinking water supply, trout spawning, fishing, and recreation. Owasco Lake and its watershed have been monitored for over two decades by researchers and partners of the Owasco Lake Watershed Management Council (OLWMC) to track water quality and investigate impacts to the lake's water quality. Owasco Lake is one of the 12 "priority" lakes in New York impacted by Harmful Algal Blooms (HABs) (NYSDEC, 2019 HAB Action Plan Owasco Lake). Recent data suggests that the lake's conditions are deteriorating, with nutrient loading and climate variability as leading attributed causes.

Advancements in water quality protection have been made in response to the challenges and costs associated with treating surface waters for drinking water purposes, the general degradation of lake water quality, and associated threats to lake recreation and the local economy. The OLWMC coordinates watershed protection and restoration efforts through: (1) oversight of the OLWIPD towards watershed regulatory compliance; (2) providing a platform for communication and collaboration among partners; (3) increasing municipal participation and revenue generation; and (4) watershed protection project coordination activities. The OLWMC's educational public services, including Lake Friendly Living pledge programming and the distribution of outreach materials, promote conservation efforts at watershed-scale. Recently, a partnership with the Cayuga County Soil and Water Conservation District resulted in a successful installation of three Water and Sediment Control Basins (WASCOBs) on a farm in the Veness Brook sub-watershed.

The OLWMC and the OLWIPD play an active role in the advancement of the Watershed Rules and Regulations (WRR) update project that is now under review by NYS Department of Health. The update is intended to enhance and better define local requirements relative to current WRR. Furthermore, the OLWMC was involved with the development of the Owasco Lake Watershed Nine Element Plan for Phosphorus Reduction (9E) that guides stakeholder interests, prioritizes watershed improvement projects, and will act as a pathway for NYS project funding for the OLWMC and its partners. NYS approved of Owasco Lake's 9E in September 2022, making Owasco Lake the first of the Finger Lakes to complete the NYS watershed planning exercise. Subsequently, the OLWMC resolved (Resolution 03-2022) to create the 9E Project Coordination Committee, unifying partnering organizations and agencies that will develop project proposals and associated NYS funding requests according to the recommendations of the approved plan.

The OLWMC recently advanced its partnership with The Nature Conservancy (TNC). The Council negotiated a land transfer deal with TNC, establishing the Fillmore Nature Preserve in Sempronius and Summerhill. The OLWMC closed on the 161-acre property on January 10th, 2023, and was awarded a \$15,000 land stewardship grant by TNC. The transfer of this property is a testament to the strong partnership between the OLWMC and TNC, and supports both organization's mutual goals of land preservation and stewardship. Protecting ecosystem services for the benefit of water quality expands upon the OLWMC's public service initiatives, while simultaneously securing an asset that builds organizational resiliency. The Fillmore Nature Preserve's trails are open for respectful public use, but hunting is not permitted. The OLWMC's Lake Friendly Living (LFL) pledge campaign is a part of a growing regional Finger Lakes effort that promotes awareness of, and commitments to, recommended conservation practices within the Owasco Lake watershed. In 2022, the OLWMC successfully spearheaded a NYS Assembly resolution commemorating LFL awareness throughout the region. During our spring LFL event, volunteers established a shrub willow nursery in the Town of Owasco which will provide a local source of riparian vegetation for future stream restoration and resiliency projects.

The OLWMC welcomes the voice of new municipal Directors and is committed to engaging with the remaining watershed municipalities that have yet to join. The Town of Dryden resolved to join the Council in 2022, and the OLWMC welcomes their interest and involvement. Water purveyors, the City of Auburn, and the Town of Owasco are the primary source of annual funding to the OLWMC. For 2023, the City of Auburn increased its annual commitment to \$216,000, while the Town of Owasco increased its annual commitment to \$30,000. The Town of Niles increased its commitment to \$2,500. The Towns of Fleming, Scipio, Sennett, Moravia, and the Village of Moravia maintained their commitments at \$7,000, \$3,000, \$2,500, \$2,000, and \$2,000, respectively. Dryden, along with its new Directorship role, initiated a \$200 commitment for 2023. The Town of Genoa also initiated a \$200 commitment for 2022 and 2023. These municipalities acknowledge the sense of urgency in the community for protecting Owasco Lake, and the need for funding the OLWMC's valuable work.

Over the last several years, OLWMC and OLWIPD staff have continued to publish monthly recognition articles in the Auburn Citizen, spotlighting watershed residents and local partners voluntarily making strides towards watershed conservation. The OLWMC's website (www.olwmc.org) provides links to these articles, as well as to the LFL program pledge and valuable educational materials. The OLWMC is looking forward to continuing to build relationships throughout the watershed community 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

While the watershed community continues to recover from destructive weather that occurred in 2021, precipitation events were somewhat less impactful to the landscape in 2022. According to the National Weather Service, the Owasco Lake watershed received less precipitation than usual in the northern portion of the basin, and more than usual in the southern portion of the basin. This led to observed reductions in sediment transport from highly erodible soils, steep slopes, and unstable streambanks. Nevertheless, streambank erosion and sediment plumes in Owasco Lake were observed throughout the watershed following precipitation events, especially in the southern drainage area of the basin (i.e. Owasco Inlet sub-watershed), where precipitation levels were 4 inches above average for the year. These observations reveal the continued need for flood resiliency planning in communities such as Moravia and Locke, where floodwater conveyance remains problematic.

Local water sampling efforts in 2022 have shown that microcystin, the toxin associated with Harmful Algal Blooms (HABs), has been increasing exponentially in recent years. This highlights the importance of monitoring the landscape for streambank erosion, exposed ditches, and other pathways of nutrient and sediment transport, especially as destructive weather patterns become more common. According to the 2022 Lake Water Quality Monitoring Report, produced by Dr. John Halfman of the Finger Lakes Institute, lake temperatures are increasing, and oxygen is being depleted in deeper waters. These effects can alter lake chemistry, extend the duration of lake stratification, and lead to increases in internal nutrient loading. Long term water quality monitoring is required to further assess how the relationships between increasing water temperatures and oxygen depletion may be impacting lake productivity and the presence of HABs in Owasco Lake.



Severe streambank erosion on the Owasco Inlet.

2022 Inspection Summary

In 2022, the Owasco Lake Watershed Inspection and Protection Division (OLWIPD) continued its watershed-wide monitoring through close observation of the landscape, anonymous reporting, and by working closely with partner agencies. Watershed Inspectors identified areas that were impacted by severe weather, and are continually working to resolve concerns related to sediment and nutrient loading.

Staff identified **128 sites** in 2022 that may adversely impact water quality. The OLWIPD addressed locations in the watershed with potential or ongoing water quality concerns, and performed numerous follow-up visits to document compliance. Inspections included stormwater checks of construction sites, thorough reviews of agricultural land-use, and assessments of stabilization issues such as streambank erosion, as well as a variety of other issues. Watershed Inspectors identified **14 violations** of watershed, state, and/or federal regulations in 2022. Violations were primarily resolved through voluntary compliance, and one violation related to residential construction was elevated to a Cayuga County Department of Health hearing for resolution. The OLWIPD routinely maintains high levels of voluntary compliance by providing timely notifications of potential violations to partner agencies, and through ongoing engagement with landowners. The OLWIPD continues to encourage landowners to implement conservation practices that elevate watershed stewardship, and recognizes those who have demonstrated a commitment to watershed protection through voluntary practice adoption and involvement with Finger Lakes Lake Friendly Living Program initiatives.



A wintry view of waterfowl enjoying Owasco Lake.

2022 WATERSHED INSPECTION HIGHLIGHTS

Severe Erosion / Stabilization Efforts

Efforts which were made to resolve erosion issues, resulting from high velocity stormwater runoff, or from man-made changes to natural drainage systems.

<u>Watershed Feature</u>	<u>No. of Occurrences</u>
Culvert Failures and Replacements	6
Shoreline Stabilization	2
Streambank Stabilization	10
Road Ditch Disturbances	Several Miles
<i>Total Sites Inspected</i>	18



OLWIPD and Tompkins County Soil and Water Conservation District staff identifying severe erosion in a roadside ditch.

Agricultural Operations

Producers implemented numerous conservation practices across the watershed to improve water quality and soil health. Thousands of acres of cover crops were planted to reduce topsoil loss.

<u>Land Use Concern</u>	<u>No. of Occurrences</u>
Manure Spills	1 (1*)
Field Drainage	4
Field Erosion	1
Manure Applications	2
<i>Total Sites Inspected</i>	8

**Site Violations: 1—NYSDEC*



Installation of a water and sediment control basin (WASCoB), a conservation practice designed to reduce erosion, trap sediment, and manage runoff; agricultural field in the Veness Brook sub watershed, Town of Fleming.

Stormwater / Construction Activities

Ground-disturbing activities were primarily residential construction projects.

<u>Municipality</u>	<u>No. of Occurrences</u>
Owasco	26 (1*)
Niles	6 (1*)
Fleming	11
Skaneateles	3
Moravia (Village and Town)	4
Scipio	14 (1*)
Groton (Village and Town)	3
Venice	1
<i>Total Sites Inspected</i>	68

**Site Violations: 3—NYSDEC*



Watershed Inspector Jillian Aluisio assessing water quality risks at a residential construction site in the Town of Owasco.

2022 WATERSHED INSPECTION HIGHLIGHTS

Miscellaneous Inspections

Uncategorized water quality concerns that have been anonymously reported or identified by the OLWIPD.

Watershed Concern	No. of Occurrences
Logging & Land Clearing Activities	10 (1*)
Septic and Wastewater Concerns	10 (3*)
Streambank & Shoreline Disturbance	3 (2*)
Beaver Dam Activity	Multiple
Municipal Wastewater Overflow	1 (1*)
Hazardous Material Spills	3 (1*)
Mean High Water Level Checks	4 (4*)
Mining Concerns	1
Household Refuse and Debris	2
Hyfi Sensor Maintenance	Multiple
Total Site Inspections	34

**Site Violations: 1—Federal; 3—CCDOH; 8—NYSDEC*



An accidental engine fire on a boat in the Town of Fleming resulted in a visit from NYSDEC Spills Response. Inspectors monitored the clean up.

2022 Projects and Developments

The state-level review of the updated Watershed Rules and Regulations is underway, and Lead Watershed Inspector, Ally Berry, has been representing the OLWIPD since June, providing insights to the technical review committee regarding watershed protection needs and challenges.

In May, the OLWMC and OLWIPD held a willow planting event to create a shrub willow nursery in the Town of Owasco. Volunteers assisted with planting 462 willow canes. This project was facilitated by the OLWIPD's close working relationship with SUNY ESF faculty. The willow canes, donated by the College's Woody Willow Biomass project, are intended to serve as a source of vegetative material for future riparian buffers and other streambank stabilization efforts within the Owasco Lake watershed.

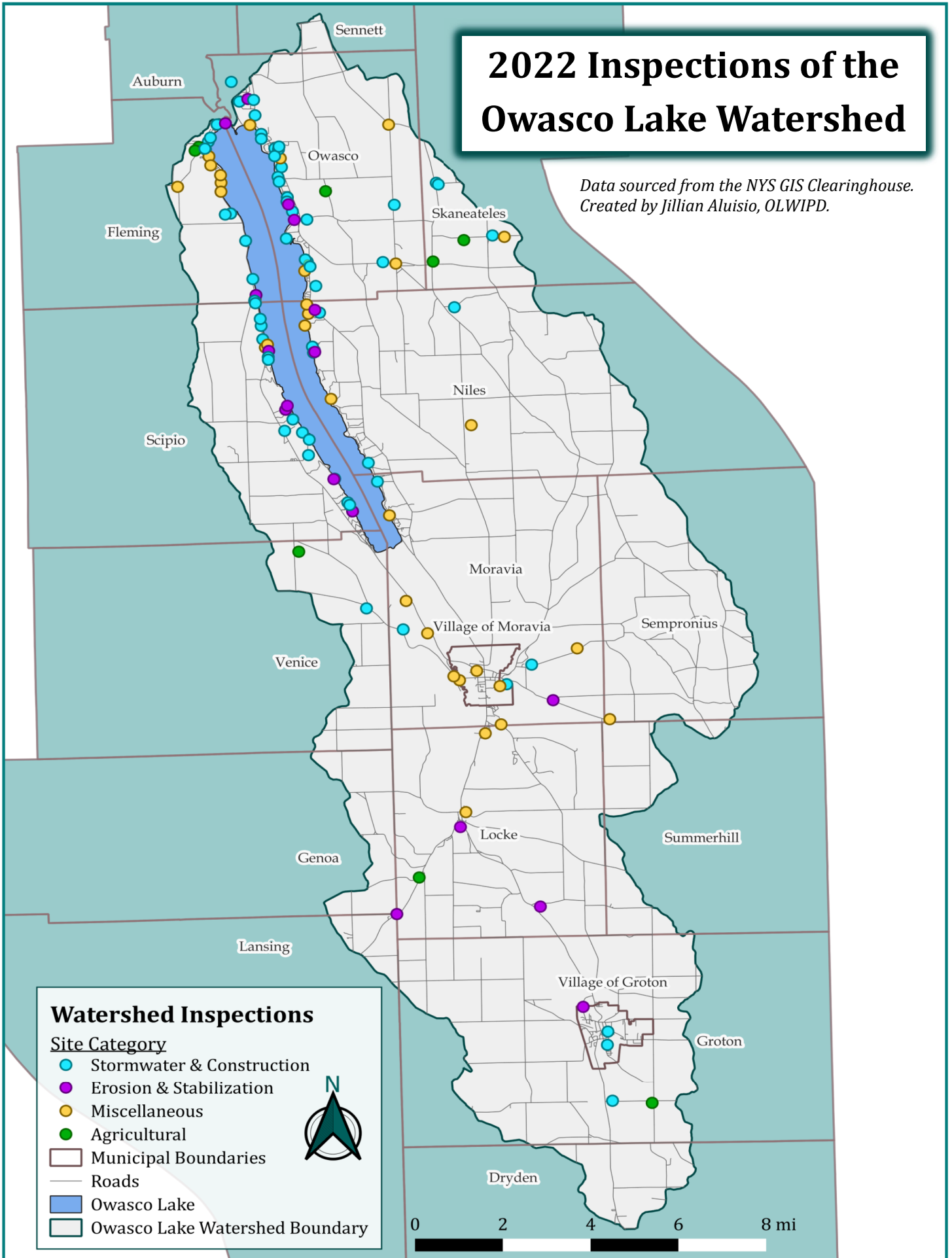
Inspectors audited the Cayuga County Department of Health's septic system inspector course and completed the NYSDEC 4-hour Erosion and Sediment Control Course through the Cayuga County Soil and Water Conservation District. These training opportunities will serve to improve the efficacy of septic inspections and improve outcomes of stormwater inspections throughout the watershed. The OLWIPD also attended several workshops to gain more knowledge about best management practices for agriculture and stormwater, as well as streambank stabilization techniques. The OLWIPD additionally assisted partners with educational events, bi-monthly tributary sampling, rain garden maintenance, and calculating shrub willow survival at the DuMond Farm along Veness Brook. Throughout the summer of 2022, Inspectors aided The Nature Conservancy in sampling a new type of septic system at Camp Y-Owasco that targets phosphorus reduction. The OLWIPD also assisted with plant mortality surveys in the Owasco Flats, and managed HyFi tributary water level sensor installations.



Jason Cuddeback, Certified Crop Advisor and Grazing Specialist with the Cayuga County Soil and Water Conservation District, discusses agricultural BMP implementation with Lead Watershed Inspector, Ally Berry.

2022 Inspections of the Owasco Lake Watershed

Data sourced from the NYS GIS Clearinghouse.
Created by Jillian Aluisio, OLWIPD.



Watershed Inspections

Site Category

- Stormwater & Construction
- Erosion & Stabilization
- Miscellaneous
- Agricultural

Municipal Boundaries

Roads

Owasco Lake

Owasco Lake Watershed Boundary



0 2 4 6 8 mi

Outlooks for 2023

The OLWIPD will continue to monitor the watershed to identify potential or ongoing water quality concerns from all land uses. The OLWIPD plans to further assess the impacts of in-stream erosion, with a priority focus along the Owasco Inlet. In recent years, based on the 30-year climate average, precipitation events in the southern portion of the watershed have been increasingly severe. Assessing streambank erosion will be an important consideration for future climate and flood resiliency planning, as climate change continues to threaten low-lying areas, such as Moravia and Locke.

In 2023, the OLWIPD will further build upon relationships with partner organizations, support conservation projects that could serve to improve the health of the watershed, and attend professional development opportunities. Watershed Inspectors attended a portion of the 2023 Water Quality Symposium, organized by the NYS Conservation District Employees' Association, and plan to have greater participation in 2024.

From September 19th-20th, 2023, Watershed Inspectors will participate in the Conservation Field Days, an educational event for sixth graders, co-sponsored by the Cayuga County Soil and Water Conservation District, which will be held at Emerson Park in Auburn, NY. Inspectors will educate local youth on watershed dynamics and common water quality concerns to spark inspiration for the next generation of watershed stewards. On March 8, 2023, the OLWIPD performed the first inspection of the 161 acre Fillmore Nature Preserve, a recently acquired OLWMC property that is now publicly accessible. Annual inspections of the property will include the identification of management issues, such as invasive species presence, prohibited hunting, and ownership challenges, such as property line encroachment. Watershed Inspectors will also be responsible for producing an annual property inspection report for the OLWMC.

The updated Watershed Rules and Regulations, if passed, will provide new challenges to the community and the OLWIPD. The newly adopted 9 Element Plan recommends an expansion of inspection staff and resources to accommodate for increased expectations for watershed surveillance and management.



Lead Watershed Inspector Ally Berry giving a thumbs-up after assessing streambank erosion along Sucker Brook in the Town of Owasco.

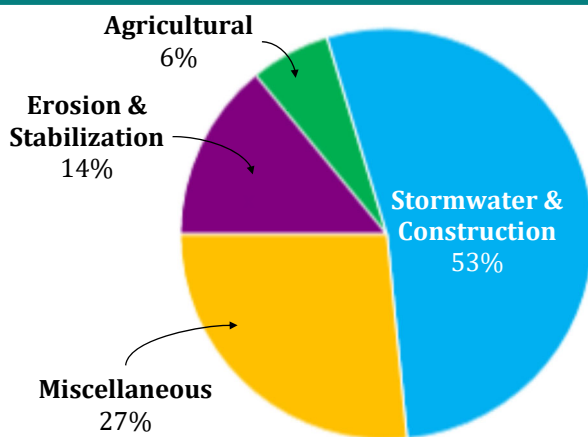


Figure 1 (left): A pie chart depicting the variety of watershed inspections conducted in 2022, by category of concern.

Staff Contact Information

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www.owascoinspection.org

Find us on Facebook and Instagram!



/OLWMC



@OLWIPD
@OLWMC

Our Location:

6073 West Lake Road
Auburn, NY 13021

USEFUL FACTS AND INFORMATION

If you see something in the watershed, which you suspect could impact Owasco Lake or its tributaries, please contact us ASAP. **All reports received are kept anonymous!**

To report an algae bloom on Owasco Lake, please call 315-427-5188.

Important Reminders

- ◆ To avoid disruption of trout spawning, in-stream work should be avoided to the greatest extent possible between **November 1 - June 15.**
- ◆ Shoreline Construction Mean High Water Level (MHWL) Elevation: **713.9'**
- ◆ Stream Classifications: The watershed has protected streams that may require permitting.
- ◆ Before performing any shoreline or streambank construction, make certain that state and federal permits are in place.
- ◆ Site-specific erosion and sediment control materials should be deployed prior to excavation activities, and need to be maintained throughout the project.

Owasco Lake Watershed Facts and Figures	
Drainage area	208 square miles
Counties within the watershed	3—Cayuga, Onondaga, & Tompkins
Municipalities within the watershed	17—Dryden, Fleming, Genoa, Groton (Town and Village), Lansing, Locke, Moravia (Town and Village), Niles, Owasco, Scipio, Sempronius, Sennett, Skaneateles, Summerhill, Venice
Maximum lake depth	177 feet
Lake length	11.1 miles
Lake maximum width	1.3 miles
Average volume	260 billion gallons
Finger Lakes rank	6 th largest
NYS Lake Classification	AA—source for drinking water
Number of people consuming Owasco Lake water	~47,000 people
Land to Lake ratio	20:1 (largest of the Finger Lakes)

Owasco Lake Watershed Inspection Committee Members

Town of Owasco: Ed Wagner, Town Supervisor, OLWMC Chair

Cayuga County: Aileen McNabb-Coleman, County Legislator, OLWMC Vice-Chair

City of Auburn:

- ◆ Ginny Kent, City Councilor
- ◆ Seth Jensen, P.E., Director of Municipal Utilities

The Watershed Inspection Committee oversees the operations of the Owasco Lake Watershed Inspection and Protection Division.

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: Karen VanLiew

Town of Moravia: Terry Baxter

Village of Moravia: Gary Mulvaney

Village of Groton: Ted Skibinski

Town of Summerhill: Charlie Ripley

Town of Sennett: Tom Blair

Town of Scipio: Melinda Pitman

Town of Dryden: Anne Clarke

Vacant Municipal Director Seats: Towns of Groton, Venice, Skaneateles, Lansing, Sempronius, and Genoa



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