

Owasco Lake HABS Monitoring and Survey Plan for 2018

(Acronyms used in this document are listed and defined on the last page)

Background

Harmful Algal Blooms (**HABS**) have occurred with increasing frequency in Owasco Lake over the past several years. The bloom season generally occurs from midsummer to early autumn. In 2016, the Owasco Watershed Lake Association (**OWLA**) began a state-wide pilot program working with the Department of Environmental Conservation (**DEC**) to monitor HABS in Owasco Lake. The situation became acute that year when low concentrations of HAB toxins were found in treated drinking water drawn from the lake. The City of Auburn and the Town of Owasco have added additional filtering systems, and in 2017 no toxins were found in the treated drinking water. This year, under the leadership of the Owasco Lake Water Quality Management Council (**OLWQMC**), we urgently need to learn as a community more about how our lake's ecosystem has become out of balance, so that we can restore our water system to best health and protect everyone who depends on the water. Continued monitoring of HABS on the lake is a vital part of that effort.

Purpose

The purpose of this monitoring and survey plan is to: (a) develop this 2018 season a coordinated notification system in partnership with other Owasco Lake water quality agencies to provide timely information and (as appropriate) a hazard warning to users of Owasco Lake waters; (b) contribute to a DEC database about the occurrence of HABS in both frequency and location and to identify, where possible, the species of cyanobacteria and how much toxin a bloom may produce. This information may be useful in educating citizens and, eventually, in mitigating future blooms on the lake.

This proposal describes a cooperative partnership between the **Owasco Watershed Lake Association (OWLA)**, the **Owasco Lake Water Quality Management Council, (OLWQMC)**, and the **New York Department of Environmental Conservation (DEC)**. The responsibilities of each organization in this partnership are described in Section I. Detailed responsibilities in this project are described in Section II.

Section I – Organizational Responsibilities

OWLA Responsibilities

1. Will recruit and together with DEC help in the training of Shore Survey Volunteers (**SSV**), whose responsibilities are described in Section II. SSV recruitment will take place during May and June through publicity to OWLA membership and others who live near the lake.
2. Will appoint 1 or 2 Owasco Lake HABS Coordinators (**OLHC**) whose responsibilities are described on page 3.
3. Will deliver samples which will be analyzed by the Upstate Freshwater Institute (**UFI**).
4. Will develop, under the supervision of OLWQMC, a reporting system for the public to utilize regarding suspicious algae blooms on Owasco Lake that will be further examined, when possible, by trained volunteers.
5. Work with the OLWQMC to publish sample test results on a regular basis.
6. Maintain communication about the program's progress with OLWQMC.

OLWQMC Responsibilities

1. Oversee the HAB Monitoring and Survey plan as it is conducted by OWLA volunteers.
2. The Owasco Lake Watershed Inspector will provide assistance with volunteer questions and with access to the Cayuga County Parks and Trails Office for weekly sample collection and processing.
3. Provide insurance protection for OWLA volunteers as they perform their duties.
4. Provide resources and support to establish the public reporting system, oversee it and assist in disseminating important information taken by the system, in consultation with the DEC, to the appropriate agencies and channels.
5. Work with OWLA to publish sample test results on a regular basis.

DEC Responsibilities

1. Provide sampling supplies and sampling instructions to the OLHC and SSVs. Provide Shoreline Survey Form (**SSF**) (attached) for weekly reports by SSV. Forms will be “tailored” for each SSV by the DEC.
2. A total of 43 sampling kits are estimated to be required; 1 each for 23 volunteers distributed at the training sessions and 20 held in reserve by the OLHC to replace those used.
3. Lead two public training sessions providing background information, pilot study results, and sampling instructions.
4. Work directly with the OLHC and SSVs to interpret digital images and other field information to determine if blooms should be characterized as “suspicious” and/or if samples should be collected or sent.
5. Work directly with the OLHC and other partners to interpret lab reports (blue green algae analyses, microscopy, and toxin results) to determine if blooms can be characterized as “confirmed” or “confirmed with high toxins,” and if additional or follow up sampling is warranted.
6. Inform through email OLHCs, and others on the DEC e-mail contact list for Cayuga County, about surveillance and sampling results from this program.
7. Include Owasco Lake surveillance and sampling results in the DEC HAB Notification system, updated every Friday from May through October, and assist as appropriate with any additional outreach initiated at the state and local level.

Section II– Detailed Responsibilities

Shore Survey Volunteers (SSVs)

OWLA will recruit and arrange DEC training of approximately two dozen volunteers. The approximate shoreline of Owasco Lake is: Average length and width: 11 miles x 1 miles = 22 miles of shoreline. Zones will be spaced regularly where possible, given topography and other access challenges. It is also noted that blooms tend to occur on the north end of the lake, especially on the eastern side.

SSV Responsibilities

1. Each SSV will be assigned a shoreline zone to survey on foot every Monday morning. The size of the zone will be determined by each SSV in consultation with the OLHC. Midpoint GPS coordinates will mark the zone on a map of the lake that the OLHC will maintain.
2. Attend one of two conveniently located training sessions which will be scheduled during the month of June.

3. During the month of June or early July, take some baseline photos of their survey location between the hours of 10 AM and 2 PM to use as reference photos. These photos will be sent to the OLHC to serve as references for comparisons throughout the summer. To the extent possible, the photos will be identified with GPS coordinates.
4. From July 9 – October 8 (14 weeks) fill out a weekly SSF about the condition of the lakeshore in their zone on Mondays between the hours of 9 AM and 1 PM.
5. If no suspicious conditions are observed, submit a “No Bloom” Report online at: <https://goo.gl/ln6Kjp>.
6. If the water conditions indicate a bloom that looks like cyanobacteria, take photos and a labeled sample immediately, using the photo and HAB sampling protocols provided by DEC. The sample and form should be delivered to the OLHC at the Cayuga County Parks and Trails Office in Auburn by 2pm on Monday afternoons. Samples must be refrigerated as soon as possible.
7. When delivering a sample, pick up fresh bottles and other supplies.
8. In addition to surveying their assigned shore area of the lake, four SSVs will be designated as Quadrant SSVs who will, when called on by the OLHC, follow up on a member of the public’s report of a potential bloom in their quadrant area (NE, SE, SW, NW). The follow-up usually will be a visual identification only. But if instructed to do so, the SSV will take a sample and photos using the same protocols for the weekly surveillance program.
9. Return unused supplies to the OLHC at the end of the season.

Owasco Lake HABS Coordinator (OLHC) Responsibilities

1. OLHC responsibilities will be handled by Julie Lockhart and/or by other volunteers or paid interns. Serve as the focal point for all Owasco Lake HAB Monitoring and Survey activities.
2. Collect input SSFs and potential HAB samples at the Cayuga County Parks and Trails office every Monday as needed.
3. Replace supplies for the SSVs as needed.
4. Deliver HAB samples and forms to UFI, the Upstate Freshwater Institute Laboratory in Syracuse, on Monday afternoons.
5. Once a public reporting system is in place under the OLWQMC’s supervision, monitor the system and respond as able. The OLHC will contact the appropriate quadrant SSV to check out potential bloom sightings. The OLHC will maintain a lake map to aid in identifying potential bloom locations.
6. Regularly send all pertinent information about blooms designated as “Suspicious” through trained visual inspection to the DEC and to any other appropriate agencies as directed by the OLWQMC.
7. Work with OLQMC to publish sample test results, which could be “Negative”, “Confirmed”, or “Confirmed With High Toxins”, on a regular basis.
8. Publish on the OWLA website all pertinent reports related to HABS on Owasco Lake for the year.
9. Provide a year-end HABS on Owasco Lake Report to the OWLA Board, OWLMC, and the DEC HABS Program.

Budget and In-kind Support in the Field

The costliest item in carrying out this proposal is the time and energy of the volunteers which is provided as a community service. The testing costs of the samples at UFI is covered by DEC up to approximately 40 samples and at a cost of \$100 based on a 10-business day response for toxin results. DEC also will pay for supplies used in taking samples. OLWQMC will provide volunteer and intern insurance protection. OWLA will pay for intern time to process samples and transport them to UFI

Acronyms Used in this Proposal

DEC- New York State Department of Environmental Conservation is the state agency that regulates activities to protect the environment and our natural resources. It is located in Albany, NY with Region 7 (includes Owasco Lake) offices in Syracuse, NY.

HABs – Harmful algae blooms; in common usage in publications.

OLHC - Owasco Lake HABS Coordinator to be established by this proposal.

OWLA – Owasco Watershed Lake Association is a volunteer citizen’s action group and 501 c3 organization.

OLWQMC – Owasco Lake Water Quality Management Council is an inter-agency group charged by Cayuga County and The State of New York with protecting the water quality of Owasco Lake. It is a 501 c3 organization.

SSF – Shoreline Survey Form to be established by this proposal.

SSV - Shore Survey Volunteers to be established by this proposal.

UFI – Upstate Freshwater Institute.