

Cyanobacteria Monitoring on Lake Champlain Summer 2013

Final Report for the Lake Champlain Basin Program

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Prepared by

Angela Shambaugh

Watershed Management Division
Vermont Agency of Natural Resources
Montpelier, Vermont

in conjunction with

Andy Chevrefils

Radiation and Toxicological Section
Vermont Department of Health

Mike Winslow

Lake Champlain Committee
Burlington, VT

Executive Summary

Cyanobacteria monitoring on Lake Champlain in 2013 continued to integrate qualitative observations, photographic documentation, quantitative analysis of algae populations, and microcystin concentrations into guidance for Lake Champlain users. Additional monitoring on four Vermont lakes (Carmi, Elmore, Iroquois and Memphremagog) was made possible by a CDC Climate Change grant awarded to the Vermont Department of Health.

Objectives

- continue to monitor cyanobacteria at locations on Lake Champlain through the established partnership between state and local officials, the Lake Champlain Committee and citizen volunteers;
- continue to provide consistent quantitative data at selected locations around Lake Champlain;
- test for the presence of microcystin and anatoxin when algal density and composition triggers are reached;
- facilitate communication about lake conditions through weekly updates to stakeholders via email and to the general public through the Vermont Department of Health webpage;
- continue to provide outreach and assistance to beach managers, lakeshore property owners and the general public so they can learn to recognize and respond appropriately to the presence of cyanobacteria blooms

More than 800 site-specific reports were submitted during 2013 from 83 locations on Lake Champlain and the four inland lakes. Fifty-four Champlain locations were monitored by citizen volunteers trained by the Lake Champlain Committee. Blooms, defined as category 3 of the visual protocol and alert level 2 of the tiered alert protocol, were reported 14 times in 2013. The highest concentration of microcystin was 0.43 µg/L at Maquam Shore Road in Swanton on September 3. No anatoxin was detected in 2013.

The data continue to support the observation that potentially toxic cyanobacteria, though present throughout Champlain, are typically at levels considered safe for recreation. This was also the case for the four inland lakes monitored in 2013. More than 90% of the reports from Lake Champlain and 100% of those from the inland lake returned an assessment of generally safe. No reports of illness in people or animals were received during 2013.

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Introduction

Lake Champlain is one of the largest lakes in the United States and an important water resource for the states of Vermont and New York, and the province of Quebec. It is primarily a recreational lake, but also serves as an important drinking water source for all three jurisdictions. Cyanobacteria blooms have been documented in the lake since the 1970s, with some areas experiencing extensive annual blooms. In 1999, several dog deaths were attributed to cyanobacteria toxins, raising health and safety concerns regarding drinking water supplies and recreational activities such as swimming, boating and fishing.

Between 2002 and 2012, the Lake Champlain Basin Program (LCBP) funded an annual cyanobacteria monitoring program which utilized cell density and toxin data to evaluate recreational conditions around the lake. Results were communicated to stakeholders around the region through weekly updates. The University of Vermont (UVM) developed and implemented the program, in cooperation with the Lake Champlain Committee (LCC) and the Vermont Departments of Health (VDH) and Environmental Conservation (VT DEC). The addition of a qualitative protocol in 2012 complemented the historical quantitative approach, expanded the area of coverage, and engaged citizen volunteers in the monitoring process. Beginning in 2012, oversight of the program became the responsibility of the state of Vermont.

Cyanobacteria monitoring on Lake Champlain in 2013 continued to integrate qualitative observations, photographic documentation and quantitative analysis of algae populations into guidance for lake users. Analysis of water for the presence of microcystin and anatoxin, when warranted, provided additional data to inform public health decisions in response to the presence of cyanobacteria.

Objectives

- continue to monitor cyanobacteria at locations on Lake Champlain through the established partnership between state and local officials, the Lake Champlain Committee and citizen volunteers;
- continue to provide consistent quantitative data at selected locations around Lake Champlain;
- test for the presence of microcystin and anatoxin when algal density and composition triggers are reached;
- facilitate communication about lake conditions through weekly updates to stakeholders via email and to the general public through the Vermont Department of Health webpage;
- continue to provide outreach and assistance to beach managers, lakeshore property owners and the general public so they can learn to recognize and respond appropriately to the presence of cyanobacteria blooms

Methods

The 2013 Champlain cyanobacteria monitoring program was coordinated by the VT DEC (Watershed Management Division), and implemented in conjunction with the VDH and LCC. Quantitative samples were collected following the tiered alert protocol at selected open water stations historically monitored by the program. Additional water samples for quantitative assessment were collected at selected shoreline locations. Qualitative data was gathered following the protocol developed in 2012 by the LCC.

Technical staff at the VDH continued work to develop a web-based data entry process intended to facilitate management of the large amounts of data generated each week.

Sampling Locations

Reports were received regularly from a total of 87 locations during the summer of 2013 (Figure 1). Table 1 provides a summary of stations by region, evaluation protocol, and proximity to shore. Full documentation of the sampling locations is located in Appendix A.

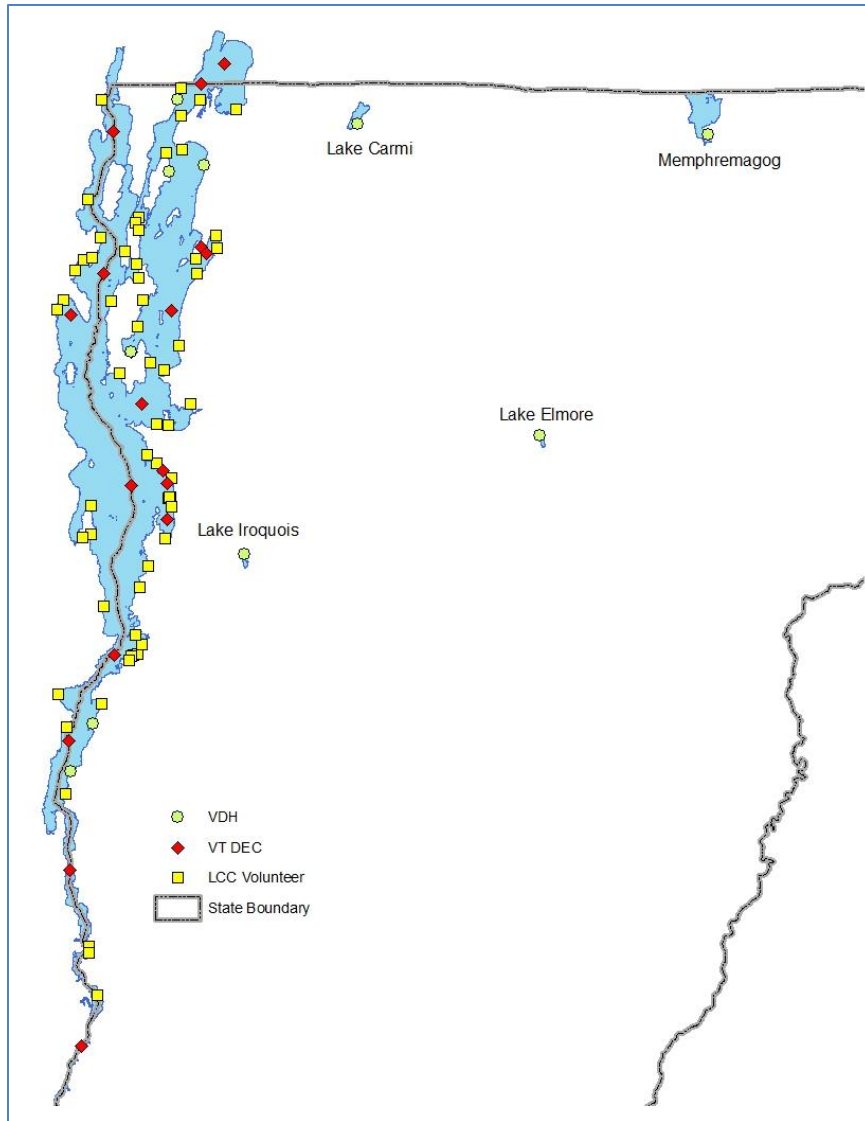


Figure 1. Cyanobacteria monitoring stations on Lake Champlain in 2013.

Table 1. Summary of 2013 cyanobacteria monitoring locations.

| Lake | Region | Assessment Type | Number of Stations | | |
|--------------|------------------------|---------------------|---------------------|-----------|---|
| | | | Open water | shoreline | |
| Champlain | Main Lake - north | Visual | | 8 | |
| | | Tiered alert | 3 | | |
| | | Tiered alert/visual | | | |
| | Main Lake - central | Visual | | 17 | |
| | | Tiered alert | 4 | | |
| | | Tiered alert/visual | | 2 | |
| | Main Lake - south | Visual | | 9 | |
| | | Tiered alert | 2 | | |
| | | Tiered alert/visual | | 2 | |
| | Missisquoi/ Maquam | Visual | | 5 | |
| | | Tiered alert | 3 | | |
| | | Tiered alert/visual | | 4 | |
| | St. Albans/the Islands | Visual | | 14 | |
| | | Tiered alert | 3 | | |
| | | Tiered alert/visual | | 2 | |
| | South Lake | Visual | | 3 | |
| | | Tiered alert | 2 | | |
| | | Tiered alert/visual | | | |
| | Carmi | | Tiered alert/visual | | 1 |
| | Elmore | | Tiered alert/visual | | 1 |
| | Iroquois | | Tiered alert/visual | | 1 |
| Memphremagog | | Tiered alert/visual | | 1 | |

Monitoring Protocols

The Tiered Alert Protocol

Quantitative data on taxonomic distribution, cell density and the presence of toxins were collected following the Tiered Alert protocol (Table 2). Monitoring began the week of June 3th and continued through September 25th. The DEC utilized this protocol at selected open water stations around Lake Champlain (Figure 1). Samples were collected at biweekly intervals, following the cell density triggers outlined in the protocol or the presence of visible accumulations of cyanobacteria, in conjunction with the water quality monitoring conducted for the Lake Champlain Long-term Water Quality and Biological Monitoring Program. Whole water samples collected weekly at selected shoreline locations by experienced monitors were also evaluated for the presence of cyanobacteria using the tiered alert cell count protocol.

Table 2. Outline of the Tiered Alert sampling protocol.

| Framework Level | Frequency | Activity | Response |
|-----------------|----------------|--|---|
| Qualitative | 2/month | 3m vertical plankton tow (63µm mesh), screened within 72 hrs. | If potentially toxic taxa observed, proceed to <i>Quantitative Level</i> |
| Quantitative | 2/month | 3m vertical plankton tow (63µm mesh), screened within 72 hrs. | If potentially toxic taxa densities >2000 cells/mL, proceed to <i>Vigilance Level</i> |
| Vigilance | 1/week, midday | 3m vertical plankton tow (63µm mesh), Full enumeration within 48 hrs. | If potentially toxic taxa densities >4000 cells/mL, proceed to <i>Alert Level 1</i> . Return to Quantitative Level if densities <4000 cells/mL. |
| Alert Level 1 | 1/week, midday | Collect whole water samples for phytoplankton and toxin analysis. Full enumeration and microcystin analysis with 48 hrs. | If microcystin >6µg/L (VT recreational standard) proceed to <i>Alert Level 2</i> . Return to Quantitative Level if densities <4000 cells/mL. |
| Alert Level 2 | 1/week, midday | As for Alert Level 1 | If microcystin >6µg/L, the VT recreational standard, remain at <i>Alert Level 2</i> . Return to Alert Level 1 if microcystin concentrations <6µg/L. |

Field Methods

Plankton and toxin samples were collected as whole water surface grabs or an integrated 63 µm mesh plankton net concentrate. A single whole water sample was collected by placing a bucket carefully at the surface and tipping to fill. The sample was mixed thoroughly and decanted into sample bottles for subsequent enumeration or toxin analysis. Net concentrates were obtained by lowering the plankton net opening to 3m and drawing it steadily back to the surface. The total volume of the concentrate was noted before mixing and dividing into aliquots for analysis. Samples for toxin analysis were filtered by the DEC in the field. All samples were kept on ice in coolers until they reached the lab.

Plankton Enumeration

Plankton samples were analyzed using an inverted compound microscope at 200x in a Sedgewick Rafter cell. One ml aliquots were allowed to settle for 10 – 15 minutes before analysis. During qualitative analysis, SR cells were scanned rapidly for the presence of potentially toxic cyanobacteria, generating presence/absence data only. For quantitative analysis, estimates of cell density were obtained for all observed cyanobacteria and selected other taxa using the size categories noted in Table 3. Observed individuals or colonies were assigned to a unit category and the number of units in each category is then multiplied by the cell factor to obtain an estimate of cell density/mL in the sample. During the analysis, all cyanobacteria were identified to the lowest possible taxonomic level while most other algae were identified simply at the division level, e.g. green algae or diatoms. Identical counting protocols were used for whole water and plankton concentrates. Plankton samples were counted by staff at the VT DEC and uploaded to the new VDH data interface, typically by midday on Thursdays.

Table 3. Size categories and cell factors used to estimate field densities of colonial algae.

| Taxon | Unit Category | Estimated cells/unit | Cell factor |
|--|----------------------|-----------------------------|--------------------|
| <i>Anabaena</i> <i>Aulocoseira</i> <i>Fragilaria</i> | Fragment | < 20 | 10 |
| | Small | 20 – 100 | 60 |
| | Medium | 100 – 1000 | 500 |
| | Large | >1000 | 1000 |
| <i>Microcystis</i> <i>Coelosphaerium</i> <i>Woronichinia</i> | Small | <100 | 50 |
| | Medium | 100 – 1000 | 500 |
| | Large | >1000 | 1000 |
| <i>Gloeotrichia</i> | Fragment | Single trichome | 20 |
| | Small | Quarter of a colony | 2500 |
| | Medium | Half of colony | 5000 |
| | Large | Entire colony | 10,000 |
| <i>Aphanizomenon</i> <i>Limnothrix</i> | Fragment | Single trichome | Measured |
| | Small | Small flake | 200 |
| | Medium | Medium flake | 500 |
| | Large | Large flake | 1000 |

The Visual Monitoring Protocol

Volunteer Recruitment and Training

Volunteers were asked to commit to monitoring at one location for the duration of the monitoring period (mid-June to early September). While the LCC did recruit to gain as wide a geographic distribution as possible, no volunteer was turned away. In a few areas of the lake, this did lead to a cluster of observation points. All volunteers attended a mandatory training session to learn to recognize cyanobacteria, become familiar with the assessment protocol, and learn how to submit their weekly reports. LCC staff met with or interacted with each volunteer in the weeks following the training to ensure consistency among volunteers and their assessment skills. Not all volunteers were able to navigate the internet-based reporting system and instead submitted their reports by telephone or email.

Weekly Observation Process

The LCC trained 205 volunteer monitors in 2013. Over the course of the summer, monitors reported from 54 different locations (Figure 1 and Appendix A). Protocols for the observation process, supporting documentation and the submittal process are located in Appendix B. Volunteers were asked to provide a single observation each week, preferably between 10am and 3pm, Sunday through Wednesday. Supplemental reports could also be provided. Volunteers evaluated algal conditions at their location using the prompts, photographs, and descriptions provided by the LCC, and assigned it one of the three categories:

- Category 1 – few or no cyanobacteria observed
- Category 2 – cyanobacteria present at less than bloom levels
- Category 3 – cyanobacteria bloom in progress

The description ‘bloom’ is not a well-defined scientific defined term. For the purposes of the visual monitoring protocol, blooms refer to very dense algal accumulations resulting in highly colored water and/or visible surface scums.

Each volunteer was asked to provide 3 photographs whenever category 2 or category 3 conditions were observed. All reports were submitted to the LCC by noon each Wednesday. LCC staff reviewed all reports and photos, conferring with volunteers and the VT DEC as needed to verify the presence of cyanobacteria and appropriate status. The LCC collated reports and uploaded the information to the VDH data interface by noon each Thursday. Staff also followed up with volunteers when no reports were received.

In addition to the photos, four sites visited by volunteers were also assessed quantitatively (North Beach - Burlington VT, North Hero State Park - North Hero VT, Red Rocks Park – South Burlington VT, and the Shipyard - Highgate VT). Each week, these volunteers made a visual assessment and collected water samples from the shore. These unfiltered samples were analyzed for microcystin, anatoxin and cyanobacteria density.

Toxin Analysis

Toxin analyses were conducted by the VDH laboratory in Burlington VT. Filtered plankton concentrates were placed in 50% methanol. Filters were frozen and thawed three times to lyse cells, centrifuged, diluted if necessary, and then prepared for ELISA analysis following the manufacturer's instructions. Whole water samples were analyzed as received, without filtration, unless algal biomass was high enough to interfere with analytical procedures. In that event, aliquots were filtered using glass fiber filters and both filtrate and filter were analyzed for the presence of microcystin by ELISA.

Filtered plankton samples for anatoxin analysis were extracted with methanol and acetonitrile and centrifuged. The supernatant was transferred to a clean vial, evaporated to dryness and reconstituted with MilliQ-grade water. The extracts were concentrated using solid phase extraction cartridges and analyzed by LC/MS/MS. Whole water samples were concentrated using solid phase extraction cartridges before analysis unless large amount of algae were present. In that event, aliquots were filtered using glass fiber filters, and both filtrate and filter were analyzed by LC/MS/MS.

Communication and Outreach

Members of the partner institutions LCC, VT DEC and VT VDH comprised an internal communication group which shared all cyanobacteria reports upon receipt and provided updates on response activities as needed. The group also shared literature and other pertinent information. The LCBP, NY DEC, and the Quebec Ministrie de Développement durable, Environnement, Faune et Parcs (MDDEFP) were also kept apprised of algal conditions. The MDDEFP also shared their observations and analytical results from northern Missisquoi Bay over the summer.

Weekly email updates summarizing reports, algae counts, species composition and toxin data were provided to a group of stakeholders responsible for public health. These were primarily state and town health officials, state and town waterfront managers, Champlain water suppliers, and researchers. Updates were released typically on Thursday afternoons but stakeholders also received notification of intense or extensive blooms as they occurred.

Notification of the Public

The Vermont Department of Health reported current cyanobacteria status on Lake Champlain on-line at http://healthvermont.gov/enviro/bg_algae/weekly_status.aspx. Status was presented both as text and on an interactive web map that allowed viewers to find information by location around the lake. Results of the assessments translated to one of three map status categories:

| VDH Map Status | Tiered Alert Protocol | Visual |
|------------------------|--------------------------------------|------------|
| Generally Safe (green) | Qualitative, Quantitative, Vigilance | Category 1 |
| Low Alert (yellow) | Alert Level 1 | Category 2 |
| High Alert (red) | Alert Level 2 | Category 3 |

Updates made by VDH to the data collection system behind the map in 2013 incorporated crowd sourcing software to facilitate data entry and posting. The interface was linked directly to the map, allowing observers to click on a desired location to generate a new report form. Data entered into the form was held until approved by project personnel, when it would be appended to the main database and immediately uploaded to the interactive map. Project staff did beta testing during 2013 but anticipate that this interface will be made available to selected volunteers in the future in order to streamline the reporting process. Starting in 2013, data from previous seasons can now be obtained through the VDH's Environmental Tracking Portal (<http://healthvermont.gov/tracking/>).

Map status was based on the primary report type for each station, visual or tiered alert. At the VDH climate change sites and the four quantitative sites monitored by LCC volunteers, water samples for toxin and phytoplankton analysis were collected concurrently with the visual assessment. At these locations, the visual assessment was used to generate the map status unless subsequent toxin analysis results indicated that this should change. In 2013, there were no instances when toxin data resulted in a change of cyanobacteria status.

Response to Monitoring Reports

Three jurisdictions were covered by the monitoring program efforts (New York, Vermont and Quebec). While the monitoring program provided a lake-wide system of assessing and reporting algal conditions, and shared that information via email and the VDH webpage, response to specific events was coordinated and implemented by the appropriate jurisdiction following their own response protocols.

Outreach and Assistance

Project partners provided outreach and assistance in many ways. Primarily, partners fielded phone calls and emails from individuals requesting information about bloom locations and appearance. They provided guidance and assistance to town health officers and beach managers during bloom events. The VT DEC and VDH worked with water suppliers and homeowners whenever drinking water concerns arose. LCC staff incorporated cyanobacteria information into their outreach and education efforts. All partners maintained webpages with resources and contact information for anyone seeking information about cyanobacteria.

Cyanobacteria monitoring is a priority topic at the regional and national level. The Champlain monitoring protocols have been shared with numerous agencies over the last year as other states consider how to implement their own programs. At the regional level, program staff participated in NEIWPC and EPA Region 1 efforts to develop common approaches to cyanobacteria monitoring and public health response.

Results

Overall effort

More than 800 site-specific reports were made by project partners and volunteers during 2013 (Table 4 and Appendix C). The majority of these were from the main lake of Lake Champlain but regular reports were also received from four inland lakes through the VDH climate grant. Reports based on the visual assessment protocol represented 92% of the total. The remaining reports were obtained using the tiered alert protocol.

Table 4. Summary of the 2013 cyanobacteria monitoring station reports distributed through the email update and on-line status map. () indicates supplemental reports from locations other than regularly monitored sites or between regular reporting times.

| Lake | Location | Monitor | Tiered Alert | Visual | Visual /Quantitative |
|------------------------|-------------------------|---------------|--------------|----------|----------------------|
| Lake Champlain | Main Lake - central | LCC volunteer | | 165 (21) | 24 |
| | | VT DEC | 15 | | |
| | | VDH | | | |
| | Main Lake – northern | LCC volunteer | | 85 (14) | |
| | | VT DEC | 10 | | |
| | | VDH | | | |
| | Main Lake – southern | LCC volunteer | | 68 (20) | |
| | | VT DEC | 8 | | |
| | | VDH | | | 22 |
| | Missisquoi Bay/Maquam | LCC volunteer | | 43 (7) | 24 |
| | | VT DEC | 12 | | |
| | | VDH | | (1) | 22 |
| | South Lake | LCC volunteer | | 35 | |
| | | VT DEC | 8 | | |
| | | VDH | | | |
| St. Albans/the islands | LCC volunteer | | 134 (34) | | |
| | VT DEC | 11 | | | |
| | VDH | | | 22 | |
| Lake Carmi | Carmi State Park beach | VDH | | | 11 |
| Lake Elmore | Elmore State Park beach | VDH | | | 11 |
| Lake Iroquois | Hinesburg Town beach | VDH | | | 11 |
| Lake Memphremagog | Prouty Beach, Newport | VDH | | | 11 |
| Total reports | | | 64 | 530 (97) | 158 |

The number of samples analyzed in 2013 are summarized in Table 5. Two hundred eighteen water samples were analyzed for phytoplankton density and 328 for toxins. More than half of the toxin analyses were conducted as part of the routine climate change monitoring grant received by the VDH

and were not triggered by density of potential toxin producers. Sixteen plankton filters for toxin analysis were obtained during site visits by the VT DEC.

Table 5. Number of water and phytoplankton samples collected and analyzed in 2013

| | Phytoplankton | | Microcystin | | Anatoxin | |
|---------------------------|---------------|-------------|-------------|------------------|-------------|------------------|
| | Net | Whole Water | Whole Water | Plankton filters | Whole Water | Plankton filters |
| VDH Climate Change sites | | 110 | 110 | | 110 | |
| LCC Quality Control Sites | | 44 | 46 | | 46 | |
| DEC tiered alert sites | 57 | 7 | | 8 | | 8 |
| Total | 57 | 161 | 158 | 8 | 158 | 8 |

Assessment Results

A summary of the assessment results for 2013 is presented in Table 6. The highest monitoring category reached at each regularly monitored station is noted in Table 7. Supplemental reports (n = 97) from locations not monitored regularly or outside of the regular monitoring period for LCC volunteers are summarized in Table 8. There were no reports of cyanobacteria mats. The full list of records is located in Appendix C. No reports of human or animal illness due to cyanobacteria were received in 2013.

More than 90% of the reports from regularly monitored stations indicated that few or no cyanobacteria were present (category 1 of the visual protocol and quantitative/vigilance level of the tiered alert protocol). Blooms, identified as category 3 of the visual protocol or alert level 2 of the tiered alert protocol, were reported 3 times at regularly monitored stations. Eleven supplemental reports of blooms were also received, for a total of 14 reports during the summer of 2013. The highest density of potentially toxic cyanobacteria in 2013 was observed at the Tri-town Road location in West Addison VT on July 2 (361,900 cells/mL).

Table 6. Summary of assessment reports received from regularly monitored stations in 2013.

| Lake | Region | Visual Protocol | | | Tiered Alert Protocol | | |
|----------------------|----------------------|-----------------|------------|------------|-----------------------|----------|---------|
| | | Category 1 | Category 2 | Category 3 | Vigilance or Lower | Alert 1 | Alert 2 |
| Champlain | Main Lake - northern | 85 | | | 10 | | |
| | Main Lake - central | 187 | | | 15 | | |
| | Main Lake -southern | 87 | 2 | 1 | 8 | | |
| | Missisquoi/Maquam | 85 | 4 | | 8 | 4 | |
| | South Lake | 34 | 1 | | 8 | | |
| | St. Albans | 148 | 6 | 2 | 9 | 2 | |
| Carmi | | 11 | | | | | |
| Elmore | | 11 | | | | | |
| Iroquois | | 10 | | | | | |
| Memphremagog | | 10 | | | | | |
| TOTAL REPORTS | | 668 | 13 | 3 | 58 | 6 | |

Table 7. Highest status reached at each monitored station in 2013. *indicates locations where LCC volunteers made visual assessments and collected quantitative samples to evaluate effectiveness of the visual system. ** indicates VDH climate change grant stations, which also have both visual assessment and quantitative samples. Boxes shaded in gray indicate analyses that are not applicable to the sample.

| Waterbody | Region | Station | Method | Status | Date Achieved | Highest Microcystin Achieved (µg/L) | Highest Anatoxin Achieved (µg/L) | Maximum Density of Potentially Toxic Cyanobacteria (cells/mL) | Cyanobacteria present when Max Density Achieved |
|-------------------------------------|---------------------|--|---------------------|--------------|---------------|-------------------------------------|----------------------------------|---|--|
| Lake Champlain | Main Lake - central | Beggs Park Beach, Essex NY | Visual | 1 | all | | | | |
| | | Boat Launch, Willsboro Bay NY | Visual | 1 | all | | | | |
| | | Buena Vista Park, Willsboro NY | Visual | 1 | all | | | | |
| | | Community Sailing Center, Burlington VT | Visual | 1 | all | | | | |
| | | LaPlatte River mouth, Shelburne Bay VT | Visual | 1 | all | | | | |
| | | Leddy Park, Burlington VT | Visual | 1 | all | | | | |
| | | LTM 16 | Tiered Alert | quantitative | 6/3/13 | not tested | not tested | 114 (8/16/13) | Anabaena, Aphanizomenon, Microcystis, Woronichinia/ Coelosphaerium |
| | | LTM 19 | Tiered Alert | quantitative | 7/12/13 | not tested | not tested | 74 (8/16/13) | Anabaena, Aphanizomenon, Woronichinia/ Coelosphaerium |
| | | LTM 21 | Tiered Alert | quantitative | 6/3/13 | not tested | not tested | 561 (9/19/13) | Anabaena, Aphanizomenon, Microcystis |
| | | LTM 25 | Tiered Alert | quantitative | 6/6/13 | not tested | not tested | 130 (8/26/13) | Anabaena, Aphanizomenon, Microcystis, Woronichinia |
| | | *North Beach, Burlington VT | tiered alert/visual | 1 | all | 0.17 (8/27/13) | <0.5 | 54200 (7/6/13) | Anabaena |
| | | Oakledge Park (Blanchard Beach), Burlington VT | Visual | 1 | all | | | | |
| | | Oakledge Park (Oakledge Cove), Burlington VT | Visual | 1 | all | | | | |
| | | Oakledge Park (rocky shoreline), Burlington VT | Visual | 1 | all | | | | |
| | | *Red Rocks Beach, S. Burlington VT | tiered alert/visual | 1 | all | <0.16 | <0.5 | 7200 (6/24/13) | Anabaena, Aphanizomenon |
| | | Rosetti Park, Colchester VT | Visual | 1 | all | | | | |
| Starr Farm Beach, Burlington VT | Visual | 1 | all | | | | | | |
| Teddy Bear Point Cove, Willsboro VT | Visual | 1 | all | | | | | | |

| Waterbody | Region | Station | Method | Status | Date Achieved | Highest Microcystin Achieved (µg/L) | Highest Anatoxin Achieved (µg/L) | Maximum Density of Potentially Toxic Cyanobacteria (cells/mL) | Cyanobacteria present when Max Density Achieved |
|----------------|---------------------------------------|--|--------------------------|---------------------|---------------|-------------------------------------|---|---|---|
| | | Town Beach, Charlotte VT | Visual | 1 | all | | | | |
| | | Town Beach, Shelburne VT | Visual | 1 | all | | | | |
| Lake Champlain | Main Lake - central | Town Farm Bay, Charlotte VT | Visual | 1 | all | | | | |
| | Main Lake - northern | City Beach, Plattsburgh NY | Visual | 1 | all | | | | |
| | | Eagle Acres Rd, Chazy NY | Visual | 1 | all | | | | |
| | | LTM 33 | Tiered Alert | quantitative | 6/21/13 | not tested | not tested | 11 (7/29/13) | Anabaena, Aphanizomenon |
| | | LTM 36 | Tiered Alert | quantitative | 6/21/13 | not tested | not tested | 29 (7/29/13) | Anabaena, Aphanizomenon |
| | | LTM 46 | Tiered Alert | quantitative | 6/24/13 | not tested | not tested | 257 (9/3/13) | Anabaena, Aphanizomenon, Aphanothece, Microcystis |
| | | Pt. Au Roche State Park NY (beach) | Visual | 1 | all | | | | |
| | | Pt. Au Roche State Park NY (boat launch) | Visual | 1 | all | | | | |
| | | Pt. Au Roche State Park NY (Deep Bay) | Visual | 1 | all | | | | |
| | | Rouses Pt, NY | Visual | 1 | all | | | | |
| | | Treadswell Bay, Beekmantown NY | Visual | 1 | all | | | | |
| | | Wilcox Dock, Plattsburgh NY | Visual | 1 | all | | | | |
| | | Main Lake - southern | **Arnold Bay, Pantown VT | Tiered alert/Visual | 1 | all | <0.16 | <0.5 | 4170 (7/16/13) |
| | Boat launch, Button Bay State Park VT | Visual | 1 | all | | | | | |
| | Boat Launch, Westport NY | Visual | 2 | 7/2/13 | | | | | |
| | Camp Dudley, Westport NY | Visual | 1 | all | | | | | |
| | DAR State Park VT | Visual | 1 | all | | | | | |
| | Hawkins Bay, VT | Visual | 1 | all | | | | | |
| | Kingsland Bay State Park, VT | Visual | 2 | 8/27/13 | | | | | |
| | Long Point, VT | Visual | 1 | all | | | | | |
| LTM 07 | Tiered Alert | quantitative | 6/11/13 | not tested | not tested | 195 (8/28/13) | Anabaena, Aphanizomenon, Woronichinia/ Coelosphaerium | | |

| Waterbody | Region | Station | Method | Status | Date Achieved | Highest Microcystin Achieved (µg/L) | Highest Anatoxin Achieved (µg/L) | Maximum Density of Potentially Toxic Cyanobacteria (cells/mL) | Cyanobacteria present when Max Density Achieved |
|----------------------------|------------------------|---|---------------------|--------------|---------------|-------------------------------------|----------------------------------|---|--|
| | | LTM 09 | Tiered Alert | quantitative | 6/11/13 | not tested | not tested | 105 (8/28/13) | Anabaena, Aphanizomenon, Microcystis, Woronichinia |
| | | Town Beach, Ferrisburgh VT | Visual | 3 | 7/2/13 | | | | |
| Lake Champlain | Main Lake - southern | **Tri Town Road, West Addison VT | tiered alert/visual | 2 | 7/2/13 | 0.16 (8/27/13) | <0.5 | 361900 | Anabaena |
| | Missisquoi Bay/Maquam | **Alburgh VT | Tiered alert/Visual | 1 | all | 0.32 (7/23/13) | <0.5 | 129,200 (7/23/13) | Aphanizomenon, Microcystis |
| | | Chapman Bay, VT | Visual | 2 | 8/28/13 | | | | |
| | | Donaldson Pt, VT | Visual | 1 | all | | | | |
| | | Highgate Springs, Highgate VT | tiered alert | alert 1 | 7/30/13 | 0.036 | <0.001 | 14100 | Anabaena, Aphanizomenon, Microcystis |
| | | Larry Greene Fish and Wildlife Access, Swanton VT | Visual | 2 | 8/17/13 | | | | |
| | | LTM 50 | Tiered Alert | alert 1 | 7/30/13 | 0.15 | <0.002 | 86100 (7/30/13) | Anabaena, Aphanizomenon, Microcystis |
| | | LTM 51 | Tiered Alert | alert 1 | 7/30/13 | 0.18 | < 0.002 | 136700 (7/30/13) | Anabaena, Aphanizomenon, Aphanothece, Microcystis |
| | | Maquam Bay, Swanton VT | Visual | 1 | all | | | | |
| | | **Maquam Shore Road, Swanton VT | tiered alert/visual | 1 | all | 0.43 (9/3/13) | <0.5 | 898 (8/20/13) | Aphanizomenon, Aphanothece |
| | | *North Hero State Park, VT | tiered alert/visual | 1 | all | 0.18 (6/17/13) | <0.5 | 1240 (7/15/13) | Aphanizomenon, Aphanothece |
| | | *Shipyard, Highgate Springs VT | tiered alert/visual | 2 | 8/26/13 | 0.32 *8/26/13) | <0.5 | 170600 (8/26/13) | Anabaena, Aphanizomenon, Microcystis |
| | South Lake | Allen Bay, Orwell VT | Visual | 1 | all | | | | |
| | | Beadles Cove, Shoreham VT | Visual | 2 | 7/14/13 | | | | |
| | | LTM 02 | Tiered Alert | quantitative | 6/4/13 | not tested | not tested | 76 (8/19/13) | Anabaena, Aphanizomenon |
| | | LTM 04 | Tiered Alert | quantitative | 6/4/13 | not tested | not tested | 422 (8/19/13) | Anabaena, Aphanizomenon |
| | | Marlena Bay, Shoreham VT | Visual | 1 | all | | | | |
| | St. Albans/the islands | **Boat Launch, North End Road, North Hero VT | tiered alert/visual | 1 | all | Not tested | Not tested | 0 | no cyanobacteria observed |
| | | Boat launch, St. Albans Bay VT | Tiered Alert | alert 1 | 8/20/13 | 0.062 | <0.002 | 36000 | Anabaena, Aphanizomenon |
| | | Carry Bay, VT | Visual | 1 | all | | | | |
| Ferrand Rd. St. Albans, VT | | Visual | 2 | 7/29/13 | | | | | |

| Waterbody | Region | Station | Method | Status | Date Achieved | Highest Microcystin Achieved (µg/L) | Highest Anatoxin Achieved (µg/L) | Maximum Density of Potentially Toxic Cyanobacteria (cells/mL) | Cyanobacteria present when Max Density Achieved |
|-------------------|------------------------|---|---------------------|--------------|---------------|-------------------------------------|----------------------------------|---|---|
| | | Georgia Shore, VT | Visual | 3 | 7/9/13 | | | | |
| Lake Champlain | St. Albans/the islands | Grand Isle State Park VT | Visual | 1 | all | | | | |
| Lake Champlain | St. Albans/the islands | **Keeler Bay, South Hero VT | tiered alert/visual | 1 | all | < 0.16 | <0.5 | 3270 | Anabaena |
| Lake Champlain | St. Albans/the islands | Kill Kare State Park VT | Visual | 1 | all | | | | |
| Lake Champlain | St. Albans/the islands | Knight Point State Park VT | Visual | 1 | all | | | | |
| Lake Champlain | St. Albans/the islands | LTM 34 | Tiered Alert | quantitative | 6/19/13 | not tested | not tested | 19 (8/20/13) | Anabaena, Aphanizomenon |
| Lake Champlain | St. Albans/the islands | LTM 40 | Tiered Alert | alert 1 | 8/20/13 | 0.002 | <0.002 | 15900 (8/20/13) | Anabaena, Aphanizomenon |
| Lake Champlain | St. Albans/the islands | Marycrest Beach, Grand Isle VT | Visual | 2 | 7/23/13 | | | | |
| Lake Champlain | St. Albans/the islands | Milton, VT | Visual | 1 | all | | | | |
| Lake Champlain | St. Albans/the islands | Sand Bar State Park VT | Visual | 1 | all | | | | |
| Lake Champlain | St. Albans/the islands | St. Albans Bay Park VT | Visual | 3 | 8/16/13 | | | | |
| Lake Champlain | St. Albans/the islands | The Gut, Grand Isle VT | Visual | 1 | all | | | | |
| Lake Champlain | St. Albans/the islands | Vantine Fish and Wildlife Access, Grand Isle VT | Visual | 2 | 7/15/13 | | | | |
| Lake Champlain | St. Albans/the islands | White's Beach, South Hero VT | Visual | 1 | all | | | | |
| Lake Carmi | | **Carmi State Park VT (beach) | tiered alert/visual | 1 | all | < 0.16 | <0.5 | 72800 | Anabaena, Aphanizomenon, Aphanothece |
| Lake Elmore | | **Elmore State Park VT (beach) | tiered alert/visual | 1 | all | <0.16 | < 0.5 | 5930 (7/17/13) | Anabaena, Aphanothece |
| Lake Iroquois | | **Lake Iroquois, Public Beach, Hinesburg VT | tiered alert/visual | 1 | all | <0.16 | <0.5 | 29300 | Anabaena, Coelosphaerium, Microcystis |
| Lake Memphremagog | | **Lake Memphremagog, Prouty Beach Newport VT | tiered alert/visual | 1 | all | <0.16 | <0.5 | 3470 | Woronichinia/ Coelosphaerium |

Table 8. Summary of supplemental reports received in 2013. These represented areas that were not routinely monitored or were provided outside of the normal Sunday – Wednesday reporting period for the LCC monitors. Boxes shaded in gray indicate analyses that are not applicable to the sample.

| Region | Report Date | Station | Status | Method | Cyanobacteria Taxa | Microcystin (µg/L) | Anatoxin (µg/L) |
|------------------------|-------------|---|--------|--------|--------------------|--------------------|-----------------|
| Main Lake - central | 7/3/2013 | Red Rocks Beach, S. Burlington VT | 3 | Visual | | | |
| Main Lake - central | 7/9/2013 | Boat Launch, Port Douglas NY | 3 | Visual | | | |
| Main Lake - southern | 7/2/2013 | Camp Greylock, Ferrisburgh VT | 3 | Visual | | | |
| Missisquoi Bay/Maquam | 6/19/2013 | Highgate Cliffs, Highgate VT | 3 | Visual | | | |
| Missisquoi Bay/Maquam | 8/27/2013 | Lakewood Drive, Swanton | 3 | Visual | | | |
| St. Albans/the islands | 8/17/2013 | Boat launch, St. Albans Bay VT | 3 | Visual | | | |
| St. Albans/the islands | 8/25/2013 | Boat launch, St. Albans Bay VT | 3 | Visual | | | |
| St. Albans/the islands | 8/27/2013 | Boat launch, St. Albans Bay VT | 3 | Visual | | | |
| St. Albans/the islands | 8/27/2013 | St. Albans Bay Park VT | 3 | Visual | | | |
| St. Albans/the islands | 8/28/2013 | Pelots Bay, VT | 3 | Visual | | | |
| St. Albans/the islands | 8/28/2013 | St. Albans Bay Park VT | 3 | Visual | | | |
| Main Lake - central | 8/12/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 2 | Visual | | | |
| Main Lake - northern | 7/5/2013 | Peru, NY | 2 | Visual | | | |
| Main Lake - northern | 7/9/2013 | Boat Launch, Peru NY | 2 | Visual | | | |
| Main Lake - southern | 7/4/2013 | Kingsland Bay State Park, VT | 2 | Visual | | | |
| Main Lake - southern | 8/16/2013 | Boat Launch, Westport NY | 2 | Visual | | | |
| Missisquoi Bay/Maquam | 8/11/2013 | Lakewood Drive, Swanton | 2 | Visual | | | |
| Missisquoi Bay/Maquam | 8/27/2013 | Shipyard, Highgate Springs VT | 2 | Visual | | | |
| Missisquoi Bay/Maquam | 8/28/2013 | Chapman Bay, VT | 2 | Visual | | | |

| Region | Report Date | Station | Status | Method | Cyanobacteria Taxa | Microcystin (µg/L) | Anatoxin (µg/L) |
|------------------------|-------------|---|--------|--------|--------------------|--------------------|-----------------|
| St. Albans/the islands | 6/29/2013 | Sand Bar State Park VT | 2 | Visual | | | |
| St. Albans/the islands | 7/18/2013 | Boat launch, St. Albans Bay VT | 2 | Visual | | | |
| St. Albans/the islands | 8/18/2013 | St. Albans Bay Park VT | 2 | Visual | | | |
| St. Albans/the islands | 8/20/2013 | Boat launch, St. Albans Bay VT | 2 | Visual | | | |
| St. Albans/the islands | 8/24/2013 | Pelots Bay, VT | 2 | Visual | | | |
| Main Lake - central | 6/18/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | |
| Main Lake - central | 6/18/2013 | Niquette Bay State Park VT | 1b | Visual | | | |
| Main Lake - central | 6/22/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | |
| Main Lake - central | 6/25/2013 | Niquette Bay State Park VT | 1c | Visual | | | |
| Main Lake - central | 7/3/2013 | Niquette Bay State Park VT | 1a | Visual | | | |
| Main Lake - central | 7/6/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1a | Visual | | | |
| Main Lake - central | 7/6/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | |
| Main Lake - central | 7/7/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1c | Visual | | | |
| Main Lake - central | 7/8/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1c | Visual | | | |
| Main Lake - central | 7/13/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | |
| Main Lake - central | 7/14/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1b | Visual | | | |
| Main Lake - central | 7/17/2013 | Niquette Bay State Park VT | 1a | Visual | | | |
| Main Lake - central | 7/29/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1c | Visual | | | |
| Main Lake - central | 8/10/2013 | LaPlatte River mouth, Shelburne Bay VT | 1c | Visual | | | |
| Main Lake - central | 8/16/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | |

| Region | Report Date | Station | Status | Method | Cyanobacteria Taxa | Microcystin (µg/L) | Anatoxin (µg/L) |
|----------------------|-------------|--|--------|--------|--------------------|--------------------|-----------------|
| Main Lake - central | 9/13/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | |
| Main Lake - central | 9/21/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | |
| Main Lake - northern | 6/17/2013 | Pt. Au Roche State Park NY (boat launch) | 1b | Visual | | | |
| Main Lake - northern | 6/25/2013 | Pt. Au Fer, Champlain NY | 1a | Visual | | | |
| Main Lake - northern | 7/7/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | |
| Main Lake - northern | 7/10/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | |
| Main Lake - northern | 7/15/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | |
| Main Lake - northern | 7/16/2013 | Boat Launch, Peru NY | 1a | Visual | | | |
| Main Lake - northern | 7/17/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | |
| Main Lake - northern | 7/22/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | |
| Main Lake - northern | 7/24/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | |
| Main Lake - northern | 8/5/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | |
| Main Lake - northern | 8/7/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | |
| Main Lake - northern | 8/19/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | |
| Main Lake - southern | 6/20/2013 | Long Point, VT | 1a | Visual | | | |
| Main Lake - southern | 6/27/2013 | Long Point, VT | 1a | Visual | | | |
| Main Lake - southern | 7/2/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | |
| Main Lake - southern | 7/2/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | |
| Main Lake - southern | 7/4/2013 | Camp Greylock, Ferrisburgh VT | 1c | Visual | | | |
| Main Lake - southern | 7/5/2013 | Long Point, VT | 1a | Visual | | | |

| Region | Report Date | Station | Status | Method | Cyanobacteria Taxa | Microcystin (µg/L) | Anatoxin (µg/L) |
|------------------------|-------------|---|--------|---------------------|--|--------------------|-----------------|
| Main Lake - southern | 7/8/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | |
| Main Lake - southern | 7/9/2013 | Camp Greylock, Ferrisburgh VT | 1a | Visual | | | |
| Main Lake - southern | 7/14/2013 | Boat launch, Button Bay State Park VT | 1c | Visual | | | |
| Main Lake - southern | 7/15/2013 | Long Point, VT | 1a | Visual | | | |
| Main Lake - southern | 7/16/2013 | Camp Greylock, Ferrisburgh VT | 1a | Visual | | | |
| Main Lake - southern | 7/24/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | |
| Main Lake - southern | 7/30/2013 | Camp Greylock, Ferrisburgh VT | 1b | Visual | | | |
| Main Lake - southern | 8/6/2013 | Camp Greylock, Ferrisburgh VT | 1a | Visual | | | |
| Main Lake - southern | 8/12/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | |
| Main Lake - southern | 8/20/2013 | Boat Launch, Westport NY | 1b | Visual | | | |
| Main Lake - southern | 9/24/2013 | Hawkins Bay, VT | 1a | Visual | | | |
| Missisquoi Bay/Maquam | 7/7/2013 | Donaldson Pt, VT | 1a | Visual | | | |
| Missisquoi Bay/Maquam | 7/16/2013 | Rock River Fish and Wildlife Access, Swanton VT | 1b | tiered alert/visual | Anabaena, Aphanizomenon, Gloeotrichia, Microcystis | 1.3 | <0.5 |
| Missisquoi Bay/Maquam | 9/13/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1b | Visual | | | |
| St. Albans/the islands | 6/16/2013 | South Hero Fish and Wildlife Boat Access | 1a | Visual | | | |
| St. Albans/the islands | 6/16/2013 | Rt.2, South of bridge, North Hero VT | 1b | Visual | | | |
| St. Albans/the islands | 6/23/2013 | Rt.2, South of bridge, North Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 6/25/2013 | The Gut, Grand Isle VT | 1b | Visual | | | |
| St. Albans/the islands | 7/2/2013 | Rt. 2 - City Bay, North Hero VT | 1a | Visual | | | |

| Region | Report Date | Station | Status | Method | Cyanobacteria Taxa | Microcystin (µg/L) | Anatoxin (µg/L) |
|------------------------|-------------|---------------------------------|--------|--------|--------------------|--------------------|-----------------|
| St. Albans/the islands | 7/8/2013 | Rt. 2 - City Bay, North Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 7/9/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 7/9/2013 | West Shore Rd., North Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 7/10/2013 | White's Beach, South Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 7/17/2013 | White's Beach, South Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 7/23/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 7/29/2013 | West Shore Rd., North Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 7/30/2013 | Rt. 2 - City Bay, North Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 7/30/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 8/6/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 8/6/2013 | White's Beach, South Hero VT | 1b | Visual | | | |
| St. Albans/the islands | 8/14/2013 | White's Beach, South Hero VT | 1b | Visual | | | |
| St. Albans/the islands | 8/22/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 8/27/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 9/2/2013 | Boat launch, St. Albans Bay VT | 1c | Visual | | | |
| St. Albans/the islands | 9/3/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |
| St. Albans/the islands | 9/4/2013 | White's Beach, South Hero VT | 1a | Visual | | | |
| St. Albans/the islands | 9/9/2013 | The Gut, Grand Isle VT | 1a | Visual | | | |

A total of 166 samples were analyzed for the presence of microcystin in 2013 (Table 9). Microcystin was detected in 18 samples (11% of the samples). None of these exceeded the Vermont recreational guidance level of 6µg/L. Anatoxin was not detected in the 166 samples analyzed for this toxin in 2013.

Table 9. Number of cyanotoxin samples tested and maximum concentrations measured in 2013.

| Lake | Region | Location | Microcystin | | | Anatoxin | |
|---------------|------------------------|--|-----------------------------|---------------------|------------------------|--------------------|---------------------|
| | | | Samples Tested (N) | Above detection (N) | Max Microcystin (µg/L) | Samples Tested (N) | Max Anatoxin (µg/L) |
| Champlain | Main Lake - central | North Beach | 12 | 1 | 0.17 | 12 | Not detected |
| | | Red Rocks Beach | 12 | 0 | Not detected | 12 | Not detected |
| | Main Lake - southern | Arnold Bay, Panton VT | 11 | 1 | 0.33 | 11 | Not detected |
| | | Tri-Town Rd, West Addison VT | 11 | 1 | 0.16 | 11 | Not detected |
| | St. Albans/the islands | Boat Launch, North End Rd, North Hero VT | 11 | 0 | Not detected | 11 | Not detected |
| | | Boat Launch, St. Albans Bay | 1 | 1 | 0.062 | 1 | not detected |
| | | Keeler Bay, South Hero VT | 11 | 0 | Not detected | 11 | Not detected |
| | | LTM 40 | 1 | 1 | 0.002 | 1 | Not detected |
| | | North Hero State Park | 12 | 2 | 0.18 | 12 | Not detected |
| | Missisquoi Bay/ Maquam | Alburgh VT | 11 | 1 | 0.32 | 11 | Not detected |
| | | Highgate Springs VT | 2 | 2 | 0.036 | 2 | Not detected |
| | | LTM 50 | 2 | 2 | 0.15 | 2 | Not detected |
| | | LTM 51 | 3 | 3 | 0.18 | 3 | Not detected |
| | | Maquam Shore Rd, Swanton VT | 11 | 1 | 0.43 | 11 | Not detected |
| | | Shipyard, Highgate Springs VT | 11 | 1 | 0.32 | 11 | Not detected |
| | Carmi | | Carmi State Park VT (beach) | 11 | 1 | 0.21 | 11 |
| Elmore | | Elmore State Park VT (beach) | 11 | 0 | Not detected | 11 | Not detected |
| Iroquois | | Public Beach, Hinesburg VT | 11 | 0 | Not detected | 11 | Not detected |
| Memphre-magog | | Prouty Beach, Newport VT | 11 | 0 | Not detected | 11 | Not detected |
| | TOTAL | | 166 | 18 | - | 166 | - |

Nineteen cyanobacteria taxa were observed in Lake Champlain or the four inland lakes during the 2013 monitoring period (Table 10). Of these, one (*Merismopedia* spp.) was added to Table 10 in 2013, but

reported by the program for the first time in 2003. The majority of cyanobacteria taxa observed in the 2013 monitoring samples have been identified as potential toxin producers in the scientific literature.

Table 10. Cyanobacteria taxa observed in Lake Champlain cyanobacteria monitoring samples. Year of first report refers only to the cyanobacteria monitoring program. *Prior to 2012, cyanobacteria were noted to genus only.

| Name | Toxin producer | Present in 2013 | Year of first report |
|---|----------------|-----------------|----------------------|
| <i>Anabaena circinalis</i> | yes | yes | 2003* |
| <i>Anabaena planctonica</i> | yes | yes | 2003* |
| <i>Anabaena</i> spp | yes | yes | 2003* |
| Aphanizomenon spp. (likely <i>A. gracile</i>) | yes | yes | 2012 |
| <i>Aphanizomenon flos-aquae</i> | yes | yes | 2003* |
| <i>Aphanocapsa</i> spp. | no | yes | 2004 |
| <i>Aphanothece</i> spp. | yes | yes | 2012 |
| <i>Arthrospira</i> spp. | no | yes | 2012 |
| <i>Chroococcus</i> spp. | no | yes | 2003 |
| <i>Coelosphaerium</i> spp. | Yes | yes | 2003 |
| <i>Gloeotrichia</i> spp. | yes | yes | 2003 |
| <i>Gloeocapsa</i> spp. | yes | no | 2004 |
| * <i>Limnothrix</i> spp. | possible | yes | 2012 |
| <i>Merismospedia</i> spp. | no | yes | 2003 |
| <i>Microcystis</i> spp. | yes | yes | 2003* |
| <i>Microcystis wesenbergii</i> | yes | yes | 2012 |
| <i>Oscillatoria</i> spp. | yes | yes | 2005 |
| * <i>Pseudanabaena</i> spp | yes | yes | 2012 |
| * <i>Radiocystis</i> spp. | possible | yes | 2012 |
| * <i>Scytonema crispum</i> (synonym <i>Lyngbya cinncinata</i>) | yes | no | 2012 |
| <i>Snowella</i> spp | no | yes | 2012 |
| <i>Woronichinia</i> spp (formerly <i>Gomphosphaeria</i> spp.) | yes | yes | 2012 |

Reproducibility of Assessment Results

Environmental variability

Phytoplankton composition and density is highly variable in natural environments such as Lake Champlain. Cyanobacteria, in particular, exhibit considerable variation in population density within very short distances and time intervals. The effectiveness of the tiered alert protocol in light of this variability was documented by Rogalus and Watzin (2008). In 2013, consistency between field and laboratory duplicates was good (Table 11). The three field duplicates returned the same assessment level for each of the paired samples. Laboratory duplicates (a second aliquot analyzed from a single sample) also had good consistency as did recounts of a single aliquot.

Table 11. Comparability of phytoplankton quality control samples.

| Test | N | Status Identical |
|-----------------------------|----|------------------|
| Field duplicates | 3 | 3 |
| Laboratory duplicates | 11 | 9 |
| Recount of a single aliquot | 3 | 3 |

Volunteer training

Volunteer trainings were conducted by LCC staff at locations around the Lake Champlain Basin. Seventeen formal sessions trained 205 volunteers. The largest session, for Burlington Parks and Recreation staff, had 59 participants. A special session in collaboration with Vermont’s Forest, Parks and Recreation Department included state park staff, municipal staff and town health officers. Numerous media interviews and appearance alerted the public to the opportunity to become a volunteer monitor.

Training sessions provided information about cyanobacteria – causes, conditions that favor the development of blooms, appearance, associated health concerns, and management efforts aimed at reducing the bloom frequency. Monitors were taught to distinguish cyanobacteria from other phenomena they might see in the lake such as green algae and pollen. Training sessions also introduced volunteers to the on-line LCC cyanobacteria resources and reporting form.

The volunteer monitor program has an impact beyond the recruitment of volunteers and collection of data. As awareness of the possible health effects associated with cyanobacteria spreads, the interest in learning more about these organisms increases. This year, the LCC provided an informal training for staff at Gardener’s Supply in Burlington. While this training may not have resulted in any volunteer recruitment, attendees became familiar with cyanobacteria, potential health risks associated with them, and the water quality conditions that increase the likelihood of blooms. In turn, they were empowered with the knowledge not only to reduce their own risk of exposure but an awareness of the connections between blooms and land use activities in Vermont which may lead to changes in their own behavior.

Communication with the Stakeholders and the General Public

Results of the weekly assessments were communicated via email to a variety of stakeholders. The 100 recipients were largely associated with the states of Vermont and New York (n = 62). Other recipients included staff at EPA (3), provincial officials in QE (4), the Missisquoi Wildlife Refuge, city government or public works departments (10), non-profit organizations (10), university researchers (2), and unknown addresses (9).

Information was shared with the general public via the VDH cyanobacteria webpages - http://healthvermont.gov/enviro/bg_algae/bgalgae.aspx . Between June 2012 and March 2013, these webpages received over 10,000 visits from 8000 users. The monitoring data was also accessible through the VDH’s Environmental Public Health tracking portal at <http://healthvermont.gov/tracking/index.aspx>.

Typically, the VDH distributes a press release in early July that reminds parents, boaters, swimmers and pet owners to watch for cyanobacteria when enjoying the water. The release also is a way to recruit volunteers monitors (http://healthvermont.gov/news/2013/070813_bgalgae.aspx).

Discussion

This season marked the 11th year of cyanobacteria monitoring on Lake Champlain and the second utilizing volunteers to make a visual assessment of cyanobacteria conditions along shorelines. More than 300 volunteers have been trained over the last two years and interest in the program remains high. In combination with the quantitative data collected at selected stations on Champlain, the monitoring network has become a powerful tool for evaluating and communicating health risks associated with exposure to cyanobacteria on the lake.

A grant from the CDC enabled the VDH to extend monitoring to four additional lakes in Vermont. There is no regular monitoring of Vermont lakes other than Champlain and the CDC funding provided a valuable opportunity to gather quantitative data and increase awareness of the visual monitoring protocols. It is anticipated that the funding will continue to support monitoring on these four lakes during 2014.

The Champlain program and the use of volunteers also attracted interest from around the region. Project partners have responded to inquiries from their counterparts in neighboring states and state staff are participating in a regional effort to develop common approaches to monitoring cyanobacteria monitoring and communication with the public.

Effectiveness of the visual monitoring protocols

We continue to collect quantitative data in conjunction with the visual assessment to evaluate overall performance. In 2013, volunteers at Red Rocks and North Beaches in the Burlington area, the Shipyard at Highgate Springs and North Hero State Park collected water samples when they made their assessments. VDH staff did the same at the 10 Climate Change sites on Champlain and the inland lakes.

Most assessments (38 of 40) at LCC stations over the summer were in category 1 (generally safe) (Table 12). The density of potentially toxic cyanobacteria for all category 1 assessments ranged from 0 – 70,000 cells/mL. Low microcystin concentrations were measured on three dates when assessments indicated generally safe conditions (North Beach on 8/27, North Hero State Park on 8/26, and the Shipyard on 9/1.) No anatoxin was detected at any of the stations. Two assessments of category 2 (cyanobacteria at less than bloom levels) were reported. Density of potentially toxic cyanobacteria on these dates was 49,000 – 170,000 cells/ml. No microcystin or anatoxin was detected in the water samples associated with these two assessments.

VDH guidance for beaches, also used for evaluating non-beach recreational areas, recommends closure and posting of public beaches if **any** of the following conditions are met:

- Visible known cyanobacteria bloom/scum or an unknown, potentially cyanobacteria (*i.e.*, not pollen) bloom/scum

- Microcystin-LR (equivalents) concentration greater than or equal to 6 µg/L(ppb)
- Anatoxin-a concentration greater than or equal to 10µg/L (ppb).

Data from quantitative samples collected along with the visual assessments supported the status of generally safe reported at the sites much of the summer, e.g. no visible scum and concentrations of microcystin and anatoxin below VDH beach guidelines. The category 2 assessments were also supported by the data, e.g. no visible scum and concentrations of microcystin and anatoxin below guidelines.

There was one instance of microcystin detected at low concentrations (0.16 µg/L) when no cyanobacteria were observed in the corresponding plankton sample (North Hero State Park, 8/26/13). While this may occur in the aftermath of a bloom, when 'free' microcystin can be present in the water, no blooms had been observed at this station. A few potentially toxic cyanobacteria had been present previously, however, and it is possible that some were present in the water sample submitted for microcystin analysis but not observed in the corresponding, but separate, water sample submitted for plankton analysis. The concentration observed is also very close to the detection level of the analysis and may be an artifact.

VDH staff reporting from stations on Lake Champlain and four Vermont inland lakes noted category 1 conditions on all dates except one. Densities of potentially toxic cyanobacteria for category 1 assessments ranged from 0 - 129,000 cells/mL. Low concentrations of microcystin were detected on four dates when conditions were assessed as category 1. Anatoxin was not detected at any CDC station. One category 2 report was received. Density of potentially toxic cyanobacteria was 361,000 cells/mL. No microcystin was detected on this date.

Data from quantitative samples collected along with the visual assessments supported the status of generally safe for all CDC samples. A second instance of microcystin detected when no cyanobacteria were present did occur at the Maquam Shore Rd site on September 3. (0.43 µg/L). No bloom had been reported from this location previously, but cyanobacteria had been noted in several samples.

Table 12. Paired reports from sites monitored by LCC volunteers in 2013.

| Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|-------------|-----------------------------------|---------------|---|----------------------------|-------------------------------------|-----------------|
| 6/25/2013 | North Beach, Burlington VT | 1b | 667 | Anabaena, Oscillatoria | <0.16 | <0.5 |
| 7/16/2013 | North Beach, Burlington VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/23/2013 | North Beach, Burlington VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/31/2013 | North Beach, Burlington VT | 1a | 0 | Aphanizomenon, Aphanothece | <0.16 | < 0.5 |
| 8/7/2013 | North Beach, Burlington VT | 1b | 0 | Anabaena | < 0.16 | <0.5 |
| 8/13/2013 | North Beach, Burlington VT | 1a | 488 | Anabaena | < 0.16 | <0.5 |
| 8/20/2013 | North Beach, Burlington VT | 1a | 20,500 | Anabaena, Microcystis | <0.16 | <0.5 |
| 8/27/2013 | North Beach, Burlington VT | 1a | 280 | Anabaena | 0.17 | <0.5 |
| 9/3/2013 | North Beach, Burlington VT | 1a | 4530 | Anabaena, Aphanothece | < 0.16 | <0.5 |
| 6/24/2013 | North Hero State Park, VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/1/2013 | North Hero State Park, VT | 1b | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/8/2013 | North Hero State Park, VT | 1b | 0 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| 7/15/2013 | North Hero State Park, VT | 1a | 1240 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| 7/22/2013 | North Hero State Park, VT | 1c | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/29/2013 | North Hero State Park, VT | 1a | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| 8/5/2013 | North Hero State Park, VT | 1b | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 8/12/2013 | North Hero State Park, VT | 1a | 0 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| 8/26/2013 | North Hero State Park, VT | 1a | 0 | no cyanobacteria observed | 0.16 | <0.5 |
| 9/3/2013 | North Hero State Park, VT | 1a | 0 | possible Phormidium | < 0.16 | <0.5 |
| 6/24/2013 | Red Rocks Beach, S. Burlington VT | 1c | 7200 | Anabaena, Aphanizomenon | <0.16 | <0.5 |
| 7/1/2013 | Red Rocks Beach, S. Burlington VT | 1a | 884 | Anabaena | <0.16 | <0.5 |
| 7/8/2013 | Red Rocks Beach, S. Burlington VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/15/2013 | Red Rocks Beach, S. Burlington VT | 1a | 93 | Anabaena | < 0.16 | <0.5 |
| 7/22/2013 | Red Rocks Beach, S. Burlington VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 7/29/2013 | Red Rocks Beach, S. Burlington VT | 1a | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| 8/5/2013 | Red Rocks Beach, S. Burlington VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |

| Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|-------------|-----------------------------------|---------------|---|---|-------------------------------------|-----------------|
| 8/12/2013 | Red Rocks Beach, S. Burlington VT | 1b | 0 | Anabaena | <0.16 | <0.5 |
| 8/19/2013 | Red Rocks Beach, S. Burlington VT | 1b | 993 | anabaena | <0.16 | <0.5 |
| 8/26/2013 | Red Rocks Beach, S. Burlington VT | 1a | 2760 | Anabaena, Aphanothece | < 0.16 | <0.5 |
| 9/2/2013 | Red Rocks Beach, S. Burlington VT | 1b | 0 | Microcystis, Oscillatoria | < 0.16 | <0.5 |
| 6/23/2013 | Shipyard, Highgate Springs VT | 1b | 0 | No cyanobacteria observed | < 0.16 | <0.5 |
| 7/7/2013 | Shipyard, Highgate Springs VT | 1a | 1550 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |
| 7/14/2013 | Shipyard, Highgate Springs VT | 1b | 3550 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| 7/21/2013 | Shipyard, Highgate Springs VT | 1b | 13,800 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| 7/28/2013 | Shipyard, Highgate Springs VT | 1b | 70,200 | Aphanizomenon, Microcystis | <0.16 | <0.5 |
| 8/4/2013 | Shipyard, Highgate Springs VT | 1b | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| 8/11/2013 | Shipyard, Highgate Springs VT | 1b | 3000 | Aphanothece | < 0.16 | <0.5 |
| 8/19/2013 | Shipyard, Highgate Springs VT | 1b | 12,400 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | <0.16 | <0.5 |
| 8/26/2013 | Shipyard, Highgate Springs VT | 2 | 170,600 | Anabaena, Aphanizomenon, Microcystis | < 0.16 | <0.5 |
| 9/1/2013 | Shipyard, Highgate Springs VT | 2 | 49,700 | Anabaena, Microcystis | 0.32 | <0.5 |

Table 13. Paired reports from stations monitored in 2013 by VDH staff as part of the CDC Climate grant.

| Waterbody | Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|----------------|-------------|------------|---------------|---|----------------------------|-------------------------------------|-----------------|
| Lake Champlain | 6/25/2013 | Alburgh VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/2/2013 | Alburgh VT | 1a | 0 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/9/2013 | Alburgh VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/16/2013 | Alburgh VT | 1a | 1450 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | 7/23/2013 | Alburgh VT | 1a | 129,200 | Aphanizomenon, Microcystis | 0.32 | <0.5 |
| Lake Champlain | 7/30/2013 | Alburgh VT | 1c | 23,600 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | 8/6/2013 | Alburgh VT | 1a | 0 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |

| Waterbody | Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|----------------|-------------|--|---------------|---|---|-------------------------------------|-----------------|
| Lake Champlain | 8/13/2013 | Alburgh VT | 1c | 7090 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | 8/20/2013 | Alburgh VT | 1b | 12,100 | Aphanizomenon, Aphanothece, Microcystis | < 0.16 | <0.5 |
| Lake Champlain | 8/27/2013 | Alburgh VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 9/3/2013 | Alburgh VT | 1a | 0 | Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | 6/25/2013 | Arnold Bay, Panton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/2/2013 | Arnold Bay, Panton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/9/2013 | Arnold Bay, Panton VT | 1a | 2370 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/16/2013 | Arnold Bay, Panton VT | 1a | 4170 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/23/2013 | Arnold Bay, Panton VT | 1a | 80 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | 7/30/2013 | Arnold Bay, Panton VT | 1c | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Champlain | 8/6/2013 | Arnold Bay, Panton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/13/2013 | Arnold Bay, Panton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/20/2013 | Arnold Bay, Panton VT | 1c | 3180 | anabaena | < 0.16 | <0.5 |
| Lake Champlain | 8/27/2013 | Arnold Bay, Panton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 9/3/2013 | Arnold Bay, Panton VT | 1a | 0 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | 6/25/2013 | Boat Launch, North End Road, North Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/2/2013 | Boat Launch, North End Road, North Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/9/2013 | Boat Launch, North End Road, North Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/16/2013 | Boat Launch, North End Road, North Hero VT | 1a | 333 | Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | 7/23/2013 | Boat Launch, North End Road, North Hero VT | 1b | 40 | Anabaena, Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | 7/30/2013 | Boat Launch, North End Road, North Hero VT | 1c | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | 8/6/2013 | Boat Launch, North End Road, North Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/13/2013 | Boat Launch, North End Road, North Hero VT | 1b | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/20/2013 | Boat Launch, North End Road, North Hero VT | 1c | 0 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Champlain | 8/27/2013 | Boat Launch, North End Road, North Hero VT | 1a | 34,300 | Anabaena, Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | 9/3/2013 | Boat Launch, North End Road, North Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 6/25/2013 | Keeler Bay, South Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |

| Waterbody | Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|----------------|-------------|--------------------------------|---------------|---|------------------------------|-------------------------------------|-----------------|
| Lake Champlain | 7/9/2013 | Keeler Bay, South Hero VT | 1c | 3270 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/16/2013 | Keeler Bay, South Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/23/2013 | Keeler Bay, South Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/30/2013 | Keeler Bay, South Hero VT | 1b | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | 8/6/2013 | Keeler Bay, South Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/13/2013 | Keeler Bay, South Hero VT | 1c | 0 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | 8/20/2013 | Keeler Bay, South Hero VT | 1a | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | 8/27/2013 | Keeler Bay, South Hero VT | 1a | 3070 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 9/3/2013 | Keeler Bay, South Hero VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 6/25/2013 | Maquam Shore Road, Swanton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/9/2013 | Maquam Shore Road, Swanton VT | 1a | 0 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/16/2013 | Maquam Shore Road, Swanton VT | 1a | 0 | small piece of Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | 7/23/2013 | Maquam Shore Road, Swanton VT | 1b | 267 | Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | 7/30/2013 | Maquam Shore Road, Swanton VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/6/2013 | Maquam Shore Road, Swanton VT | 1b | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/13/2013 | Maquam Shore Road, Swanton VT | 1c | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/20/2013 | Maquam Shore Road, Swanton VT | 1c | 898 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Champlain | 8/27/2013 | Maquam Shore Road, Swanton VT | 1a | 0 | Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | 9/3/2013 | Maquam Shore Road, Swanton VT | 1b | 0 | no cyanobacteria observed | 0.43 | <0.5 |
| Lake Champlain | 6/25/2013 | Tri Town Road, West Addison VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/2/2013 | Tri Town Road, West Addison VT | 2 | 361,900 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/9/2013 | Tri Town Road, West Addison VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 7/16/2013 | Tri Town Road, West Addison VT | 1c | 1920 | Woronichinia/Coelosphaerium | <0.16 | <0.5 |
| Lake Champlain | 7/23/2013 | Tri Town Road, West Addison VT | 1a | 172 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | 7/30/2013 | Tri Town Road, West Addison VT | 1a | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | 8/6/2013 | Tri Town Road, West Addison VT | 1a | 0 | Anabaena, Microcystis | < 0.16 | <0.5 |
| Lake Champlain | 8/13/2013 | Tri Town Road, West Addison VT | 1a | 699 | Anabaena, aphanizomenon | < 0.16 | <0.5 |

| Waterbody | Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|----------------|-------------|--------------------------------|---------------|---|---|-------------------------------------|-----------------|
| Lake Champlain | 8/20/2013 | Tri Town Road, West Addison VT | 1a | 2560 | Aphanizomenon | <0.16 | <0.5 |
| Lake Champlain | 8/27/2013 | Tri Town Road, West Addison VT | 1a | 1400 | Anabaena | 0.16 | <0.5 |
| Lake Champlain | 9/3/2013 | Tri Town Road, West Addison VT | 1a | 686 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Carmi | 6/26/2013 | Carmi State Park VT (beach) | 1a | 787 | Aphanothece, Woronichinia/Coelosphaerium | <0.16 | <0.5 |
| Lake Carmi | 7/3/2013 | Carmi State Park VT (beach) | 1b | 320 | Aphanothece | < 0.16 | <0.5 |
| Lake Carmi | 7/10/2013 | Carmi State Park VT (beach) | 1b | 5030 | Aphanothece, Microcystis | < 0.16 | <0.5 |
| Lake Carmi | 7/17/2013 | Carmi State Park VT (beach) | 1a | 3480 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Carmi | 7/24/2013 | Carmi State Park VT (beach) | 1b | 1940 | Anabaena, Aphanizomenon, Aphanothece, Gloeotrichia | < 0.16 | <0.5 |
| Lake Carmi | 7/31/2013 | Carmi State Park VT (beach) | 1c | 2220 | Anabaena, Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Carmi | 8/7/2013 | Carmi State Park VT (beach) | 1c | 72,800 | Anabaena, Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Carmi | 8/14/2013 | Carmi State Park VT (beach) | 1b | 16,400 | Aphanizomenon, Woronichinia/Coelosphaerium | < 0.16 | <0.5 |
| Lake Carmi | 8/21/2013 | Carmi State Park VT (beach) | 1a | 13,300 | Aphanizomenon, Woronichinia/Coelosphaerium | 0.19 | <0.5 |
| Lake Carmi | 8/28/2013 | Carmi State Park VT (beach) | 1a | 6610 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | 0.21 | <0.5 |
| Lake Carmi | 9/5/2013 | Carmi State Park VT (beach) | 1a | 12,000 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | < 0.16 | <0.5 |
| Lake Elmore | 6/26/2013 | Elmore State Park VT (beach) | 1a | 93 | Anabaena | <0.16 | < 0.5 |
| Lake Elmore | 7/3/2013 | Elmore State Park VT (beach) | 1a | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Elmore | 7/10/2013 | Elmore State Park VT (beach) | 1b | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Elmore | 7/17/2013 | Elmore State Park VT (beach) | 1a | 5930 | Anabaena, Aphanothece | <0.16 | < 0.5 |
| Lake Elmore | 7/24/2013 | Elmore State Park VT (beach) | 1a | 2950 | Aphanothece, Coelosphaerium | <0.16 | < 0.5 |
| Lake Elmore | 7/31/2013 | Elmore State Park VT (beach) | 1a | 5240 | Aphanizomenon, Aphanothece, Coelosphaerium | <0.16 | < 0.5 |
| Lake Elmore | 8/7/2013 | Elmore State Park VT (beach) | 1b | 3220 | Anabaena, Aphanizomenon, Aphanothece | <0.16 | < 0.5 |
| Lake Elmore | 8/14/2013 | Elmore State Park VT (beach) | 1a | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Elmore | 8/21/2013 | Elmore State Park VT (beach) | 1a | 198 | Anabaena | <0.16 | < 0.5 |
| Lake Elmore | 8/28/2013 | Elmore State Park VT (beach) | 1a | 747 | possible Phormidium | <0.16 | < 0.5 |

| Waterbody | Report Date | Station | Visual Report | Density of Potentially Toxic Cyano (cells/mL) | Cyanobacteria Taxa Present | Microcystin – LR equivalents (µg/L) | Anatoxin (µg/L) |
|-------------------|-------------|--|---------------|---|---------------------------------------|-------------------------------------|-----------------|
| Lake Elmore | 9/5/2013 | Elmore State Park VT (beach) | 1a | 2950 | possible Phormidium, Aphanothece | <0.16 | < 0.5 |
| Lake Iroquois | 6/26/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1a | 1680 | Anabaena | <0.16 | <0.5 |
| Lake Iroquois | 7/3/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1a | 1680 | Aphanizomenon, Oscillatoria | < 0.16 | <0.5 |
| Lake Iroquois | 7/10/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 17,800 | Anabaena, Coelosphaerium | < 0.16 | <0.5 |
| Lake Iroquois | 7/17/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 53 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | 7/24/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 200 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | 7/31/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 587 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | 8/7/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 10,900 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |
| Lake Iroquois | 8/14/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 200 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | 8/21/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | 29,300 | Anabaena, Coelosphaerium, Microcystis | <0.16 | <0.5 |
| Lake Iroquois | 8/28/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1a | 142 | Anabaena | < 0.16 | <0.5 |
| Lake Memphremagog | 6/26/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | 7/3/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 307 | Aphanizomenon | <0.16 | <0.5 |
| Lake Memphremagog | 7/10/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | 7/17/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | 7/24/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | 7/31/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 160 | Aphanizomenon | <0.16 | <0.5 |
| Lake Memphremagog | 8/7/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 600 | Anabaena | <0.16 | <0.5 |
| Lake Memphremagog | 8/21/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1c | 0 | Coelosphaerium | <0.16 | <0.5 |
| Lake Memphremagog | 8/28/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 3470 | Woronichinia/Coelosphaerium | <0.16 | <0.5 |
| Lake Memphremagog | 9/5/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | 0 | Woronichinia/Coelosphaerium | <0.16 | <0.5 |

Cyanobacteria conditions on the four inland lakes

As noted above, the use of the visual assessment protocol was effective on the four inland lakes and offered educational opportunities as VDH staff connected with local recreational staff each week during their assessment activities. No new cyanobacteria taxa were noted on the inland lakes though Lake Elmore was unusual in that *Aphanothece* spp. was a common component of the plankton.

Median cell densities of the four inland lakes and the Champlain samples collected as part of the CDC climate change grant are presented in Figure 2. Cyanobacteria densities in the inland lakes were similar to those observed around Lake Champlain. Microcystin was detected at low concentrations (0.19 and 0.21 µg/L) on two dates in Lake Carmi, information that will be factored into response to future cyanobacteria blooms on this lake.

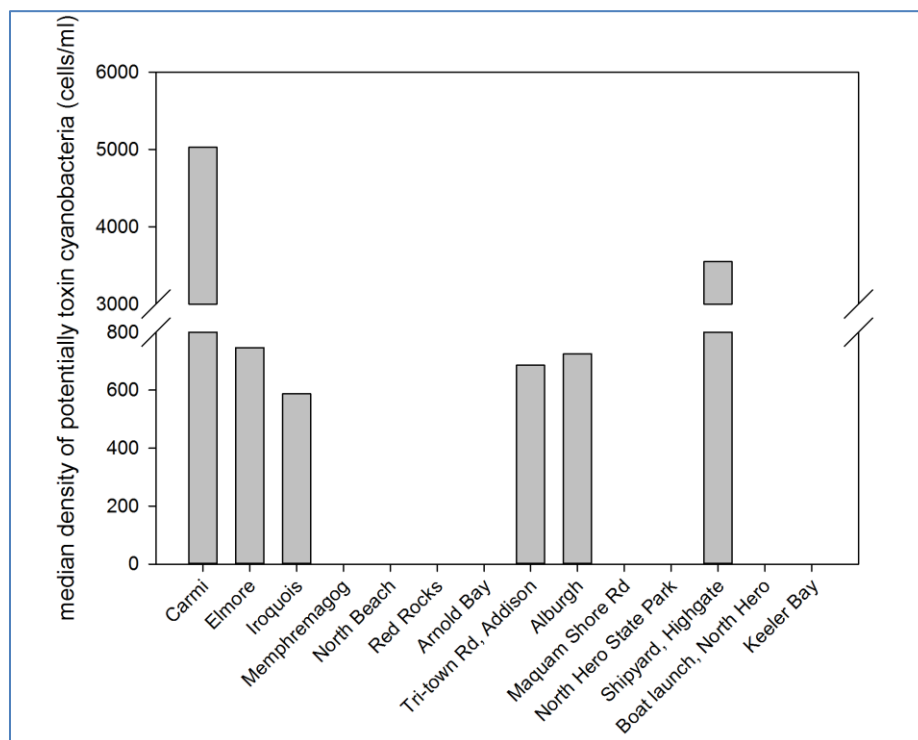


Figure 2. Median density of potentially toxic cyanobacteria in VDH Climate Grant samples collected on Lake Champlain and four selected inland lakes, 2013.

Blooms have been reported in the past from Iroquois, Tri-town and Alburgh in the past. There had been no previous data on phytoplankton associated with Lake Elmore so the 2013 sampling provided new information. Lake Memphremagog had few cyanobacteria present during 2013, though blooms have also been reported here in the past. Lake Memphremagog does have a group of trained volunteer

monitors who share information with the VDH and town recreational officials when cyanobacteria are observed. All the CDC Climate Change sites will be sampled again in 2014.

Alignment of the reporting approach regarding visible cyanobacteria scum

The presence of cyanobacteria scum and/or visibly discolored water is an indicator of risk to human health because of the potential for elevated concentrations of cyanotoxins when cell densities are high, including those toxins for which no testing is currently conducted. The VDH recommends closing public beaches when visible scum is present and avoiding scums wherever they are found. The tiered alert system used historically on Lake Champlain did not respond specifically to visible scum but relied on cell densities and toxin concentrations to categorize risk. With the implementation of the visual assessment protocols, the presence of visible scum or discolored water over an extended area (bloom conditions) now results in a 'high alert' notice on the VDH's website. Currently, under the tiered alert protocol, scums would be designated as 'low alert' when microcystin concentrations are less than 6 µg/L and high alert when microcystin exceeds this guideline. To better align the tiered alert protocol with VDH beach guidance and the visual protocol, scum and discolored water observed at all stations monitored in 2014 will have a status of 'high alert' regardless of the microcystin concentration observed at the site.

Overview of Champlain Cyanobacteria and Toxins since 2003

Status reports have been generated since the monitoring program's inception in 2003. Though there have been modifications to the program structure over the years, the reported recreational status (e.g. generally safe, low alert, or high alert) has been used consistently and provides a mechanism to evaluate change over time on Lake Champlain.

The number of status reports obtained each summer has increased from less than 200 during the first year of implementation to more than 800 in 2013 (Figure 3), due primarily to the implementation of the visual assessment process in 2012. In the early years of protocol development, when effort focused on areas prone to cyanobacteria blooms, 60 to 80% of the status reports documented generally safe conditions (Figure 4). Since 2007, the number of status reports indicating generally safe conditions has ranged between 80 and 95% of the total each year. This increase may be due, in part, to changes in sampling sites and the number of samples in recent years as the program has expanded beyond bloom-prone areas. However, the median cell density of potentially toxic cyanobacteria in net plankton samples collected from Missisquoi Bay has decreased since 2007 (Figure 5). This suggests that the decrease in the number of alert level reports is real, though the reason for the change cannot be identified.

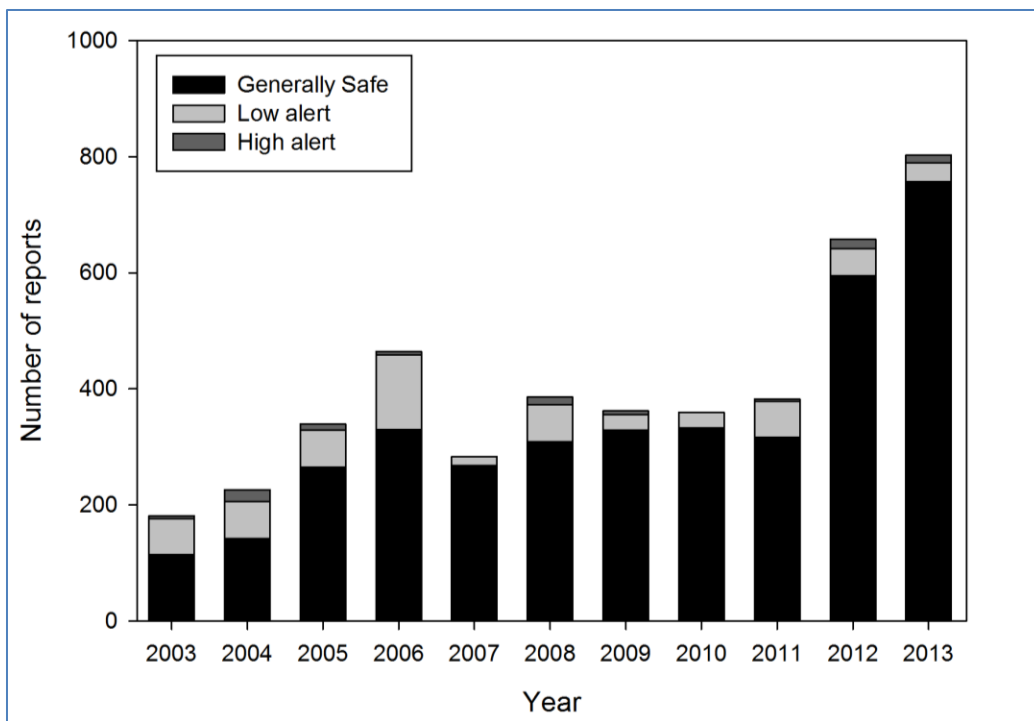


Figure 3. Number of yearly cyanobacteria status reports for Lake Champlain by category. Records prior to 2012 were determined using historical cell count and toxin data. 2012 and 2013 include records obtained using the visual assessment protocol.

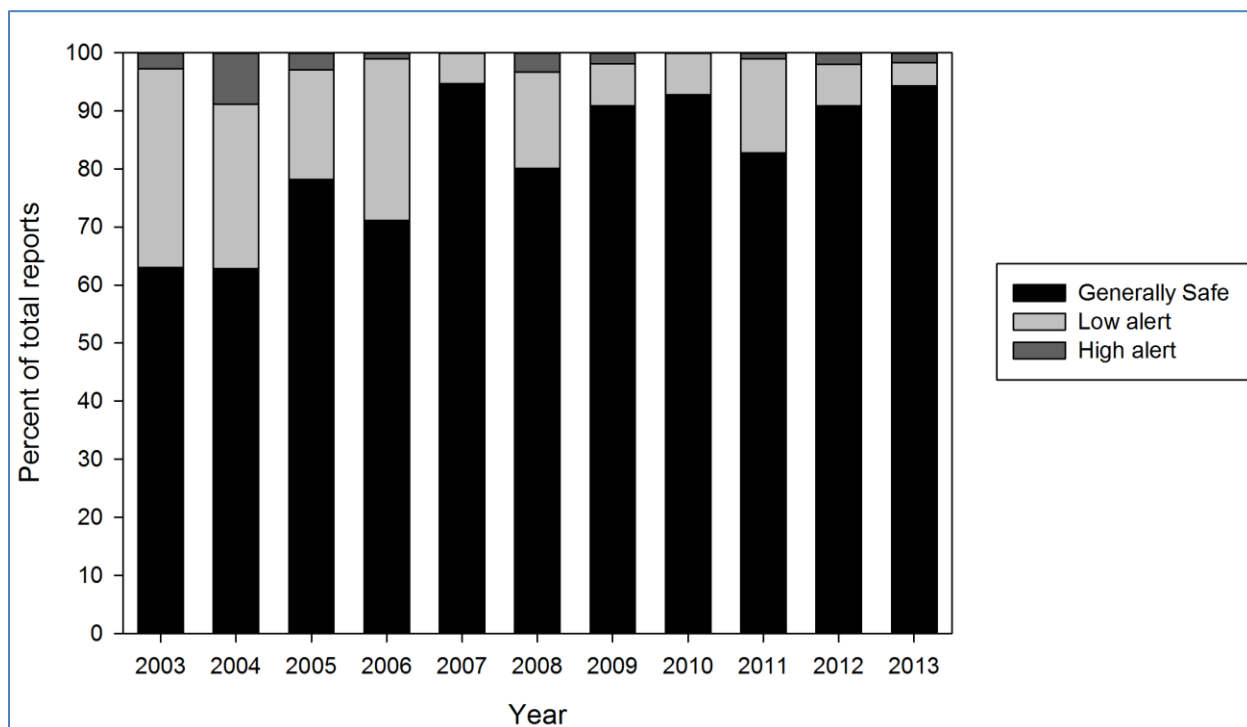


Figure 4. Percent of yearly cyanobacteria status reports for Lake Champlain by category. Records prior to 2012 were determined using historical cell count and toxin data. 2012 and 2013 include records obtained using the visual assessment protocol

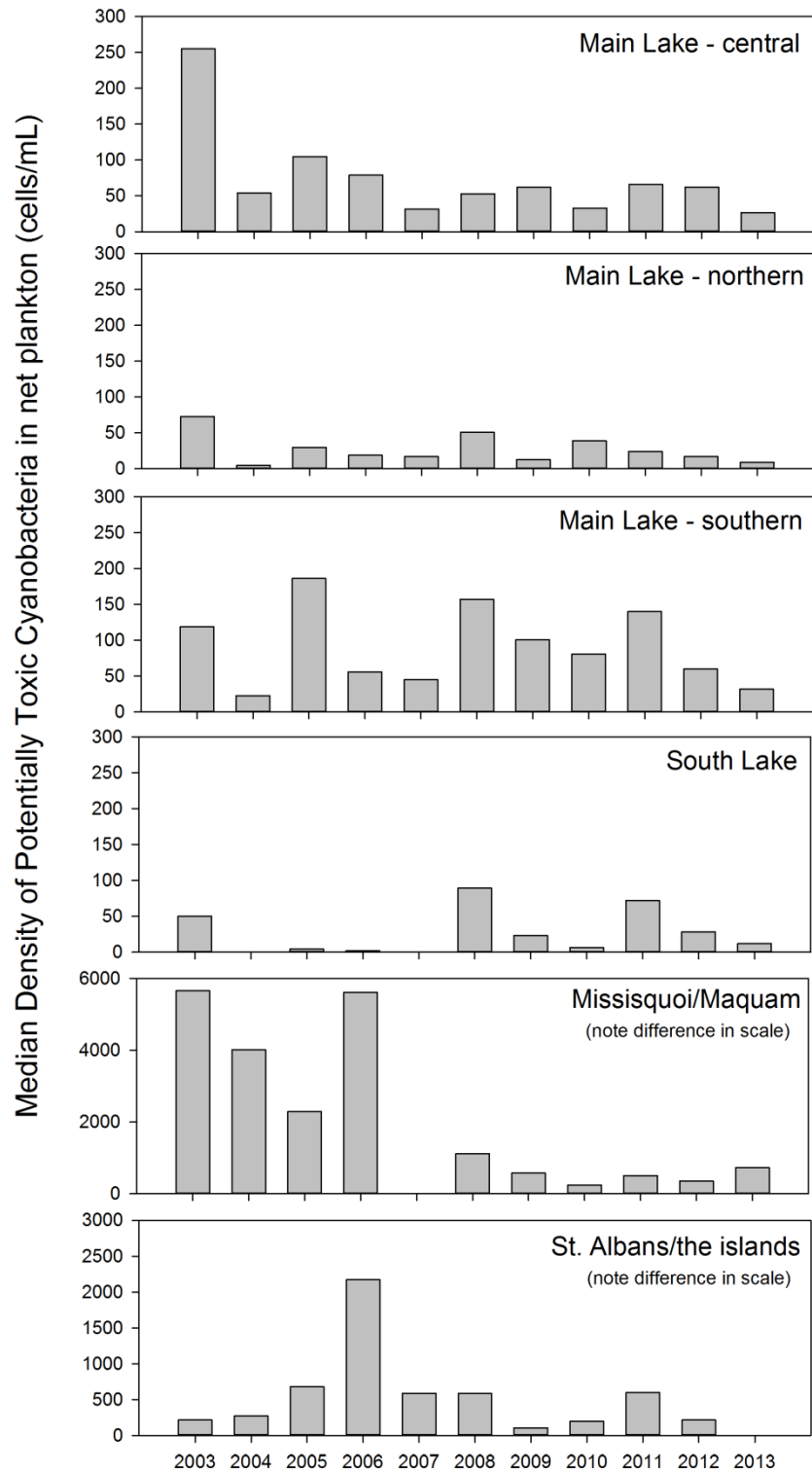


Figure 4. Cell density of potentially toxic cyanobacteria (median cells/mL) in net plankton samples collected from Lake Champlain.

The number of microcystin samples obtained on Lake Champlain has decreased in recent years, however, visible surface scums were sampled whenever they were encountered on the lake by DEC field staff. VDH staff also obtained samples for toxin analysis from visible scums reported by the public whenever possible. Because microcystin concentrations are expected to be highest in these situations, this targeted sampling increases the opportunity to capture high microcystin events. Despite targeted sampling efforts, the occurrence of microcystin concentrations exceeding Vermont's recreational guideline of 6 µg/L has been rare outside of Missisquoi Bay in recent years (Table 14).

Table 14. Microcystin concentrations in major lake segments, 2003 – 2012. Numbers of stations includes those locations monitored by the tiered alert system as well as bloom events. Data do not distinguish between net plankton and whole water samples. Data include the LCC and CDC Climate change stations, which were sampled weekly. ND = not detected. Shaded boxes = not applicable.

| Lake | Lake Region | | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | |
|-----------------------|----------------------------|---------------|----------------|---------------|--------------|--------------|--------------|--------------|--------------|---------------|-------------|-------------|------------|-----------|
| Champlain | Main Lake - northern | Median | | | | | | 1.56 | | 0.03 | 0.01 | | | |
| | | Range | | | | | | | | | | | | |
| | | #samples | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | |
| | | #stations | 3 | 3 | 6 | 7 | 6 | 7 | 5 | 5 | 6 | 3 | 3 | |
| | Main Lake - central | Median | 0.05 | | 7.42 | 0.04 | 2.82 | 0.47 | 0.03 | 0.08 | 0.02 | 0.13 | ND | |
| | | Range | 0.01 – 0.12 | | 6.04 – 8.80 | 0.04 – 3.47 | 0.02 – 5.61 | 0.03 – 1.49 | 0.03 – 23.36 | 0.02 – 0.14 | 0.01 – 0.04 | ND – 0.64 | ND – 0.17 | |
| | | #samples | 19 | 0 | 2 | 8 | 2 | 3 | 6 | 7 | 6 | 23 | 24 | |
| | | #stations | 10 | 9 | 10 | 15 | 13 | 9 | 11 | 10 | 10 | 7 | 7 | |
| | Main Lake - southern | Median | 0.07 | | 0.04 | | | | | | 0.13 | 0.01 | | ND |
| | | Range | | | <0.01 – 0.07 | | | | | | | | | ND - 0.33 |
| | | #samples | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 22 | |
| | | #stations | 3 | 3 | 7 | 4 | 3 | 4 | 3 | 7 | 4 | 2 | 4 | |
| | South Lake | Median | 0.96 | | 0.01 | | | | | | | 0.02 | | |
| | | Range | 0.53 – 1.38 | | | | | | | | | | | |
| | | #samples | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | | #stations | 3 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | |
| | St. Albans Bay/the islands | Median | 0.05 | 0.05 | 0.13 | 0.08 | 0.05 | 0.04 | 0.03 | 0.09 | 0.04 | 0.03 | ND | |
| | | Range | 0.01 – 0.41 | <0.01 – 22.48 | 0.01 – 0.82 | 0.01 – 42.14 | 0.02 – 0.54 | 0.02 – 22.50 | 0.01 – 0.17 | 0.01 – 0.80 | 0.02 – 0.82 | 0.03 – 0.04 | ND – 0.062 | |
| | | #samples | 32 | 30 | 23 | 46 | 23 | 11 | 7 | 11 | 18 | 3 | 14 | |
| | | #stations | 5 | 5 | 8 | 11 | 12 | 11 | 10 | 9 | 10 | 3 | 5 | |
| Missisquoi Bay/Maquam | Median | 0.09 | 0.77 | 0.64 | 0.50 | 0.05 | 2.26 | 0.54 | 0.03 | 0.52 | 0.99 | ND | | |
| | Range | <0.01 – 23.91 | 0.01 – 6490.06 | <0.01 – 22.11 | 0.01 – 21.29 | | 0.03 – 94.58 | 0.03 – 54.16 | 0.01 – 0.12 | 0.01 – 180.82 | ND – 54.76 | ND – 0.43 | | |
| | #samples | 348 | 237 | 149 | 159 | 1 | 91 | 29 | 12 | 64 | 51 | 52 | | |
| | #stations | 17 | 15 | 16 | 17 | 14 | 15 | 14 | 13 | 13 | 9 | 7 | | |

Overall Assessment of Cyanobacteria on Lake Champlain and Selected Vermont Lakes

Cyanobacteria are routinely documented in phytoplankton samples collected around Lake Champlain by this program and others, including taxa that have the ability to produce a variety of cyanotoxins. They are a natural component of the ecosystem, one that has the potential to affect human and animal health. The goal of this monitoring effort is to provide public health officials and the general public with information they need to make decisions regarding recreational activities on the lake and the condition of raw drinking water sources, in a fiscally sustainable program.

It is not possible to 'know' the algal conditions occurring around a lake at every location and point in time. Nor can the program test for every possible cyanotoxin that might be present in a particular algal population. It does, however, provide valuable data to inform the decision-making process used by public health officials when cyanobacteria blooms are reported as well as water quality management efforts by Agency of Natural Resources and its partners. It also provides an important vehicle to increase awareness of cyanobacteria around Vermont and provide the public with the tools they need to assess water conditions wherever they happen to be. With the additional funding provided by the CDC in 2013, this type of information is now available for several other Vermont lakes in addition to Champlain.

The data collected in 2013 continues to support the observation that potentially toxic cyanobacteria, though present throughout Champlain, are typically at levels considered safe for recreation. More than 90% of the reports from Lake Champlain and 100% of those from the inland lake returned an assessment of generally safe in 2013. No reports of illness in people or animals were received.

Cyanobacteria blooms do occur on Lake Champlain, as well as other lakes in the region, and some of the Champlain blooms have produced microcystin concentrations above the Vermont recreational guideline of 6µg/L in the past. In addition to producing microcystin and other toxins for which no routine testing is conducted, cyanobacteria have been linked to both short-term and long-term illnesses (World Health Organization 2003, Levesque *et al* 2013). Because of these health concerns, it is important to reduce the risk of exposure to high densities of cyanobacteria.

Cyanobacteria play an important role in aquatic ecosystems. Elimination is neither prudent, nor possible. Research into the environmental conditions that encourage dense cyanobacteria blooms and the production of toxins is on-going, but has shown that there is a link between increasing concentrations of nutrients like phosphorus and the frequency of blooms (Paerl and Otten 2013). Reducing the amount of phosphorus reaching surface waters and subsequently stored in lakes offers the best option for reducing the frequency and intensity of algal blooms. By providing data on algal conditions and guidance in recognizing conditions of highest concern, the Champlain monitoring program assists water users in reducing the risk of serious exposure as on-going management of nutrients works to reduce the number of cyanobacteria blooms.

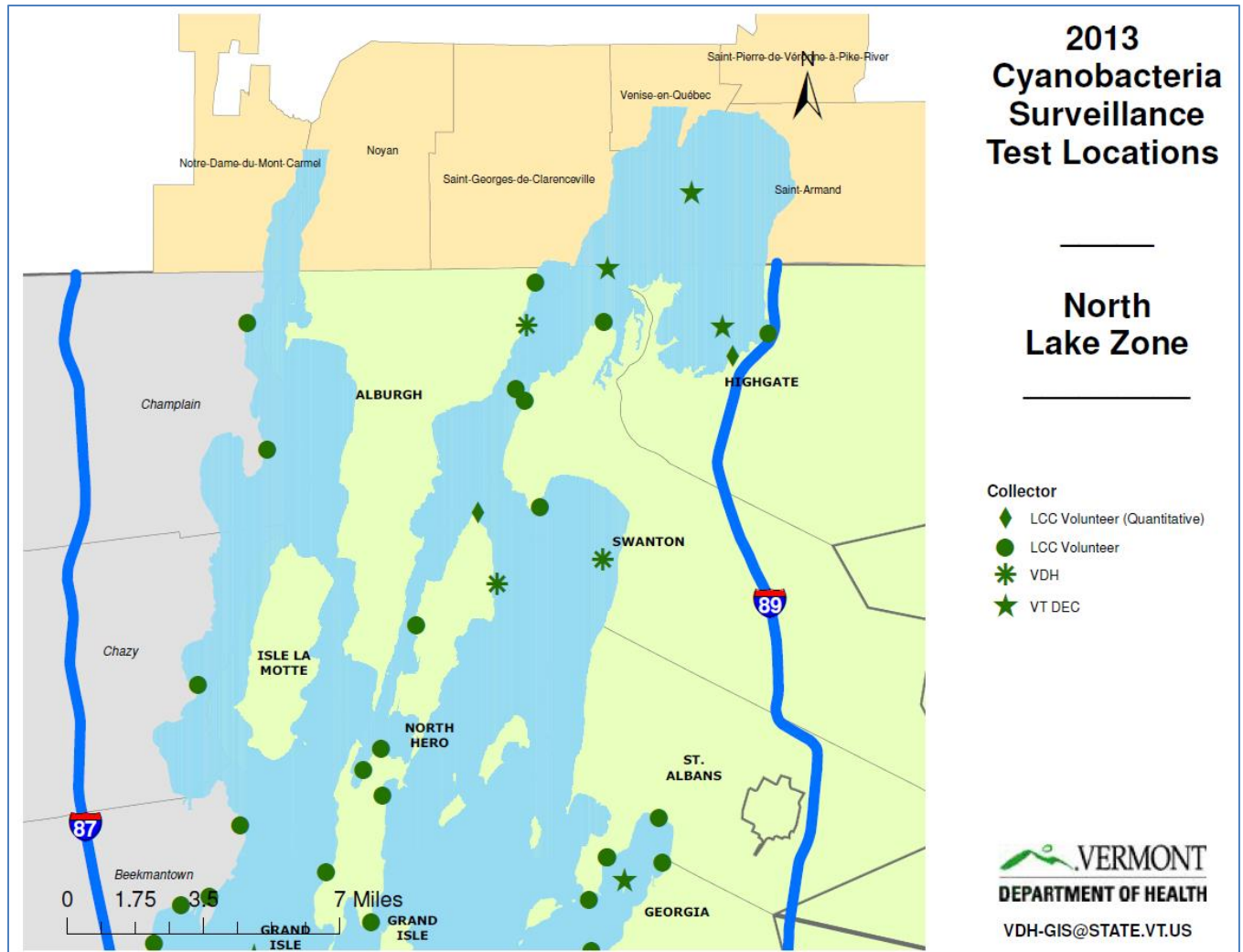
Acknowledgements

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Appendix A - 2013 Sampling locations

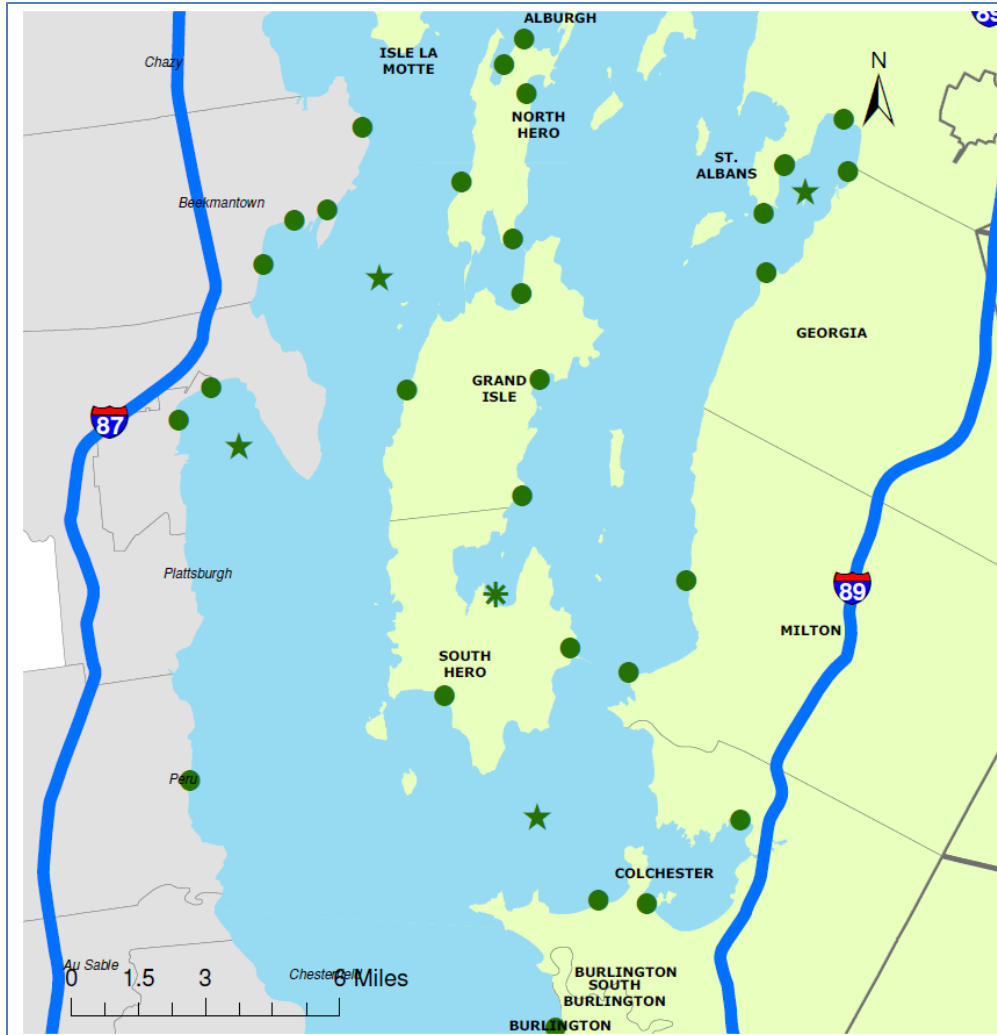


2013 Cyanobacteria Surveillance Test Locations

Central North Lake Zone

Collector

- ◆ LCC Volunteer (Quantitative)
- LCC Volunteer
- * VDH
- ★ VT DEC




VERMONT
DEPARTMENT OF HEALTH
 VDH-GIS@STATE.VT.US

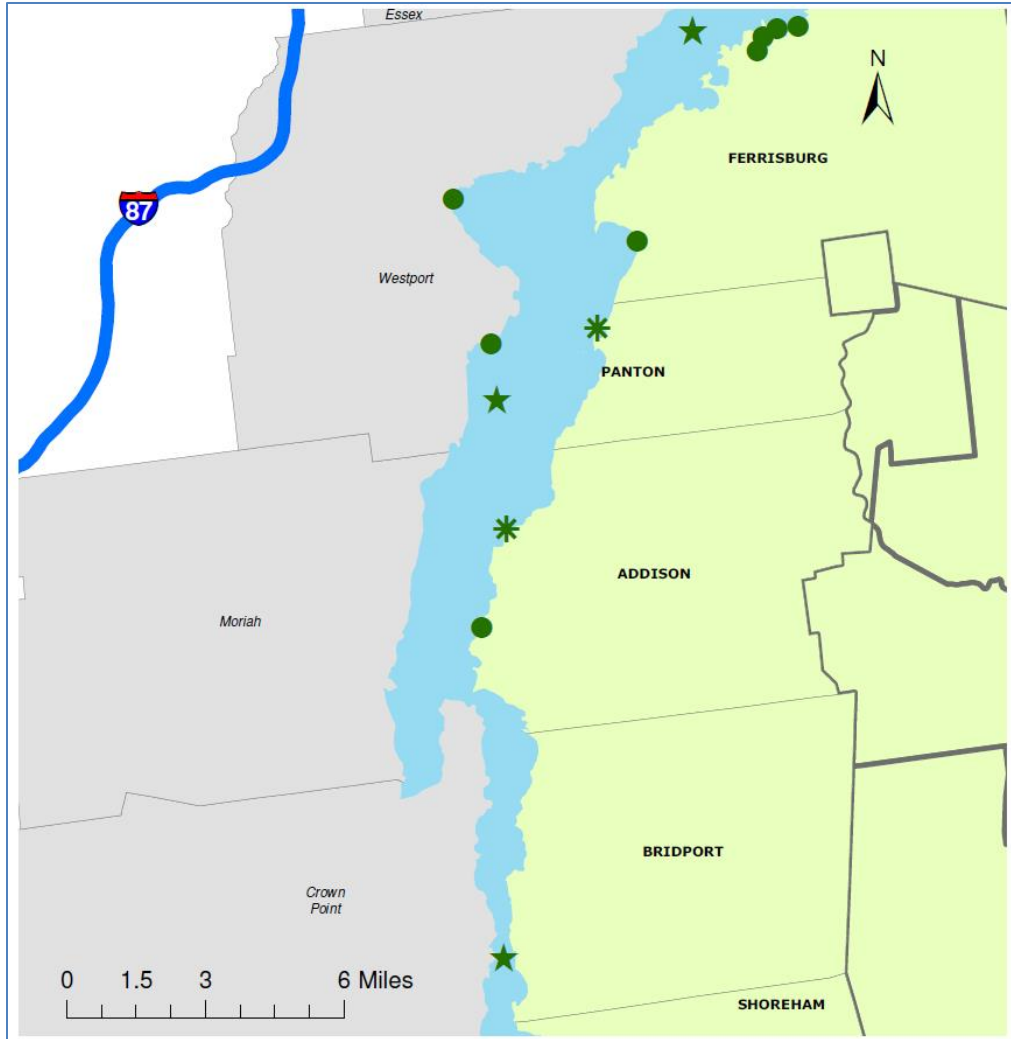


2013 Cyanobacteria Surveillance Test Locations

Central Lake Zone

- Collector
- ◆ LCC Volunteer (Quantitative)
 - LCC Volunteer
 - * VDH
 - ★ VT DEC

 VERMONT
DEPARTMENT OF HEALTH
VDH-GIS@STATE.VT.US

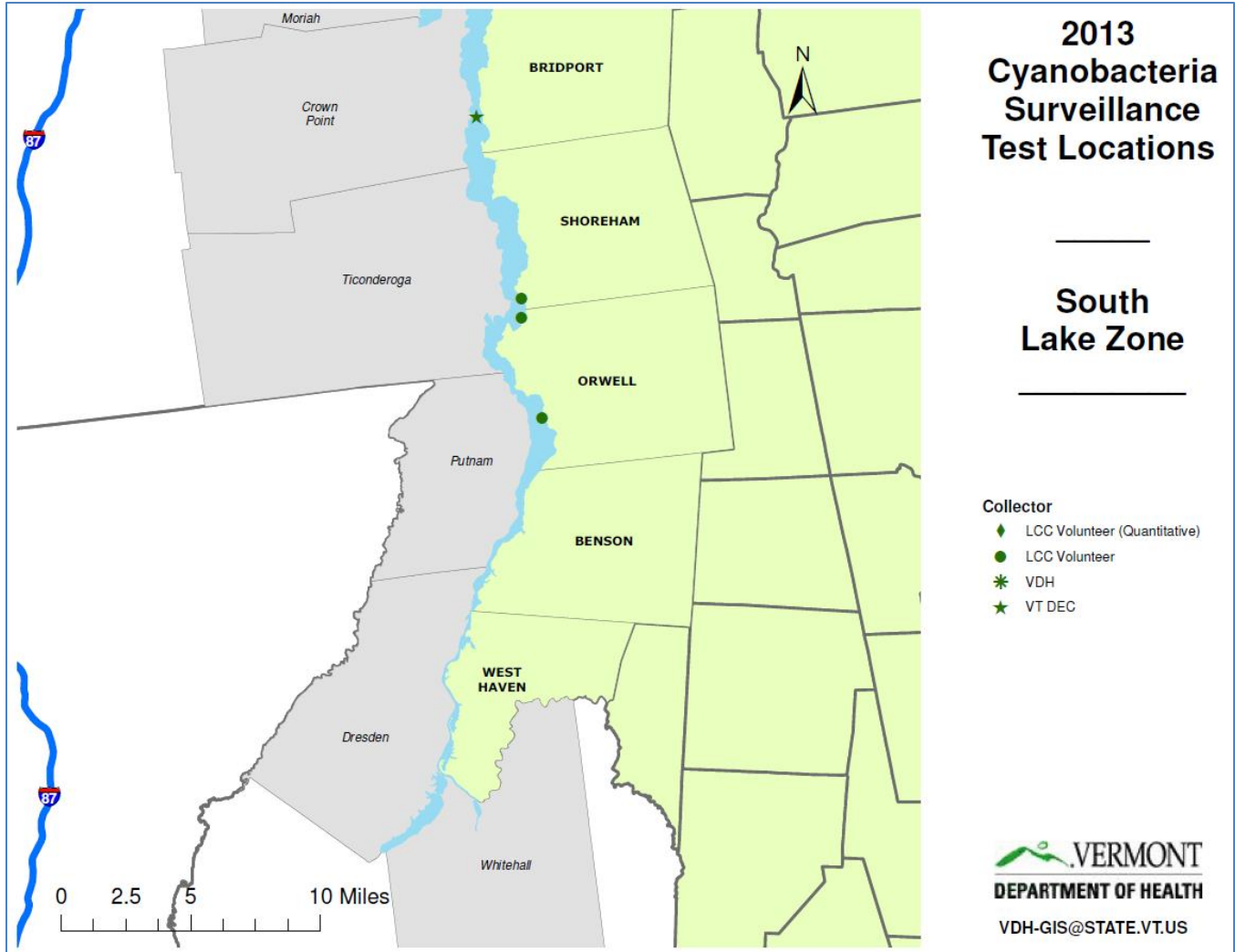


2013 Cyanobacteria Surveillance Test Locations

Central South Lake Zone

- Collector**
- ◆ LCC Volunteer (Quantitative)
 - LCC Volunteer
 - * VDH
 - ★ VT DEC

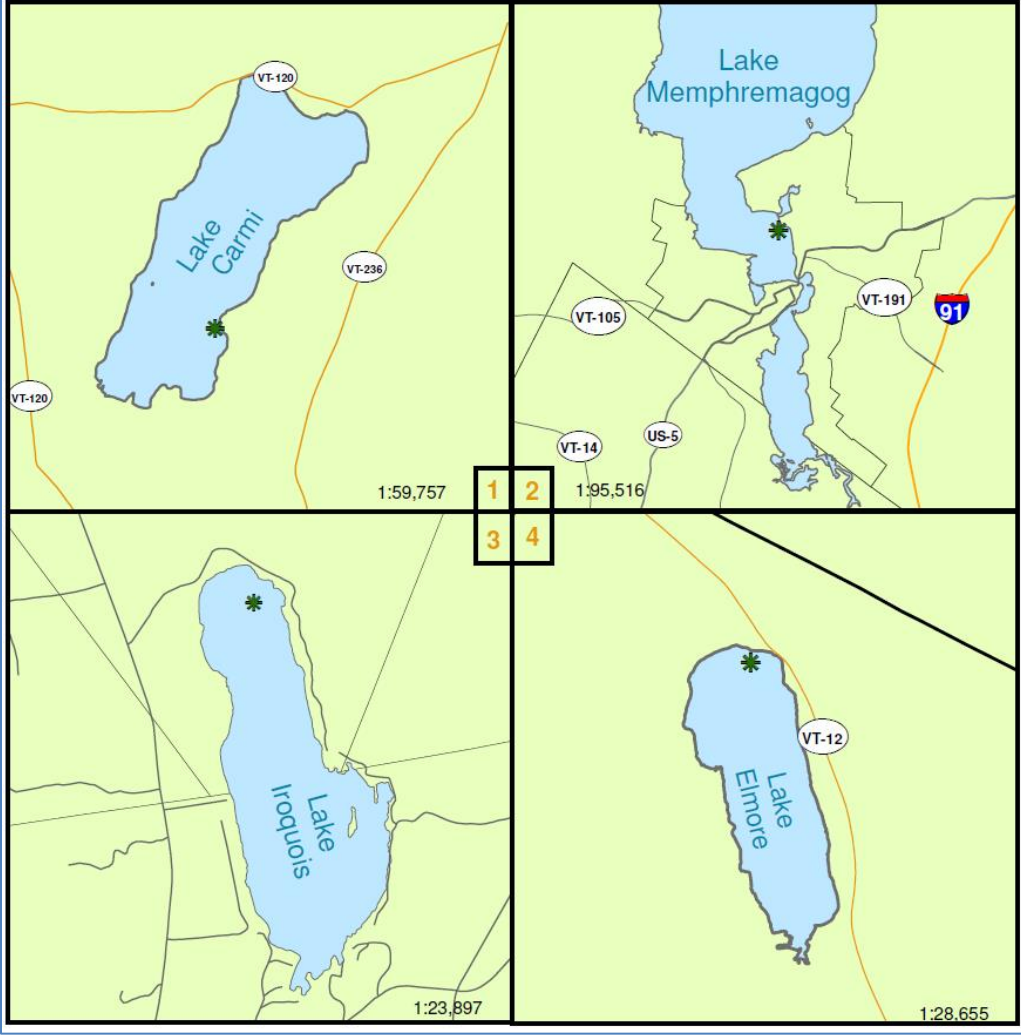
 **VERMONT**
DEPARTMENT OF HEALTH
VDH-GIS@STATE.VT.US



2013 Cyanobacteria Surveillance Test Locations

Inland Lakes

Areas of Detail



* VDH Sampling Location

VERMONT
DEPARTMENT OF HEALTH
VDH-GIS@STATE.VT.US

| Lake | Region | ReportLocationName | Collector | Latitude | Longitude |
|-----------|----------------------|---|---------------|-------------|--------------|
| Champlain | Main Lake - central | Beggs Park Beach, Essex NY | LCC volunteer | 44.30843333 | -73.34865 |
| Champlain | Main Lake - central | Boat Launch, Lake St., Burlington VT | VT DEC | 44.48 | -73.23139 |
| Champlain | Main Lake - central | Boat Launch, Willsboro Bay NY | LCC volunteer | 44.400276 | -73.39031 |
| Champlain | Main Lake - central | Buena Vista Park, Willsboro NY | LCC volunteer | 44.404247 | -73.374792 |
| Champlain | Main Lake - central | Community Sailing Center, Burlington VT | LCC volunteer | 44.48216919 | -73.22484969 |
| Champlain | Main Lake - central | Fish and Wildlife Access, Malletts Bay, Colchester VT | LCC volunteer | 44.55319798 | -73.23133172 |
| Champlain | Main Lake - central | LaPlatte River mouth, Shelburne Bay VT | LCC volunteer | 44.399878 | -73.234878 |
| Champlain | Main Lake - central | Leddy Park, Burlington VT | LCC volunteer | 44.501831 | -73.252723 |
| Champlain | Main Lake - central | LTM 16 | VT DEC | 44.42583333 | -73.232 |
| Champlain | Main Lake - central | LTM 19 | VT DEC | 44.471 | -73.29916667 |
| Champlain | Main Lake - central | LTM 21 | VT DEC | 44.47483333 | -73.23166667 |
| Champlain | Main Lake - central | LTM 25 | VT DEC | 44.582 | -73.28116667 |
| Champlain | Main Lake - central | Niquette Bay State Park VT | LCC volunteer | 44.58203333 | -73.18863333 |
| Champlain | Main Lake - central | North Beach, Burlington VT | LCC volunteer | 44.492 | -73.23983333 |
| Champlain | Main Lake - central | Oakledge Park (Blanchard Beach), Burlington VT | LCC volunteer | 44.456682 | -73.224932 |
| Champlain | Main Lake - central | Oakledge Park (Oakledge Cove), Burlington VT | LCC volunteer | 44.454247 | -73.228943 |
| Champlain | Main Lake - central | Oakledge Park (rocky shoreline), Burlington VT | LCC volunteer | 44.456222 | -73.226906 |
| Champlain | Main Lake - central | Red Rocks Beach, S. Burlington VT | LCC volunteer | 44.442746 | -73.224436 |
| Champlain | Main Lake - Central | Rosetti Park, Colchester VT | LCC volunteer | 44.55505385 | -73.2528022 |
| Champlain | Main Lake - central | Starr Farm Beach, Burlington VT | LCC volunteer | 44.51346315 | -73.27105944 |
| Champlain | Main Lake - central | Teddy Bear Point Cove, Willsboro NY | LCC volunteer | 44.442819 | -73.375801 |
| Champlain | Main Lake - central | Town Beach, Charlotte VT | LCC volunteer | 44.334347 | -73.281569 |
| Champlain | Main Lake - central | Town Beach, Shelburne VT | LCC volunteer | 44.362918 | -73.266281 |
| Champlain | Main Lake - central | Town Boat Launch, Willsboro NY | LCC volunteer | 44.400276 | -73.39031 |
| Champlain | Main Lake - central | Town Farm Bay, Charlotte VT | LCC volunteer | 44.26985937 | -73.28857189 |
| Champlain | Main Lake - northern | City Beach, Plattsburgh NY | LCC volunteer | 44.720759 | -73.431602 |
| Champlain | Main Lake - northern | Eagle Acres Rd, Chazy NY | LCC volunteer | 44.856553 | -73.387495 |
| Champlain | Main Lake - northern | LTM 33 | VT DEC | 44.70116667 | -73.41816667 |
| Champlain | Main Lake - northern | LTM 36 | VT DEC | 44.75616667 | -73.355 |

| | | | | | |
|-----------|-----------------------|---|---------------|-------------|--------------|
| Champlain | Main Lake - northern | LTM 46 | VT DEC | 44.94833333 | -73.34 |
| Champlain | Main Lake - northern | Pt Au Roche State Park, NY (beach) | LCC volunteer | 44.775138 | -73.395166 |
| Champlain | Main Lake - northern | Pt Au Roche State Park, NY (Deep Bay) | LCC volunteer | 44.778661 | -73.378093 |
| Champlain | Main Lake - northern | Pt. Au Roche State Park, NY (boat launch) | LCC volunteer | 44.80501928 | -73.36275089 |
| Champlain | Main Lake - northern | Rouses Pt, NY | LCC volunteer | 44.991516 | -73.363529 |
| Champlain | Main Lake - northern | Treadswell Bay, Beekmantown NY | LCC volunteer | 44.760143 | -73.409489 |
| Champlain | Main Lake - northern | Wilcox Dock, Plattsburgh NY | LCC volunteer | 44.708179 | -73.443938 |
| Champlain | Main Lake - southern | Arnold Bay, VT | VDH | 44.14938 | -73.36733 |
| Champlain | Main Lake - southern | Boat launch, Button Bay State Park VT | LCC volunteer | 44.17688 | -73.351085 |
| Champlain | Main Lake - southern | Camp Dudley, Westport NY | LCC volunteer | 44.144877 | -73.416365 |
| Champlain | Main Lake - southern | Camp Greylock, Ferrisburgh VT | LCC volunteer | 44.2425933 | -73.29284769 |
| Champlain | Main Lake - southern | DAR State Park VT | LCC volunteer | 44.054439 | -73.416831 |
| Champlain | Main Lake - southern | Hawkins Bay, VT | LCC volunteer | 44.2438179 | -73.28488994 |
| Champlain | Main Lake - southern | Kingsland Bay State Park VT | LCC volunteer | 44.24071 | -73.297527 |
| Champlain | Main Lake - southern | Long Point, VT | LCC volunteer | 44.256623 | -73.283074 |
| Champlain | Main Lake - southern | LTM 07 | VT DEC | 44.126 | -73.41283333 |
| Champlain | Main Lake - southern | LTM 09 | VT DEC | 44.24216667 | -73.32916667 |
| Champlain | Main Lake - southern | Town Beach, Ferrisburgh VT | LCC volunteer | 44.23485656 | -73.30080655 |
| Champlain | Main Lake - southern | Tri Town Rd, West Addison VT | VDH | 44.08445 | -73.4074 |
| Champlain | Main Lake - southern | Westport Boat Launch NY | LCC volunteer | 44.189051 | -73.434037 |
| Champlain | Missisquoi Bay/Maquam | Alburgh VT | VDH | 44.99217 | -73.21742 |
| Champlain | Missisquoi Bay/Maquam | Alburgh, VT - shoreline | UVM | 44.99217 | -73.21742 |
| Champlain | Missisquoi Bay/Maquam | Chapman Bay, VT | LCC volunteer | 45.008294 | -73.212389 |
| Champlain | Missisquoi Bay/Maquam | Donaldson Pt, VT | LCC volunteer | 44.99248333 | -73.1762 |
| Champlain | Missisquoi Bay/Maquam | Highgate Springs, Highgate VT | VT DEC | 44.99176667 | -73.11338333 |
| Champlain | Missisquoi Bay/Maquam | Larry Greene Fish and Wildlife Access, Swanton VT | LCC volunteer | 44.970758 | -73.211575 |
| Champlain | Missisquoi Bay/Maquam | LTM 50 | VT DEC | 45.01333333 | -73.17383333 |
| Champlain | Missisquoi Bay/Maquam | LTM 51 | VT DEC | 45.04166667 | -73.12966667 |
| Champlain | Missisquoi Bay/Maquam | Maquam Bay, Swanton VT | LCC volunteer | 44.92446 | -73.208971 |
| Champlain | Missisquoi Bay/Maquam | Maquam Shore Rd, Swanton VT | VDH | 44.90378 | -73.16709 |

| | | | | | |
|-----------|------------------------|---|---------------|-------------|--------------|
| Champlain | Missisquoi Bay/Maquam | North Hero State Park VT | LCC volunteer | 44.92078333 | -73.2402 |
| Champlain | Missisquoi Bay/Maquam | Shipyard, Highgate Springs VT | LCC volunteer | 44.979667 | -73.107696 |
| Champlain | Missisquoi/Maquam | Rock River Fish and Wildlife Access, Swanton VT | VT DEC | 44.98943564 | -73.08915639 |
| Champlain | South Lake | Allen Bay, Orwell VT | LCC volunteer | 43.782776 | -73.352973 |
| Champlain | South Lake | Beadles Cove, Shoreham VT | LCC volunteer | 43.848951 | -73.369539 |
| Champlain | South Lake | LTM 02 | VT DEC | 43.71483333 | -73.383 |
| Champlain | South Lake | LTM 04 | VT DEC | 43.95166667 | -73.40783333 |
| Champlain | South Lake | Marlena Bay, Shoreham VT | LCC volunteer | 43.839696 | -73.370697 |
| Champlain | St. Albans/the Islands | Boat Launch, North End Rd, North Hero VT | VDH | 44.89484 | -73.23253 |
| Champlain | St. Albans/the islands | Boat Launch, St. Albans VT | LCC volunteer | 44.79424 | -73.17227 |
| Champlain | St. Albans/the islands | Boat Launch, St. Albans VT | VT DEC | 44.79424 | -73.17227 |
| Champlain | St. Albans/the islands | Carry Bay, VT | LCC volunteer | 44.83306667 | -73.291 |
| Champlain | St. Albans/the Islands | Ferrand Rd., St. Albans VT | LCC volunteer | 44.79181745 | -73.14235281 |
| Champlain | St. Albans/the islands | Georgia Shore, VT | LCC volunteer | 44.75810848 | -73.17835743 |
| Champlain | St. Albans/the islands | Grand Isle State Park VT | LCC volunteer | 44.685872 | -73.290998 |
| Champlain | St. Albans/the Islands | Keeler Bay, South Hero VT | VDH | 44.65133 | -73.30205 |
| Champlain | St. Albans/the islands | Kill Kare State Park VT | LCC volunteer | 44.778058 | -73.181741 |
| Champlain | St. Albans/the islands | Knight Point State Park VT | LCC volunteer | 44.769878 | -73.294755 |
| Champlain | St. Albans/the islands | LTM 34 | VT DEC | 44.70816667 | -73.22683333 |
| Champlain | St. Albans/the islands | LTM 40 | VT DEC | 44.78533333 | -73.16216667 |
| Champlain | St. Albans/the Islands | Marycrest Beach | LCC volunteer | 44.72218476 | -73.28162333 |
| Champlain | St. Albans/the islands | Milton VT | LCC volunteer | 44.659954 | -73.213066 |
| Champlain | St. Albans/the islands | Pelots Bay, VT | LCC volunteer | 44.82546667 | -73.29756667 |
| Champlain | St. Albans/the islands | Rt 2 - City Bay, North Hero VT | LCC volunteer | 44.81655 | -73.290153 |
| Champlain | St. Albans/the islands | Rt.2, South of N. Hero Bridge, VT | LCC volunteer | 44.87963871 | -73.27215474 |
| Champlain | St. Albans/the islands | Sand Bar State Park VT | LCC volunteer | 44.628168 | -73.239849 |
| Champlain | St. Albans/the islands | South Hero Fish and Wildlife Boat Access, VT | LCC volunteer | 44.63682128 | -73.26661004 |
| Champlain | St. Albans/the islands | St. Albans Bay Park, St. Albans VT | LCC volunteer | 44.809457 | -73.143504 |
| Champlain | St. Albans/the islands | The Gut | LCC volunteer | 44.751381 | -73.289198 |
| Champlain | St. Albans/the Islands | Vantine Fish and Wildlife Access, Grand Isle VT | LCC volunteer | 44.71994499 | -73.34211956 |

| | | | | | |
|--------------|------------------------|-------------------------------|---------------|-------------|--------------|
| Champlain | St. Albans/the islands | West Shore Rd., North Hero VT | LCC volunteer | 44.786709 | -73.316578 |
| Champlain | St. Albans/the Islands | White's Beach, South Hero VT | LCC volunteer | 44.62199254 | -73.32377698 |
| Carmi | | Carmi State Park, Beach | VDH | 44.96143 | -72.87498 |
| Elmore | | Elmore State Park, Beach | VDH | 44.54146 | -72.52813 |
| Iroquois | | Lake Iroquois, Town Beach | VDH | 44.37906 | -73.08587 |
| Memphremagog | | Prouty Beach, Newport VT | VDH | 44.94657 | -72.20821 |

Appendix B. Visual Assessment Protocols Developed by the LCC

B.1. On-line reporting form

[-http://www.lakechamplaincommittee.org/get-involved/volunteers/bga-monitors/bga-report/](http://www.lakechamplaincommittee.org/get-involved/volunteers/bga-monitors/bga-report/)

Reporting Blue-Green Algae on Lake Champlain

Please use this form to report on water quality conditions with regard to algae on Lake Champlain.

Blue-green algae blooms can be easily confused with other natural phenomena. Please consult our guide to [Recognizing Blue Green Algae in Lake Champlain](#) before reporting a bloom. If there is a well developed bloom, avoid direct contact ([see VDOH link](#)).

Also, our [guide to categories of algae bloom intensity](#) and our [instructions for photographing algae blooms](#) will be helpful in filling out the form below.

The first six items in the form (up to 'Please choose the category') and your contact information (bottom of form) are the most important items. Other questions provide details for our information but are less critical.

Algae Report Form

Type of report Regular weekly Supplemental

Water body or section of Lake Champlain

Municipality of observation

Date of observation

Time of observation

Please choose the category (see links above) that best describes the intensity of any bloom present

- 1a - Little or no blue-green algae present - clear water
- 1b - Little or no blue-green algae present - brown or turbid water
- 1c - Little or no blue-green algae present - other material present
- 2 - Blue-green algae present -less than bloom levels (include photos)
- 3 - Blue-green algae bloom in process (include photos)

Photo - water surface close-up

Photo - water surface broad view

Photo - water sample in clear container

Extent of algae bloom on open water (Evaluate the area within 100 yards of where you are).

- Coverage greater than 75%
- Between 50 and 75% cover
- <50% cover
- Very limited
- No bloom
- Unknown
- Not Applicable

Algae Color

- Green
- Turquoise
- Reddish
- Yellow
- None
- Other (add details below)

Has the bloom disappeared since the observation noted above?

- Yes
- No
- I don't know

If known, date of disappearance

Other details



Please provide the most accurate location information you can - e.g. GPS coordinates, precise street address, name

of the bay, etc.

Water temperature

Wind direction

Water Surface

Name

Email

Address

Telephone

B.2. Determining Algae Bloom Intensity

- <http://www.lakechamplaincommittee.org/get-involved/volunteers/bga-monitors/algae-bloom-intensity/>

General Instructions

Observations should be made at the same location once per week. Observations must be made between 10:00 AM and 3:00 PM. At that time the algae have had a chance to rise from lower in the water column, but cells are not yet likely to have ruptured from the heat of mid-day. Only observations [submitted online by noon on Wednesday](#) will be included in the weekly report. Anyone providing reports should include information on the extent and type of algae and plant growth, the color of the water, and rate the algae intensity. The rating scale runs from one (a, b, or c) to three, with one being clear water with little to no blue-green algae present and three being a blue-green algae bloom in progress.

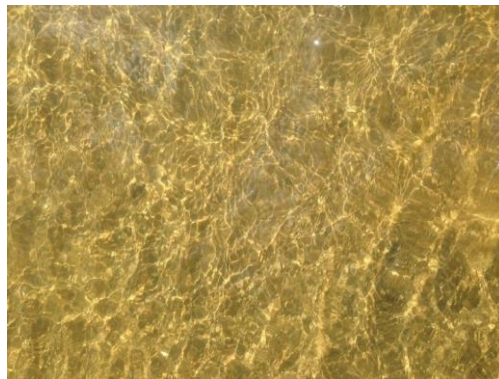
For [category 2](#) and [3](#) conditions, three digital photographs should be submitted via the [online form](#). Remember to avoid direct contact if the bloom is well developed.

Category 1a: Little to no blue-green algae present - clear water

Any organisms floating in water column are clear (e.g. insect 'skins') rather than green. Leafy or grass-like plants (including duckweed) may be present. Foam may be present.



Objects sitting lower in the water column are clearly visible (red arrow indicates water surface)



Overall appearance of water is clear

Category 1b - Little to no blue-green algae present - brown and turbid

Brown turbid low visibility through water column

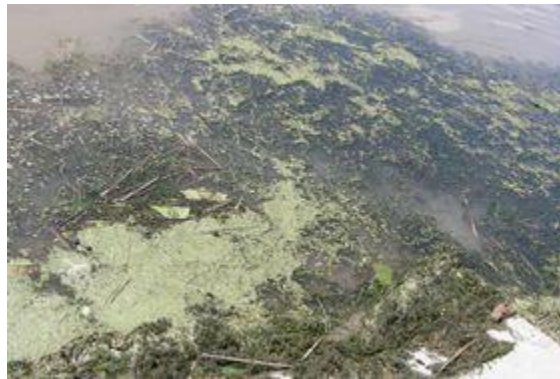


Brown and cloudy does not indicate presence of blue-green algae

Category 1c - Little to no blue-green algae present - other material

Other material that doesn't count as blue-green algae might include:

- Long strands that tangle around paddles or boat hooks
- Small bright mustard yellow (pollen) or grass green (duckweed) particles
- Algae attached to rocks or the lake bottom.



Green dots are duckweed; stringy algae are not blue-green algae



From a distance duckweed can look like algae



Stringy algae attached to the bottom are not blue-greens



Duckweed up close

Category 2: Blue-green algae present, but at less than 'bloom' levels

Numerous green balls (pinhead size or larger) floating in water column, but not accumulated at water surface. Possible small (smaller than a softball) patches of algae accumulation. Open water color **not** green. Possible narrow band of algae accumulation at shoreline.



Some algae in water but not a uniform layer



Open water not green.



Possible narrow band of algae at shoreline

Category 3: Blue-green algae bloom in progress

Extensive surface scum on water – color may range from green to electric blue (not yellow/pollen). Usually accompanied by a thick accumulation at shoreline. Open water appears green.



Continuous layer of algae at the surface - not stringy



Thick surface scum present



Open water surface green to turquoise

Main navigation:

B.3. Guidelines for Photographic Documentation - <http://www.lakechamplaincommittee.org/get-involved/volunteers/bga-monitors/bga-photos/>

Instructions for Photographing Algae Blooms

Please take digital photographs of the water when [category 2 or 3 bloom conditions](#) are observed.

We need three photographs:

1. A close-up of the water surface,
2. A broad view of water in the vicinity, and
3. A close-up of a water sample in a clear container and placed against a background that provides contrast such as a sheet of paper or a light-colored wall. Darker colors provide more contrast.



1. Use your camera's date stamp, or hold up a card in the photo with time, date, and location.



2. Photograph both a close-up and a broad view.



3. For close-ups, take a sample of water in a clear container and photograph against a contrasting background. Over about 1/2 hour algae will rise toward the surface; detritus will sink.

When collecting a water sample to photograph take care to avoid exposure to blue-green algae. Wear gloves, don't wade or immerse yourself in the water and wash any exposed portions of your body immediately after collecting the sample.

All photographs should include the time, date, and location. This information can be added by using the date stamp in your camera or by holding a piece of paper with the relevant information in the picture. Name the photograph file using the year, month, day-photographer's name-location-photo type.

Example file name: 2012-07-15_MWinslow_DonaldsonPt_Closeup

Appendix C. 2013 monitoring report summary

| Waterbody | Region | Report Date | Station | Status | Method | Density (cells/ml) | Potentially Toxic Cyanobacteria Present | Microcystin (µg/L) | Anatoxin (µg/L) |
|----------------|---------------------|-------------|-------------------------------|--------|--------|--------------------|---|--------------------|-----------------|
| Lake Champlain | Main Lake - central | 6/17/2013 | Beggs Park Beach, Essex NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/24/2013 | Beggs Park Beach, Essex NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/1/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/8/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/22/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/29/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/12/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/19/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/26/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/13/2013 | Beggs Park Beach, Essex NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/9/2013 | Boat Launch, Port Douglas NY | 3 | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/19/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/24/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/30/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/7/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/21/2013 | Boat Launch, Willsboro Bay NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/30/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |

| | | | | | | | | | |
|----------------|---------------------|-----------|---|----|--------|--|--|--|--|
| Lake Champlain | Main Lake - central | 8/4/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/11/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/19/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/25/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/1/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/9/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/15/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/22/2013 | Boat Launch, Willsboro Bay NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/30/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/7/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/21/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/30/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/4/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/11/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/19/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/25/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/1/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/15/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/22/2013 | Buena Vista Park, Willsboro NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/18/2013 | Community Sailing Center, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/26/2013 | Community Sailing Center, Burlington VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/18/2013 | Community Sailing Center, Burlington VT | 1c | Visual | | | | |

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|----------------|---------------------|-----------|---|----|--------|--|--|--|--|
| Lake Champlain | Main Lake - central | 7/23/2013 | Community Sailing Center, Burlington VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/6/2013 | Community Sailing Center, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/13/2013 | Community Sailing Center, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/20/2013 | Community Sailing Center, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/3/2013 | Community Sailing Center, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/6/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/7/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/8/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/22/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 2 | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/29/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/12/2013 | Fish and Wildlife Access, Malletts Bay, Colchester VT | 2 | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/18/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/22/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/25/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/29/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/6/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/9/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/13/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/20/2013 | LaPlatte River mouth, Shelburne Bay VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/27/2013 | LaPlatte River mouth, Shelburne Bay VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/7/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/10/2013 | LaPlatte River mouth, Shelburne Bay VT | 1c | Visual | | | | |

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|----------------|---------------------|-----------|--|--------------|--------------|-----|---|------------|------------|
| Lake Champlain | Main Lake - central | 8/16/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/21/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/27/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/2/2013 | LaPlatte River mouth, Shelburne Bay VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/21/2013 | LaPlatte River mouth, Shelburne Bay VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/17/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/27/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/3/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/16/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/24/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/31/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/8/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/15/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/20/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/28/2013 | Leddy Park, Burlington VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/3/2013 | Leddy Park, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/3/2013 | LTM 16 | quantitative | Tiered Alert | 15 | Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - central | 6/25/2013 | LTM 16 | quantitative | Tiered Alert | 2 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - central | 7/12/2013 | LTM 16 | quantitative | Tiered Alert | 24 | Anabaena, Aphanizomenon, Microcystis, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 8/16/2013 | LTM 16 | quantitative | Tiered Alert | 114 | Anabaena, Aphanizomenon, Microcystis, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 7/12/2013 | LTM 19 | quantitative | Tiered Alert | 16 | Anabaena, Aphanizomenon, Microcystis, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 8/16/2013 | LTM 19 | quantitative | Tiered Alert | 74 | Anabaena, Aphanizomenon, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 6/3/2013 | LTM 21 | quantitative | Tiered Alert | 25 | Aphanizomenon | not tested | not tested |

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|----------------|---------------------|-----------|----------------------------|--------------|---------------------|------------|---|------------|------------|
| Lake Champlain | Main Lake - central | 6/25/2013 | LTM 21 | quantitative | Tiered Alert | 172 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - central | 7/12/2013 | LTM 21 | quantitative | Tiered Alert | 10 | Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - central | 8/16/2013 | LTM 21 | quantitative | Tiered Alert | 28 | Anabaena, Aphanizomenon, Microcystis, Woronichinia | not tested | not tested |
| Lake Champlain | Main Lake - central | 9/19/2013 | LTM 21 | quantitative | Tiered Alert | 561 | Anabaena, Aphanizomenon, Microcystis | not tested | not tested |
| Lake Champlain | Main Lake - central | 6/6/2013 | LTM 25 | quantitative | Tiered Alert | 100 | Anabaena, Aphanizomenon, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 7/2/2013 | LTM 25 | quantitative | Tiered Alert | 16 | Anabaena, Aphanizomenon, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 7/22/2013 | LTM 25 | quantitative | Tiered Alert | 44 | Anabaena, Aphanizomenon, Microcystis, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - central | 8/26/2013 | LTM 25 | quantitative | Tiered Alert | 130 | Anabaena, Aphanizomenon, Microcystis, Woronichinia | not tested | not tested |
| Lake Champlain | Main Lake - central | 6/18/2013 | Niquette Bay State Park VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/25/2013 | Niquette Bay State Park VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/3/2013 | Niquette Bay State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/17/2013 | Niquette Bay State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/19/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | not tested | not tested | not tested | not tested |
| Lake Champlain | Main Lake - central | 6/25/2013 | North Beach, Burlington VT | 1b | tiered alert/visual | 667 | Anabaena, Oscillatoria | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 6/29/2013 | North Beach, Burlington VT | 1c | tiered alert/visual | not tested | | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/2/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/6/2013 | North Beach, Burlington VT | not reported | tiered alert/visual | 54200 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/16/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/23/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |

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|----------------|---------------------|-----------|--|--------------|---------------------|-------|----------------------------|--------|-------|
| Lake Champlain | Main Lake - central | 7/29/2013 | North Beach, Burlington VT | not reported | tiered alert/visual | 0 | Aphanizomenon, Aphanothece | | |
| Lake Champlain | Main Lake - central | 7/31/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 0 | Aphanizomenon, Aphanothece | <0.16 | < 0.5 |
| Lake Champlain | Main Lake - central | 8/7/2013 | North Beach, Burlington VT | 1b | tiered alert/visual | 0 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/13/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 488 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/20/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 20500 | Anabaena, Microcystis | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/27/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 280 | Anabaena | 0.17 | <0.5 |
| Lake Champlain | Main Lake - central | 9/3/2013 | North Beach, Burlington VT | 1a | tiered alert/visual | 4530 | Anabaena, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 6/17/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/26/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/2/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/9/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/15/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/23/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/2/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/15/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/20/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/26/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/3/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | | |

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|----------------|---------------------|-----------|--|----|--------|--|--|--|
| Lake Champlain | Main Lake - central | 9/8/2013 | Oakledge Park (Blanchard Beach), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 6/17/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/2/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/9/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/15/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/23/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1b | Visual | | | |
| Lake Champlain | Main Lake - central | 8/2/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 8/15/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1b | Visual | | | |
| Lake Champlain | Main Lake - central | 8/20/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 8/26/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 9/3/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 9/8/2013 | Oakledge Park (Oakledge Cove), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 6/17/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 6/27/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/2/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/9/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/15/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | |
| Lake Champlain | Main Lake - central | 7/23/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1b | Visual | | | |
| Lake Champlain | Main Lake - central | 8/2/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1b | Visual | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1b | Visual | | | |
| Lake Champlain | Main Lake - central | 8/15/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1b | Visual | | | |
| Lake Champlain | Main Lake - central | 8/20/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | |

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|----------------|---------------------|-----------|--|----|---------------------|------------|---------------------------|--------|------|
| Lake Champlain | Main Lake - central | 8/26/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/3/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/8/2013 | Oakledge Park (rocky shoreline), Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/17/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | not tested | not tested | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 6/24/2013 | Red Rocks Beach, S. Burlington VT | 1c | tiered alert/visual | 7200 | Anabaena, Aphanizomenon | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/1/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 884 | Anabaena | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/3/2013 | Red Rocks Beach, S. Burlington VT | 3 | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/8/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/15/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 93 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/22/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 7/29/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/5/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/12/2013 | Red Rocks Beach, S. Burlington VT | 1b | tiered alert/visual | 0 | Anabaena | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/19/2013 | Red Rocks Beach, S. Burlington VT | 1b | tiered alert/visual | 993 | anabaena | <0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 8/26/2013 | Red Rocks Beach, S. Burlington VT | 1a | tiered alert/visual | 2760 | Anabaena, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 9/2/2013 | Red Rocks Beach, S. Burlington VT | 1b | tiered alert/visual | 0 | Microcystis, Oscillatoria | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - central | 6/23/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - central | 6/30/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/7/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/21/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/29/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/11/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/18/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/25/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/1/2013 | Rosetti Park, Colchester VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/17/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/23/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/30/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/7/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/29/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/11/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/18/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/25/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/1/2013 | Starr Farm Beach, Burlington VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/18/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/24/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |

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| Lake Champlain | Main Lake - central | 6/30/2013 | Teddy Bear Point Cove, Willsboro VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/7/2013 | Teddy Bear Point Cove, Willsboro VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Teddy Bear Point Cove, Willsboro VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/21/2013 | Teddy Bear Point Cove, Willsboro VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/28/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/4/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/11/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/18/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/25/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/1/2013 | Teddy Bear Point Cove, Willsboro VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/18/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/26/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/1/2013 | Town Beach, Charlotte VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/8/2013 | Town Beach, Charlotte VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/14/2013 | Town Beach, Charlotte VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/29/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/4/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/11/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/18/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/1/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/8/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 9/9/2013 | Town Beach, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 6/18/2013 | Town Beach, Shelburne VT | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - central | 6/27/2013 | Town Beach, Shelburne VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/2/2013 | Town Beach, Shelburne VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/12/2013 | Town Beach, Shelburne VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/16/2013 | Town Beach, Shelburne VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/14/2013 | Town Beach, Shelburne VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/21/2013 | Town Beach, Shelburne VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/3/2013 | Town Farm Bay, Charlotte VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/9/2013 | Town Farm Bay, Charlotte VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/15/2013 | Town Farm Bay, Charlotte VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/22/2013 | Town Farm Bay, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 7/29/2013 | Town Farm Bay, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/5/2013 | Town Farm Bay, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - central | 8/12/2013 | Town Farm Bay, Charlotte VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/9/2013 | Boat Launch, Peru NY | 2 | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/16/2013 | Boat Launch, Peru NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/30/2013 | City Beach, Plattsburgh NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/7/2013 | City Beach, Plattsburgh NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/10/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/14/2013 | City Beach, Plattsburgh NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/17/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/21/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/24/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/4/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - northern | 8/7/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/11/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/25/2013 | City Beach, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/1/2013 | City Beach, Plattsburgh NY | 1c | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/17/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/2/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/15/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/22/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/30/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/5/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | Eagle Acres Rd, Chazy NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/21/2013 | LTM 33 | quantitative | Tiered Alert | 1 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - northern | 7/9/2013 | LTM 33 | quantitative | Tiered Alert | 9 | Anabaena, Aphanizomenon, Woronichinia/Coelosphaeri | not tested | not tested |
| Lake Champlain | Main Lake - northern | 7/29/2013 | LTM 33 | quantitative | Tiered Alert | 11 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - northern | 6/21/2013 | LTM 36 | quantitative | Tiered Alert | 1 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - northern | 7/9/2013 | LTM 36 | quantitative | Tiered Alert | 9 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - northern | 7/29/2013 | LTM 36 | quantitative | Tiered Alert | 29 | Anabaena, Aphanizomenon | Not tested | Not tested |
| Lake Champlain | Main Lake - northern | 6/24/2013 | LTM 46 | quantitative | Tiered Alert | 5 | Anabaena | not tested | not tested |
| Lake Champlain | Main Lake - northern | 7/15/2013 | LTM 46 | quantitative | Tiered Alert | 3 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - northern | 7/30/2013 | LTM 46 | quantitative | Tiered Alert | 174 | Aphanizomenon, Aphanothece, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - northern | 9/3/2013 | LTM 46 | quantitative | Tiered Alert | 257 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | not tested | not tested |
| Lake Champlain | Main Lake - northern | 6/25/2013 | Pt. Au Fer, Champlain NY | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - northern | 6/17/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/24/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/2/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/8/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/15/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/22/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/30/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/5/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/12/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/25/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/2/2013 | Pt. Au Roche State Park NY (beach) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/16/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/17/2013 | Pt. Au Roche State Park NY (boat launch) | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/26/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/30/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/2/2013 | Pt. Au Roche State Park NY (boat launch) | 1c | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/7/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/8/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/14/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/15/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/21/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/22/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - northern | 7/29/2013 | Pt. Au Roche State Park NY (boat launch) | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/4/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/5/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/12/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/18/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/26/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/2/2013 | Pt. Au Roche State Park NY (boat launch) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/17/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1c | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/24/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/2/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/8/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/15/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/30/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/5/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/12/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/25/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/2/2013 | Pt. Au Roche State Park NY (Deep Bay) | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/24/2013 | Rouses Pt, NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/3/2013 | Rouses Pt, NY | 1c | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/8/2013 | Rouses Pt, NY | 1c | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/15/2013 | Rouses Pt, NY | 1c | Visual | | | | |

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| Lake Champlain | Main Lake - northern | 7/22/2013 | Rouses Pt, NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/12/2013 | Rouses Pt, NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | Rouses Pt, NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/26/2013 | Rouses Pt, NY | 1c | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/5/2013 | South Peru, NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/20/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/28/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/3/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/11/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/18/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/25/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/1/2013 | Treadswell Bay, Beekmantown NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/9/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/15/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/22/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/29/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/5/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/12/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/19/2013 | Treadswell Bay, Beekmantown NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 6/30/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/7/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 7/21/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/4/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - northern | 8/11/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/19/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 8/25/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - northern | 9/2/2013 | Wilcox Dock, Plattsburgh NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/25/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 2370 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/16/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 4170 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/23/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 80 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Arnold Bay, Panton VT | 1c | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/13/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/20/2013 | Arnold Bay, Panton VT | 1c | tiered alert/visual | 3180 | anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/27/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 9/3/2013 | Arnold Bay, Panton VT | 1a | tiered alert/visual | 0 | aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/8/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - southern | 7/14/2013 | Boat launch, Button Bay State Park VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/24/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/12/2013 | Boat launch, Button Bay State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/17/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/25/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Boat Launch, Westport NY | 2 | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/16/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/23/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Boat Launch, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/16/2013 | Boat Launch, Westport NY | 2 | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/20/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/27/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/4/2013 | Boat Launch, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/19/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/26/2013 | Camp Dudley, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/3/2013 | Camp Dudley, Westport NY | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Camp Dudley, Westport NY | 1c | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/24/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/14/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - southern | 8/21/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/28/2013 | Camp Dudley, Westport NY | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Camp Greylock, Ferrisburgh VT | 3 | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/4/2013 | Camp Greylock, Ferrisburgh VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Camp Greylock, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/16/2013 | Camp Greylock, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Camp Greylock, Ferrisburgh VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Camp Greylock, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/17/2013 | DAR State Park VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/25/2013 | DAR State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/3/2013 | DAR State Park VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/9/2013 | DAR State Park VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/16/2013 | DAR State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | DAR State Park VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/18/2013 | Hawkins Bay, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/25/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Hawkins Bay, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/16/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/23/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/13/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/20/2013 | Hawkins Bay, VT | 1a | Visual | | | | |

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| Lake Champlain | Main Lake - southern | 8/27/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/3/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/10/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/17/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/24/2013 | Hawkins Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/18/2013 | Kingsland Bay State Park, VT | 1c | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Kingsland Bay State Park, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/4/2013 | Kingsland Bay State Park, VT | 2 | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Kingsland Bay State Park, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Kingsland Bay State Park, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Kingsland Bay State Park, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/27/2013 | Kingsland Bay State Park, VT | 2 | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/17/2013 | Long Point, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/20/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/26/2013 | Long Point, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 6/27/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/3/2013 | Long Point, VT | 1b | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/5/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/15/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/17/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/14/2013 | Long Point, VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/26/2013 | Long Point, VT | 1a | Visual | | | | |

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|----------------|----------------------|-----------|----------------------------|--------------|--------------|-----|--|------------|------------|
| Lake Champlain | Main Lake - southern | 6/11/2013 | LTM 07 | quantitative | Tiered Alert | 7 | Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - southern | 7/8/2013 | LTM 07 | quantitative | Tiered Alert | 7 | Anabaena, Aphanizomenon | | |
| Lake Champlain | Main Lake - southern | 7/25/2013 | LTM 07 | quantitative | Tiered Alert | 17 | aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - southern | 8/28/2013 | LTM 07 | quantitative | Tiered Alert | 195 | Anabaena, Aphanizomenon, Woronichinia/Coelosphaeri | not tested | not tested |
| Lake Champlain | Main Lake - southern | 6/11/2013 | LTM 09 | quantitative | Tiered Alert | 47 | Aphanizomenon, Woronichinia/Coelosphaerium | not tested | not tested |
| Lake Champlain | Main Lake - southern | 7/8/2013 | LTM 09 | quantitative | Tiered Alert | 13 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Main Lake - southern | 7/25/2013 | LTM 09 | quantitative | Tiered Alert | 79 | Aphanizomenon, Microcystis | not tested | not tested |
| Lake Champlain | Main Lake - southern | 8/28/2013 | LTM 09 | quantitative | Tiered Alert | 105 | Anabaena, Aphanizomenon, Microcystis, Woronichinia | not tested | not tested |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Town Beach, Ferrisburgh VT | 3 | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/16/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/23/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/13/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/20/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 8/27/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/3/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/10/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/17/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |
| Lake Champlain | Main Lake - southern | 9/24/2013 | Town Beach, Ferrisburgh VT | 1a | Visual | | | | |

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|----------------|------------------------|-----------|--------------------------------|----|---------------------|--------|-----------------------------|--------|------|
| Lake Champlain | Main Lake - southern | 6/25/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/2/2013 | Tri Town Road, West Addison VT | 2 | tiered alert/visual | 361900 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/9/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/16/2013 | Tri Town Road, West Addison VT | 1c | tiered alert/visual | 1920 | Woronichinia/Coelosphaerium | <0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/23/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 172 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 7/30/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/6/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 0 | Anabaena, Microcystis | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/13/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 699 | Anabaena, aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/20/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 2560 | Aphanizomenon | <0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 8/27/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 1400 | Anabaena | 0.16 | <0.5 |
| Lake Champlain | Main Lake - southern | 9/3/2013 | Tri Town Road, West Addison VT | 1a | tiered alert/visual | 686 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/25/2013 | Alburgh VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/2/2013 | Alburgh VT | 1a | tiered alert/visual | 0 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/9/2013 | Alburgh VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/16/2013 | Alburgh VT | 1a | tiered alert/visual | 1450 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |

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| Lake Champlain | Missisquoi Bay/ Maquam | 7/23/2013 | Alburgh VT | 1a | tiered alert/ visual | 129200 | Aphanizomenon, Microcystis | 0.32 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/30/2013 | Alburgh VT | 1c | tiered alert/ visual | 23600 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/6/2013 | Alburgh VT | 1a | tiered alert/ visual | 0 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/13/2013 | Alburgh VT | 1c | tiered alert/ visual | 7090 | aphanizomenon, aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/20/2013 | Alburgh VT | 1b | tiered alert/ visual | 12100 | Aphanizomenon, Aphanothece, Microcystis | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/27/2013 | Alburgh VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | Alburgh VT | 1a | tiered alert/ visual | 0 | Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/17/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/23/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/30/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/7/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/14/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/21/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/28/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/4/2013 | Chapman Bay, VT | 1a | Visual | | | | |

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| Lake Champlain | Missisquoi Bay/ Maquam | 8/11/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/18/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/25/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/28/2013 | Chapman Bay, VT | 2 | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/1/2013 | Chapman Bay, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/16/2013 | Donaldson Pt, VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/24/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/30/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/7/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/17/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/22/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/29/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/6/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/12/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/20/2013 | Donaldson Pt, VT | 1a | Visual | | | | |

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| Lake Champlain | Missisquoi Bay/ Maquam | 8/26/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/24/2013 | Donaldson Pt, VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/24/2013 | Highgate Springs, Highgate VT | quantitative | tiered alert | 53 | Anabaena, Aphanizomenon | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/15/2013 | Highgate Springs, Highgate VT | quantitative | Tiered Alert | 2060 | Anabaena, Aphanizomenon, Coelosphaerium | *0.0033 | *<0.0000 126 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/30/2013 | Highgate Springs, Highgate VT | alert 1 | Tiered Alert | 14100 | Anabaena, Aphanizomenon, Microcystis | Not tested | Not tested |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | Highgate Springs, Highgate VT | vigilance | Tiered Alert | 3670 | Aphanizomenon, Anabaena | 0.036 | <0.001 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/11/2013 | Lakewood Drive, Swanton | 2 | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/27/2013 | Lakewood Drive, Swanton | 3 | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/16/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/23/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/29/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1c | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/7/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/13/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/20/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |

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| Lake Champlain | Missisquoi Bay/ Maquam | 7/28/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/3/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/11/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/17/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 2 | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/24/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 2 | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/13/2013 | Larry Greene Fish and Wildlife Access, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/24/2013 | LTM 50 | quantitative | Tiered Alert | 11 | Aphanizomenon, Microcystis | not tested | not tested |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/15/2013 | LTM 50 | quantitative | Tiered Alert | 2060 | Anabaena, Aphanizomenon, Coelosphaerium | *0.0018 | *<0.0000126 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/30/2013 | LTM 50 | alert 1 | Tiered Alert | 86100 | Anabaena, Aphanizomenon, Microcystis | 0.15 | <0.002 |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | LTM 50 | quantitative | Tiered Alert | 356 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/24/2013 | LTM 51 | quantitative | Tiered Alert | 19 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/15/2013 | LTM 51 | quantitative | Tiered Alert | 1100 | Aphanizomenon | 0.0042 | <0.0000126 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/30/2013 | LTM 51 | alert 1 | Tiered Alert | 136700 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | 0.18 | <0.002 |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | LTM 51 | alert 1 | Tiered Alert | 9430 | Anabaena, Aphanizomenon | 0.062 | <.001 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/17/2013 | Maquam Bay, Swanton VT | 1a | Visual | | | | |

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|----------------|------------------------|-----------|-------------------------------|----|----------------------|-----|------------------------------|--------|------|
| Lake Champlain | Missisquoi Bay/ Maquam | 6/25/2013 | Maquam Bay, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/1/2013 | Maquam Bay, Swanton VT | 1c | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/10/2013 | Maquam Bay, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/15/2013 | Maquam Bay, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/24/2013 | Maquam Bay, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/29/2013 | Maquam Bay, Swanton VT | 1a | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/6/2013 | Maquam Bay, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/12/2013 | Maquam Bay, Swanton VT | 1c | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/25/2013 | Maquam Shore Road, Swanton VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/2/2013 | Maquam Shore Road, Swanton VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/9/2013 | Maquam Shore Road, Swanton VT | 1a | tiered alert/ visual | 0 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/16/2013 | Maquam Shore Road, Swanton VT | 1a | tiered alert/ visual | 0 | small piece of Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/23/2013 | Maquam Shore Road, Swanton VT | 1b | tiered alert/ visual | 267 | Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/30/2013 | Maquam Shore Road, Swanton VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/6/2013 | Maquam Shore Road, Swanton VT | 1b | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |

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|----------------|------------------------|-----------|-------------------------------|----|----------------------|------------|----------------------------|--------|-------|
| Lake Champlain | Missisquoi Bay/ Maquam | 8/13/2013 | Maquam Shore Road, Swanton VT | 1c | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/20/2013 | Maquam Shore Road, Swanton VT | 1c | tiered alert/ visual | 898 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/27/2013 | Maquam Shore Road, Swanton VT | 1a | tiered alert/ visual | 0 | Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | Maquam Shore Road, Swanton VT | 1b | tiered alert/ visual | 0 | no cyanobacteria observed | 0.43 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/17/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | not tested | not tested | 0.18 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/24/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/1/2013 | North Hero State Park, VT | 1b | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/8/2013 | North Hero State Park, VT | 1b | tiered alert/ visual | 0 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/15/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 1240 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/22/2013 | North Hero State Park, VT | 1c | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/29/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/5/2013 | North Hero State Park, VT | 1b | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/12/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 0 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/19/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 320 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/26/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 0 | no cyanobacteria observed | 0.16 | <0.5 |

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|----------------|------------------------|-----------|---|--------------|----------------------|------------|---|--------|------|
| Lake Champlain | Missisquoi Bay/ Maquam | 9/3/2013 | North Hero State Park, VT | 1a | tiered alert/ visual | 0 | possible Phormidium | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/16/2013 | Rock River Fish and Wildlife Access, Swanton VT | 1b | Visual | | | | |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/17/2013 | Shipyards, Highgate Springs VT | 1a | tiered alert/ visual | not tested | not tested | | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/23/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 0 | No cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 6/30/2013 | Shipyards, Highgate Springs VT | not reported | tiered alert/ visual | 1880 | Anabaena, Aphanizomenon, Microcystis | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/7/2013 | Shipyards, Highgate Springs VT | 1a | tiered alert/ visual | 1550 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/14/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 3550 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/21/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 13800 | Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 7/28/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 70200 | Aphanizomenon, Microcystis | <0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/4/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/11/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 3000 | Aphanothece | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/19/2013 | Shipyards, Highgate Springs VT | 1b | tiered alert/ visual | 12400 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | <0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 8/26/2013 | Shipyards, Highgate Springs VT | 2 | tiered alert/ visual | 170600 | Anabaena, Aphanizomenon, Microcystis | < 0.16 | <0.5 |
| Lake Champlain | Missisquoi Bay/ Maquam | 9/1/2013 | Shipyards, Highgate Springs VT | 2 | tiered alert/ visual | 49700 | Anabaena, Microcystis | 0.32 | <0.5 |
| Lake Champlain | South Lake | 6/18/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 6/25/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |

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|----------------|------------|-----------|---------------------------|--------------|--------------|----|---------------------------|------------|------------|
| Lake Champlain | South Lake | 7/15/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 7/24/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 7/29/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 8/7/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 8/11/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 8/19/2013 | Allen Bay, Orwell VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/26/2013 | Allen Bay, Orwell VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 9/3/2013 | Allen Bay, Orwell VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 6/16/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 6/24/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 6/30/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/7/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/14/2013 | Beadles Cove, Shoreham VT | 2 | Visual | | | | |
| Lake Champlain | South Lake | 7/21/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/28/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/4/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/11/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/18/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/25/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 9/1/2013 | Beadles Cove, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 6/4/2013 | LTM 02 | quantitative | Tiered Alert | 0 | no cyanobacteria observed | Not tested | not tested |
| Lake Champlain | South Lake | 7/1/2013 | LTM 02 | quantitative | Tiered Alert | 0 | no cyanobacteria observed | not tested | not tested |
| Lake Champlain | South Lake | 7/16/2013 | LTM 02 | quantitative | Tiered Alert | 24 | Anabaena | not tested | not tested |

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| Lake Champlain | South Lake | 8/19/2013 | LTM 02 | quantitative | Tiered Alert | 76 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | South Lake | 6/4/2013 | LTM 04 | quantitative | Tiered Alert | 0 | Aphanizomenon | not tested | not tested |
| Lake Champlain | South Lake | 7/1/2013 | LTM 04 | quantitative | Tiered Alert | 0 | no cyanobacteria observed | not tested | not tested |
| Lake Champlain | South Lake | 7/16/2013 | LTM 04 | quantitative | Tiered Alert | 32 | Anabaena | not tested | not tested |
| Lake Champlain | South Lake | 8/19/2013 | LTM 04 | quantitative | Tiered Alert | 422 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | South Lake | 6/17/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 6/24/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/1/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/8/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/15/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/22/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 7/30/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/15/2013 | Marlena Bay, Shoreham VT | 1b | Visual | | | | |
| Lake Champlain | South Lake | 8/20/2013 | Marlena Bay, Shoreham VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 8/27/2013 | Marlena Bay, Shoreham VT | 1a | Visual | | | | |
| Lake Champlain | South Lake | 9/3/2013 | Marlena Bay, Shoreham VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/25/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/2/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/16/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 333 | Aphanothece | < 0.16 | <0.5 |

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| Lake Champlain | St. Albans/the islands | 7/23/2013 | Boat Launch, North End Road, North Hero VT | 1b | tiered alert/visual | 40 | Anabaena, Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/30/2013 | Boat Launch, North End Road, North Hero VT | 1c | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/13/2013 | Boat Launch, North End Road, North Hero VT | 1b | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Boat Launch, North End Road, North Hero VT | 1c | tiered alert/visual | 0 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 34300 | Anabaena, Gloeotrichia | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 9/3/2013 | Boat Launch, North End Road, North Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/11/2013 | Boat launch, St. Albans Bay VT | quantitative | Tiered Alert | 5 | Microcystis | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 7/18/2013 | Boat launch, St. Albans Bay VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/24/2013 | Boat launch, St. Albans Bay VT | quantitative | Tiered Alert | 0 | Anabaena | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 8/17/2013 | Boat launch, St. Albans Bay VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Boat launch, St. Albans Bay VT | alert 1 | Tiered Alert | 36000 | Anabaena, Aphanizomenon | 0.062 | <0.002 |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Boat launch, St. Albans Bay VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/25/2013 | Boat launch, St. Albans Bay VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | Boat launch, St. Albans Bay VT | 3 | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 9/2/2013 | Boat launch, St. Albans Bay VT | 1c | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/17/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/1/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/8/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/15/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/22/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/30/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/12/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/19/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/26/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/3/2013 | Carry Bay, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/24/2013 | Ferrand Rd. St. Albans, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/1/2013 | Ferrand Rd. St. Albans, VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/8/2013 | Ferrand Rd. St. Albans, VT | 1b | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 7/15/2013 | Ferrand Rd. St. Albans, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/22/2013 | Ferrand Rd. St. Albans, VT | 1c | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/29/2013 | Ferrand Rd. St. Albans, VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/2/2013 | Ferrand Rd. St. Albans, VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/5/2013 | Ferrand Rd. St. Albans, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/13/2013 | Ferrand Rd. St. Albans, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/19/2013 | Ferrand Rd. St. Albans, VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/26/2013 | Ferrand Rd. St. Albans, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/2/2013 | Ferrand Rd. St. Albans, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/18/2013 | Georgia Shore, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/25/2013 | Georgia Shore, VT | 1a | visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/2/2013 | Georgia Shore, VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | Georgia Shore, VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/16/2013 | Georgia Shore, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/23/2013 | Georgia Shore, VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 7/30/2013 | Georgia Shore, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Georgia Shore, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/13/2013 | Georgia Shore, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Georgia Shore, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/17/2013 | Grand Isle State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/25/2013 | Grand Isle State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/10/2013 | Grand Isle State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/21/2013 | Grand Isle State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/12/2013 | Grand Isle State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/19/2013 | Grand Isle State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/25/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/2/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | No cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | Keeler Bay, South Hero VT | 1c | tiered alert/visual | 3270 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/16/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 7/23/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |

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| Lake Champlain | St. Albans/the islands | 7/30/2013 | Keeler Bay, South Hero VT | 1b | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/13/2013 | Keeler Bay, South Hero VT | 1c | tiered alert/visual | 0 | Aphanizomenon | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 3070 | Anabaena | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 9/3/2013 | Keeler Bay, South Hero VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | < 0.16 | <0.5 |
| Lake Champlain | St. Albans/the islands | 6/17/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/1/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/15/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/22/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/29/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/5/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/12/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/19/2013 | Kill Kare State Park VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 8/26/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/1/2013 | Kill Kare State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/17/2013 | Knight Point State Park VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/25/2013 | Knight Point State Park VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | Knight Point State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/15/2013 | Knight Point State Park VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/23/2013 | Knight Point State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/30/2013 | Knight Point State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Knight Point State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/13/2013 | Knight Point State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/21/2013 | Knight Point State Park VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | Knight Point State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/19/2013 | LTM 34 | quantitative | Tiered Alert | 0 | Anabaena | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 7/11/2013 | LTM 34 | quantitative | Tiered Alert | 0 | Aphanizomenon, Anabaena | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 7/24/2013 | LTM 34 | quantitative | Tiered Alert | 13 | Woronichinia/Coelosphaerium | not tested | not tested |

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| Lake Champlain | St. Albans/the islands | 8/20/2013 | LTM 34 | quantitative | Tiered Alert | 19 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 6/19/2013 | LTM 40 | quantitative | Tiered Alert | 0 | no cyanobacteria observed | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 7/11/2013 | LTM 40 | quantitative | Tiered Alert | 11 | Anabaena | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 7/24/2013 | LTM 40 | quantitative | Tiered Alert | 44 | Anabaena, Aphanizomenon | not tested | not tested |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | LTM 40 | alert 1 | Tiered Alert | 15900 | Anabaena, Aphanizomenon | 0.002 | <0.002 |
| Lake Champlain | St. Albans/the islands | 7/1/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/8/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/15/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/23/2013 | Marycrest Beach, Grand Isle VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/29/2013 | Marycrest Beach, Grand Isle VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/12/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/3/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 9/16/2013 | Marycrest Beach, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/16/2013 | Milton, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/23/2013 | Milton, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/30/2013 | Milton, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/14/2013 | Milton, VT | 1c | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/28/2013 | Milton, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/4/2013 | Milton, VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/25/2013 | Milton, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/1/2013 | Milton, VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/24/2013 | Pelots Bay, VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/28/2013 | Pelots Bay, VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/2/2013 | Rt. 2 - City Bay, North Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/8/2013 | Rt. 2 - City Bay, North Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/30/2013 | Rt. 2 - City Bay, North Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/16/2013 | Rt.2, South of bridge, North Hero VT | 1b | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 6/23/2013 | Rt.2, South of bridge, North Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/21/2013 | Sand Bar State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/29/2013 | Sand Bar State Park VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/5/2013 | Sand Bar State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/12/2013 | Sand Bar State Park VT | 1c | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/19/2013 | Sand Bar State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/26/2013 | Sand Bar State Park VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/9/2013 | Sand Bar State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/16/2013 | Sand Bar State Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/16/2013 | South Hero Fish and Wildlife Boat Access | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/17/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/23/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/30/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/6/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/14/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 7/22/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/4/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/9/2013 | St. Albans Bay Park VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/18/2013 | St. Albans Bay Park VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/19/2013 | St. Albans Bay Park VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/21/2013 | St. Albans Bay Park VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | St. Albans Bay Park VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/28/2013 | St. Albans Bay Park VT | 3 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/18/2013 | The Gut, Grand Isle VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/23/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/25/2013 | The Gut, Grand Isle VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 6/30/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/3/2013 | The Gut, Grand Isle VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/7/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 7/16/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/20/2013 | The Gut, Grand Isle VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/23/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/28/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/30/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/4/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/13/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/18/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/22/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/24/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/1/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/3/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/9/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 9/10/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/17/2013 | The Gut, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/1/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/8/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/15/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/23/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/29/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/12/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/20/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/27/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 2 | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/3/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/16/2013 | Vantine Fish and Wildlife Access, Grand Isle VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/9/2013 | West Shore Rd., North Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/29/2013 | West Shore Rd., North Hero VT | 1a | Visual | | | | |

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| Lake Champlain | St. Albans/the islands | 6/25/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/8/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/10/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/16/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/17/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/22/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 7/24/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/1/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/6/2013 | White's Beach, South Hero VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/7/2013 | White's Beach, South Hero VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/14/2013 | White's Beach, South Hero VT | 1b | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 8/28/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/1/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Champlain | St. Albans/the islands | 9/4/2013 | White's Beach, South Hero VT | 1a | Visual | | | | |
| Lake Carmi | | 6/26/2013 | Carmi State Park VT (beach) | 1a | tiered alert/visual | 787 | Aphanothece, Woronichinia/Coelosphaerium | <0.16 | <0.5 |

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| Lake Carmi | | 7/3/2013 | Carmi State Park VT (beach) | 1b | tiered alert/visual | 320 | Aphanothece | < 0.16 | <0.5 |
| Lake Carmi | | 7/10/2013 | Carmi State Park VT (beach) | 1b | tiered alert/visual | 5030 | Aphanothece, Microcystis | < 0.16 | <0.5 |
| Lake Carmi | | 7/17/2013 | Carmi State Park VT (beach) | 1a | tiered alert/visual | 3480 | Aphanizomenon, Aphanothece | <0.16 | <0.5 |
| Lake Carmi | | 7/24/2013 | Carmi State Park VT (beach) | 1b | tiered alert/visual | 1940 | Anabaena, Aphanizomenon, Aphanothece, Gloeotrichia | < 0.16 | <0.5 |
| Lake Carmi | | 7/31/2013 | Carmi State Park VT (beach) | 1c | tiered alert/visual | 2220 | Anabaena, Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Carmi | | 8/7/2013 | Carmi State Park VT (beach) | 1c | tiered alert/visual | 72800 | Anabaena, Aphanizomenon, Aphanothece | < 0.16 | <0.5 |
| Lake Carmi | | 8/14/2013 | Carmi State Park VT (beach) | 1b | tiered alert/visual | 16400 | Aphanizomenon, Woronichinia/Coelosphaerium | < 0.16 | <0.5 |
| Lake Carmi | | 8/21/2013 | Carmi State Park VT (beach) | 1a | tiered alert/visual | 13300 | Aphanizomenon, Woronichinia/Coelosphaerium | 0.19 | <0.5 |
| Lake Carmi | | 8/28/2013 | Carmi State Park VT (beach) | 1a | tiered alert/visual | 6610 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | 0.21 | <0.5 |
| Lake Carmi | | 9/5/2013 | Carmi State Park VT (beach) | 1a | tiered alert/visual | 12000 | Anabaena, Aphanizomenon, Aphanothece, Microcystis | < 0.16 | <0.5 |
| Lake Elmore | | 6/26/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 93 | Anabaena | <0.16 | < 0.5 |
| Lake Elmore | | 7/3/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Elmore | | 7/10/2013 | Elmore State Park VT (beach) | 1b | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Elmore | | 7/17/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 5930 | Anabaena, Aphanothece | <0.16 | < 0.5 |
| Lake Elmore | | 7/24/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 2950 | Aphanothece, Coelosphaerium | <0.16 | < 0.5 |

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| Lake Elmore | | 7/31/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 5240 | Aphanizomenon, Aphanothece, Coelosphaerium | <0.16 | < 0.5 |
| Lake Elmore | | 8/7/2013 | Elmore State Park VT (beach) | 1b | tiered alert/visual | 3220 | Anabaena, Aphanizomenon, Aphanothece | <0.16 | < 0.5 |
| Lake Elmore | | 8/14/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | < 0.5 |
| Lake Elmore | | 8/21/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 198 | Anabaena | <0.16 | < 0.5 |
| Lake Elmore | | 8/28/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 747 | possible Phormidium | <0.16 | < 0.5 |
| Lake Elmore | | 9/5/2013 | Elmore State Park VT (beach) | 1a | tiered alert/visual | 2950 | possible Phormidium, Aphanothece | <0.16 | < 0.5 |
| Lake Iroquois | | 6/26/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1a | tiered alert/visual | 1680 | Anabaena | <0.16 | <0.5 |
| Lake Iroquois | | 7/3/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1a | tiered alert/visual | 1680 | Aphanizomenon, Oscillatoria | < 0.16 | <0.5 |
| Lake Iroquois | | 7/10/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 17800 | Anabaena, Coelosphaerium | < 0.16 | <0.5 |
| Lake Iroquois | | 7/17/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 53 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | | 7/24/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 200 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | | 7/31/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 587 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | | 8/7/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 10900 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |
| Lake Iroquois | | 8/14/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 200 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | | 8/21/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1c | tiered alert/visual | 29300 | Anabaena, Coelosphaerium, Microcystis | <0.16 | <0.5 |

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| Lake Iroquois | | 8/28/2013 | Lake Iroquois, Public Beach, Hinesburg VT | 1a | tiered alert/visual | 142 | Anabaena | < 0.16 | <0.5 |
| Lake Iroquois | | 9/5/2013 | Lake Iroquois, Public Beach, Hinesburg VT | not reported | tiered alert/visual | 560 | Anabaena, Aphanizomenon | < 0.16 | <0.5 |
| Lake Memphremagog | | 6/26/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | | 7/3/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 307 | Aphanizomenon | <0.16 | <0.5 |
| Lake Memphremagog | | 7/10/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | | 7/17/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | | 7/24/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | | 7/31/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 160 | Aphanizomenon | <0.16 | <0.5 |
| Lake Memphremagog | | 8/7/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 600 | Anabaena | <0.16 | <0.5 |
| Lake Memphremagog | | 8/14/2013 | Lake Memphremagog, Prouty Beach Newport VT | not reported | tiered alert/visual | 0 | no cyanobacteria observed | <0.16 | <0.5 |
| Lake Memphremagog | | 8/21/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1c | tiered alert/visual | 0 | Coelosphaerium | <0.16 | <0.5 |
| Lake Memphremagog | | 8/28/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 3470 | Woronichinia/Coelosphaerium | <0.16 | <0.5 |
| Lake Memphremagog | | 9/5/2013 | Lake Memphremagog, Prouty Beach Newport VT | 1a | tiered alert/visual | 0 | Woronichinia/Coelosphaerium | <0.16 | <0.5 |