

Monitoring and Evaluation of Cyanobacteria in Lake Champlain



June 2012

Final Report

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This report was funded and prepared under the authority of the Lake Champlain Special Designation Act of 1990, P.L. 101-596 and subsequent reauthorization in 2002 as the Daniel Patrick Moynihan Lake Champlain Basin Program Act, H. R. 1070, through the Great Lakes Fisheries Commission. Publication of this report does not signify that the contents necessarily reflect the views of the states of New York and Vermont, the Lake Champlain Basin Program, or the U.S. Environmental Protection Agency.

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**MONITORING AND EVALUATION OF CYANOBACTERIA
IN LAKE CHAMPLAIN**

Summer 2011

Report to

Lake Champlain Basin Program

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June 1, 2012

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EXECUTIVE SUMMARY

In 2011, monitoring for potential toxin-producing cyanobacteria continued on Lake Champlain with the following specific objectives:

- Continue monitoring of BGA at the Long-term Water Quality and Biological Monitoring Project sites in partnership with the Vermont DEC, and at selected stations in the greater Burlington area, St. Albans Bay and Missisquoi Bay.
- Continue to work with volunteer citizen monitors in Missisquoi Bay, the north lake, and other selected sites (in partnership with the Lake Champlain Committee).
- Continue screening for the presence of toxins when potential toxin-producing BGA are observed.
- Continue to use a tiered BGA alert system framework, incorporating data and knowledge gained in previous years.
- Continue e-mail communication network among state and provincial agencies in Vermont, New York and Quebec to facilitate regular exchange of information about current BGA conditions and the potential for human exposure to toxins.

Collections of net and whole water plankton began in June in most locations, and continued through October. Sample sites encompassed all of Lake Champlain, but a special effort was made in Missisquoi Bay, St. Albans Bay, and the north lake, areas known to have problems with toxic blooms in the past. Citizen monitors living around the lake near 18 specific sites were recruited to collect samples from shoreline locations where algae accumulated.

In 2011, bloom conditions occurred in Missisquoi Bay and in other locations throughout Lake Champlain. Microcystin concentrations were generally low, but reached 180.82 µg/L in Missisquoi Bay. Measurable concentrations of anatoxin-*a* were only detected in one sample, from Begg's Park, New York.

Once again, our e-mail notification system worked well to keep public health officials informed about algal and toxin conditions. In 2011, we continued to collaborate with Vermont Department of Health to post information about blue-green algae and the weekly results of our testing on their web site to improve communication with all users of Lake Champlain. Information from all locations where samples were tested was included on the website.

INTRODUCTION

Lake Champlain is one of the largest lakes in the United States and is often called the "Sixth Great Lake." Although primarily a recreational lake, it also serves as a source of drinking water and a site for the disposal of municipal wastes in communities throughout the basin.

In response to a dog-poisoning attributed to cyanobacteria toxins in 1999, the LCBP initiated a study to investigate the occurrence of potential toxin-producing cyanobacteria and their toxins in Lake Champlain in 2000. Over the following years, this monitoring program has evolved to document the presence and extent of toxic cyanobacteria blooms in Lake Champlain, and the levels of cyanotoxins that have occurred.

In addition, a project supported through NOAA's MERHAB program began in 2002 and continued through 2007 on Lake Champlain, through a partnership between UVM, SUNY-ESF and SUNY-Plattsburgh. The project has multiple objectives, including documenting the distribution of cyanotoxins in the lake, developing a rapid screening method for anatoxin-*a*, and developing methods for monitoring throughout the lower Great Lakes (Lakes Erie, Ontario and Champlain). Data collected from this project are not available rapidly enough to drive the weekly public alert system, but data are regularly shared among the project investigators.

Beginning in 2003, regular monitoring has been conducted by UVM in partnership with the LCBP long-term monitoring program and with citizen monitors recruited with the assistance of the Lake Champlain Committee. In 2011 we continued this effort with the following specific objectives:

Objectives:

- Continue monitoring of BGA at the Long-term Water Quality and Biological Monitoring Project sites in partnership with the Vermont DEC, and at selected stations in the greater Burlington area, St. Albans Bay and Missisquoi Bay.
- Continue to work with volunteer citizen monitors in Missisquoi Bay, the north lake, and other selected sites (in partnership with the Lake Champlain Committee).
- Continue screening for the presence of toxins when potential toxin-producing BGA are observed.
- Continue to use a tiered BGA alert system framework, incorporating data and knowledge gained in previous years
- Continue e-mail communication network among state and provincial agencies in Vermont, New York and Quebec to facilitate regular exchange of information about current BGA conditions and the potential for human exposure to toxins.

METHODS

Field Collection

To survey plankton populations lakewide, we established partnerships with the VT DEC and NY DEC staff conducting the LCBP long-term monitoring program. VT DEC staff collected plankton samples from the 15 LTMP sites during their routine collections (Tables 1, Figure 1). Working with the Lake Champlain Committee, we also recruited volunteers to sample shoreline locations in Missisquoi Bay, Maquam Bay, and other areas of the lake (Table 2, Figure 1). We also sampled sites in Missisquoi Bay, St. Albans Bay, and Burlington Bay, where the highest population density of basin residents live and two large water supply systems draw their water.

Frequency. Monitoring for the presence of BGA began in June at the LTMP sites and at the UVM sites and in early July at the citizen monitoring sites. The LTMP sites were sampled approximately biweekly regardless of bloom conditions, as dictated by the state's regular program activities. Frequency of sample collection in Burlington Bay, Missisquoi Bay, and St. Albans Bay was bi-weekly or weekly, as determined following the tiered alert system framework (Table 3). This framework, based on recommendations in Chorus and Bartram (1999) calls for less frequent sampling initially, then weekly sampling once bloom conditions appear. Citizen monitors sampled weekly from July through August. In Missisquoi and St. Albans Bay, weekly sampling was initiated in July and continued through October, when cell densities indicated the decline of the bloom.

Analytical Parameters. The following types of samples were collected in Burlington Bay, St. Albans Bay and Missisquoi Bay during 2011:

- whole water and net plankton
- whole water for total nitrogen
- whole water for total phosphorus
- whole water for toxins (the analysis of this parameter began when microscopic analysis indicated potential toxin-producing taxa have reached densities of concern)

At the LTMP sites, only net plankton samples were collected for this project; however, total nitrogen, total phosphorus, and chlorophyll samples were collected as part of the Long-Term Biomonitoring Project.

Sample Collection. Net plankton samples were obtained using a 63- μ m Wisconsin net. A single 3 m tow was collected, placed in a cooler, and transported back to the laboratory where the total volume was recorded and a subsample was preserved for analysis.

Total nitrogen, total phosphorus, and whole water plankton samples were collected by surface grab sampling. Two replicates were collected for each parameter.

The following tables and maps document sampling locations on Lake Champlain.

Table 1. Location of monitoring sites sampled by UVM and VT DEC.

| Sample site – Location or number | Latitude | Longitude |
|---|-----------------|------------------|
| Alburgh | 44°59.5548' | 73°12.8382' |
| Highgate Cliffs | 45°00.494' | 73°05.977' |
| Highgate Springs | 44°59.506' | 73°06.803' |
| Rock River Access | 44°59.3124' | 73°05.2914' |
| Rte 78 Access | 44°58.078' | 73°13.267' |
| St. Albans Boat Launch | 44°47.6544' | 73°10.3362' |
| North Beach | 44°29.4084' | 73°14.2536' |
| Red Rocks Beach | 44°26.5134' | 73°13.4664' |
| VTDEC Sta02 | 43°42.89' | 73°22.98' |
| VTDEC Sta04 | 43°57.10' | 73°24.47' |
| VTDEC Sta07 | 44°07.56' | 73°24.77' |
| VTDEC Sta09 | 44°14.53' | 73°19.75' |
| VTDEC Sta16 | 44°25.55' | 73°13.92' |
| VTDEC Sta19 | 44°28.26' | 73°17.95' |
| VTDEC Sta21 | 44°28.49' | 73°13.90' |
| VTDEC Sta25 | 44°34.92' | 73°16.87' |
| VTDEC Sta33 | 44°42.07' | 73°25.09' |
| VTDEC Sta34 | 44°42.49' | 73°13.61' |
| VTDEC Sta36 | 44°45.37' | 73°21.30' |
| VTDEC Sta40 | 44°47.12' | 73°09.73' |
| VTDEC Sta46 | 44°56.90' | 73°20.40' |
| VTDEC Sta50 | 45°00.80' | 73°10.43' |
| VTDEC Sta51 | 45°02.50' | 73°07.78' |

Table 2. Location of monitoring sites sampled by citizen monitors.

| Site | Description of Location |
|----------------------------|---|
| Vermont | |
| Carry Bay | Savage Pt. East |
| Chapman Bay | southwest of Canadian border |
| City Bay | middle of North Hero, eastern side, off of Rte. 2 |
| Donaldson Point | northeast of Sandy Pt. |
| High Rocks | northeast of Rock River Bay |
| Highgate Springs- Shipyard | southwest of boat ramp |
| Larrabees Point | Shoreham, Lat 43° 51.325', Lon 073° 22.594' |
| Kingsland Bay | Ferrisburgh |
| Maquam Bay | Boat ramp at the town beach in Swanton |
| North Hero State Park | southeast of Stephenson Pt. |
| Pelots Bay | Savage Pt. South |
| St. Albans Bay Park | State Park, off of Rte. 36 |
| New York | |
| Beggs Park | Town Beach at Essex |
| Point Au Roche State Park | St. Armand Beach |
| Rouses Point | water treatment plant, near flushing line |
| Willsboro Bay | near water filtration intake |

Figure 1. 2011 sampling sites in Lake Champlain.

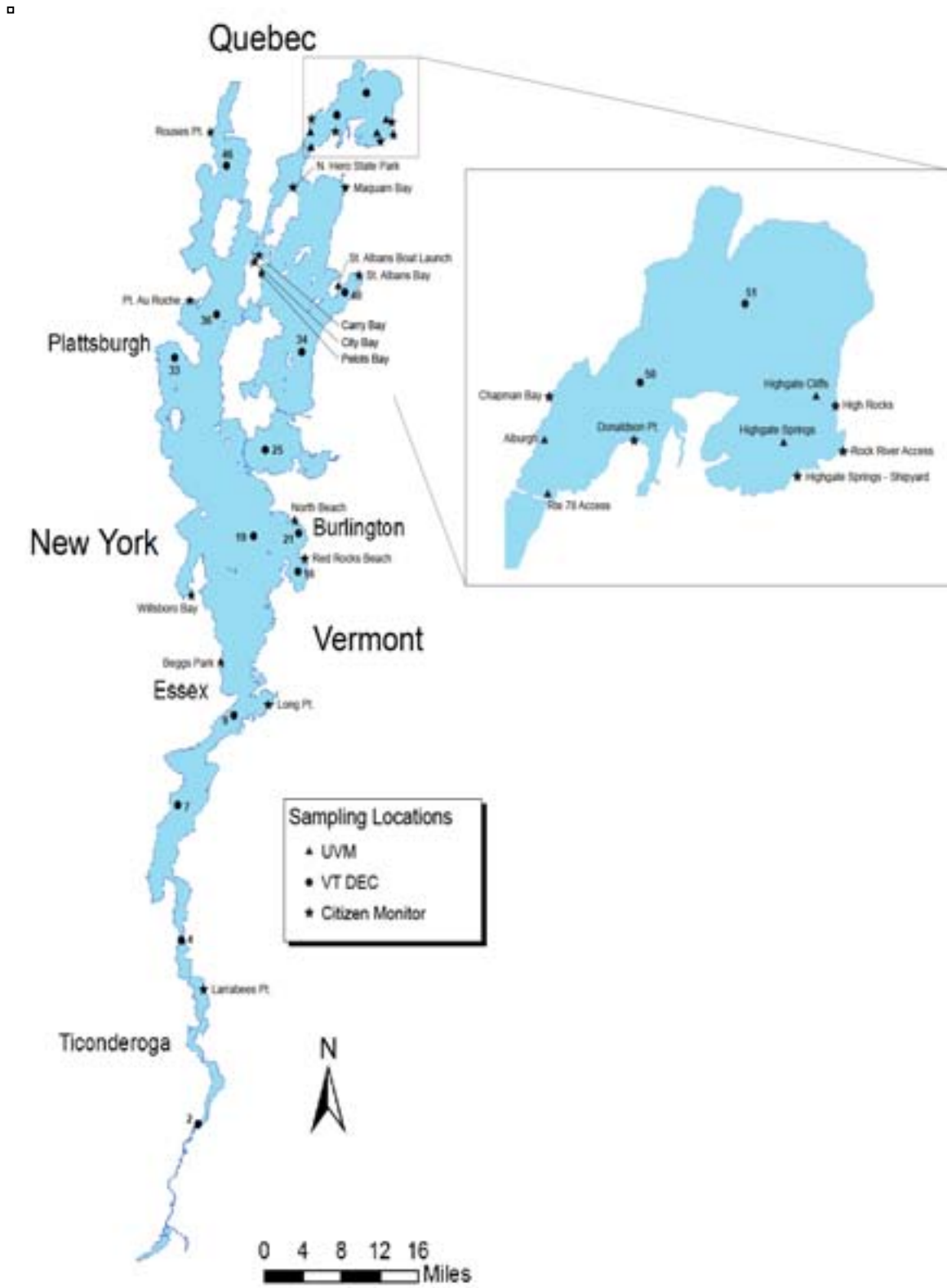


Table 3. Outline of our prototype tiered sampling and alert framework.

Qualitative Sampling

Frequency: 2/month

Collect: Vertical plankton tows (63- μ m net, upper 3 m)
Screened within 48 hours

Conclusions: If potential toxin-producing taxa observed,
proceed to *Quantitative sampling*

Quantitative Sampling

Frequency: 2/month

Collect: Vertical plankton tow (63- μ m net, upper 3m)
Full enumeration within 48 hours

Conclusions: If BGA reaches densities reach 2000 cells/mL,
proceed to *Vigilance level*

Vigilance Level

Frequency: 1/wk at midday

Collect: Vertical plankton tow (63- μ m net, upper 3m)
Full enumeration within 48 hours

Conclusions: If BGA exceed 4,000 cells/mL, proceed to *Alert Level 1*
Return to *Quantitative sampling* if densities fall below 2,000 BGA cells/mL
Notify public health officials that BGA are abundant and blooms could form

Alert Level 1

Frequency: 1/wk at midday (or more frequently as needed)

Collect: Whole water phytoplankton samples
Whole water chlorophyll *a*
Whole water toxin samples

Conclusions: If microcystin concentration exceeds 6 μ g/L (VDH recreational standard),
proceed to *Alert Level 2*
Notify public health officials of potential risks to humans and animals

Alert Level 2

Frequency: 1/wk at mid-day (or more frequently as weather conditions dictate)

Collect: As for Alert Level 1

Conclusions: Return to *Alert Level 1* if microcystin concentration drops below 6 μ g/L
Notify public health officials that significant risk to humans and animals exists.
Public Health Advisories should be issued by appropriate agencies.

Preservation and Storage. Nalgene high-density polyethylene bottles were used for all samples, excluding total nitrogen samples which were collected in 50 mL polypropylene centrifuge tubes. Total phosphorus containers were cleaned with 2.4 N hydrochloric acid solution prior to use. Nitrogen samples were preserved with sulfuric acid to a pH less than 2 and stored at 4°C until analysis. Total phosphorus samples were frozen until analysis. Plankton samples were preserved with 1% Lugols iodine solution and stored in the dark until analysis. Lake water samples for toxin analysis were preserved in one of two ways: filtered and frozen upon return to the lab, filtered and delivered for analysis to Vermont Department of Health (VDH).

Sample Analysis

Net and Whole Water Plankton. Plankton were analyzed either as qualitative or quantitative samples. Initially samples were evaluated qualitatively: all taxa present were noted and recorded. Once potentially toxic cyanobacteria were identified in the samples, evaluation became quantitative; individual algal units in the samples were identified and enumerated, and densities were calculated for each taxon. Whole water samples were collected when blooms were too dense to sample effectively by net samples; the same quantitative counting method, described below, was applied to both sample types.

For both sample types, an aliquot of well-mixed sample was placed in a Sedgwick Rafter cell and allowed to settle for 10 minutes. Slides were examined at 100X with phase contrast using inverted Olympus IX70 and IX71 microscopes. For qualitative screening, the entire chamber was scanned and algal taxa present were recorded. For quantitative screening, algal units were identified and enumerated. Counting continued until 100 cells of the most abundant genus had been observed or at least 10 fields had been examined. Algal units were categorized by size (single cells, fragments of colonies or filaments, small, medium, or large colonies or filaments). The enumerated natural units were multiplied by a cell factor to estimate cell densities (Table 4). Cell densities were extrapolated to reflect plankton populations in the original lake water.

Total Phosphorus. Total phosphorus samples were thawed and mixed thoroughly. An aliquot (generally 5 mL) was digested using ammonium persulfate (1998) and analyzed following Quikchem™ Method 10-115-01-1-F using a Lachat Quikchem™ 8000 Series Flow Injection Analyzer.

Total Nitrogen. Total nitrogen samples were analyzed using persulfate digestion (APHA 1998) and cadmium reduction following Quikchem™ Method 10-107-06-2-H using a Lachat Quikchem™ 8000 Series Flow Injection Analyzer.

Table 4. Cell factors used to estimate field densities of colonial algae.

| Taxon | Unit Category | Estimated Cells/Unit | Cell Factor |
|---|---------------|--|-------------|
| <i>Anabaena spp.</i> , <i>Aulacoseira spp.</i> , <i>Fragilaria spp.</i> | fragment | 1 – 20 | 10 |
| | small | 20 – 100 | 60 |
| | medium | 100 – 1000 | 500 |
| | large | >1000 | 1000 |
| <i>Microcystis spp.</i> , <i>Coelosphaerium spp.</i> | small | <100 | 50 |
| | medium | 100 - 1000 | 500 |
| | large | >1000 | 1000 |
| <i>Gloeotrichia spp.</i> | fragment | single trichome quarter of a colony | 20 |
| | small | colony | 2500 |
| | medium | half of a colony | 5000 |
| | large | entire colony | 10,000 |
| <i>Aphanizomenon spp.</i> | fragment | single trichome | measured |
| | small | small flake | 200 |
| | medium | medium flake | 500 |
| | large | large flake | 1000 |

Toxin Sample Preparation. Filters for analysis of toxins by high performance liquid chromatography (HPLC) at the Vermont Department of Health were placed on ice and delivered to the lab within 24 hours. Filters for ELISA assay by UVM were placed in 15 mL glass centrifuge tubes with Teflon-lined caps in 8 mL of 50% methanol, shaken well and stored at -80°C until analysis.

Microcystin(s) by ELISA. Toxin samples in 50% methanol were thawed, shaken and re-frozen two times before beginning analysis. Extracted samples were diluted with deionized water until methanol represented less than 5% of the total volume, following recommendations to improve the accuracy of the method (Metcalf et al. 2000). Microcystin plate kits were purchased from Envirologix Inc. (Portland, ME).

Samples were run in duplicate following manufacturer's instructions on a KC Jr. plate reader (Biotek Instruments), utilizing standards provided in the kit. Mean values were used to determine the toxin concentration of each pair of samples. Samples exceeding the range recommended by the kit were diluted and re-analyzed. Samples below the range were also re-analyzed using manufacturer recommended dilution procedures for the standards.

Anatoxin-a by HPLC. At Vermont Department of Health, algal material was freeze-dried and then extracted with acidified methanol. Solid phase extraction cartridges were eluted with 100% methanol. Samples were analyzed following James et al. (1997).

RESULTS

Cyanobacteria and Toxins at the Monitoring Sites

The total number of samples collected and screened for phytoplankton densities and toxin analysis was about 500 in 2011 (Table 5).

Table 5. Number of quantitative samples collected and analyzed in the cyanobacteria monitoring program in 2011.

| Sample Type | Phytoplankton* | | Microcystin | Anatoxin*** |
|--|----------------|----------------|-------------|-------------|
| | Net | Whole Water ** | Whole Water | Whole Water |
| Number of Samples Collected | 256 | 234 | 373 | 299 |
| Number of Samples Analyzed | 256 | 218 | 88 | 82 |
| * Analyzed using Rapid Count Protocol | | | | |
| ** does not include wwp samples that had companion net samples | | | | |
| ***Analyzed at VDH | | | | |

The alert status reached and the maximum density of potentially toxic cyanobacteria cells at each site monitored are listed in Table 6. *Aphanizomenon* spp., *Microcystis* spp. and *Anabaena flos-aquae* were all widely distributed at sites across Lake Champlain.

Table 6. Summary of monitoring status achieved and cyanobacteria generic composition at monitoring stations in 2011.

LCBP Long Term Monitoring Program Sites

| Region | Station/Location | Monitoring Status | Date Achieved | Maximum Density of Potentially Toxic Cells/mL | Cyanobacteria Present When Max Density Achieved |
|----------------|-------------------------|--------------------------|----------------------|--|--|
| South | 2. Benson Landing | Quantitative | 06/07/11 | 824 (08/22/11) | <i>Microcystis, Aphanizomenon</i> |
| | 4. Crown Point | Vigilance | 07/05/11 | 2,217 (07/05/11) | <i>Aphanizomenon</i> |
| | 7. Cole Bay | Alert 1 | 08/18/11 | 8,095 (08/18/11) | <i>Anabaena, Aphanizomenon</i> |
| | 9. Diamond Island | Alert 1 | 08/18/11 | 9,250 (08/18/11) | <i>Anabaena, Aphanizomenon</i> |
| Main | 16. Shelburne Bay | Quantitative | 06/17/11 | 1,237 (08/19/11) | <i>Anabaena, Aphanizomenon</i> |
| | 19. Main Lake | Alert 1 | 08/19/11 | 5,053 (08/19/11) | <i>Anabaena, Aphanizomenon</i> |
| | 21. Burlington Harbor | Vigilance | 08/19/11 | 3673 (08/19/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
| | 25. Malletts Bay | Quantitative | 06/03/11 | 72 (10/04/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
| Northwest | 33. Cumberland Bay | Vigilance | 09/01/11 | 2,462 (09/01/11) | <i>Microcystis, Aphanizomenon</i> |
| | 36. Point au Roche | Quantitative | 06/03/11 | 1573 (09/01/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
| | 46. Alburgh Center | Quantitative | 06/08/11 | 505 (08/12/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
| Northeast | 34. Inland Sea | Quantitative | 06/14/11 | 1,454 (08/09/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
| | 40. St. Albans Bay | Quantitative | 06/14/11 | 1,640 (08/09/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
| Missisquoi Bay | 50. Missisquoi Bay | Vigilance | 08/12/11 | 2,361 (08/12/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |

| | | | | | |
|--|--------------------|---------|----------|---------------------|---|
| | 51. Missisquoi Bay | Alert 1 | 07/19/11 | 7,987 (07/19/11) | <i>Anabaena, Microcystis, Aphanizomenon</i> |
|--|--------------------|---------|----------|---------------------|---|

UVM Monitoring Sites

| Region | Location | Monitoring Status | Date Achieved | Highest Microcystin (µg/L) Observed | Maximum Density of Potentially Toxic Cells/mL | Cyanobacteria Present When Max Density Achieved |
|----------------|---------------------------|-------------------|---------------|-------------------------------------|---|---|
| Main | North Beach-shoreline | Quantitative | 06/06/11 | not measured | 0 | <i>not observed</i> |
| | Red Rocks Beach-shoreline | Quantitative | 06/06/11 | not measured | 0 | <i>not observed</i> |
| Northeast | St. Albans Boatlaunch | Alert 1 | 08/02/11 | 0.05 (09/27/11) | 20,340 (08/09/11) | <i>Anabaena, Aphanizomenon</i> |
| Missisquoi Bay | Rte. 78 Shoreline | Quantitative | 09/20/11 | not measured | 8,796 (09/20/11) | <i>Anabaena, Aphanizomenon</i> |
| | Rte. 78 Access | Alert 1 | 08/09/11 | 1.27 (10/04/11) | 32,357 (08/09/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | Alburgh | Quantitative | 06/07/11 | not measured | 1,388 (09/27/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | Alburgh shoreline | Alert 1 | 07/26/11 | 1.38 (09/20/11) | 10,952 (09/20/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | Highgate Cliffs | Alert 1 | 07/05/11 | 3.08 (08/09/11) | 41,161 (08/09/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | Highgate Springs | Alert 2 | 08/09/11 | 10.39 (08/09/11) | 1,039,733 (08/09/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |

Citizen Monitoring Sites

| Region | Location | Monitoring Status | Date Achieved | Highest Microcystin (µg/L) Observed | Maximum Density of Potentially Toxic Cells/mL | Cyanobacteria Present When Max Density Achieved |
|-----------|---------------------------|-------------------|---------------|-------------------------------------|---|---|
| South | Larrabee's Point | Vigilance | 07/24/11 | not measured | 2,017 (07/24/11) | <i>Anabaena</i> |
| Main | Beggs Park | Alert 1 | 07/23/10 | 0.01 (07/31/11) | 4,551 (07/23/11) | <i>Aphanizomenon</i> |
| | Kingsland Bay | Alert 1 | 08/21/11 | 0.01 (08/21/11) | 6,629 (08/21/11) | <i>Aphanizomenon</i> |
| | North Beach-shoreline | Alert 1 | 08/29/11 | 0.03 (08/22/11) | 6,007 (08/29/11) | <i>Anabaena, Aphanizomenon</i> |
| | Red Rocks Beach-shoreline | Alert 1 | 07/25/11 | 0.01 (08/29/11) | 7,497 (08/29/11) | <i>Anabaena, Aphanizomenon</i> |
| | Willsboro Bay | Vigilance | 08/21/11 | not measured | 3,806 (08/21/11) | <i>Anabaena, Aphanizomenon</i> |
| Northwest | Point au Roche | Alert 1 | 08/29/11 | 0.01 (08/29/11) | 5,209 (08/29/11) | <i>Anabaena, Aphanizomenon</i> |
| | Rouses Point | Quantitative | 08/01/11 | not measured | 772 (09/06/11) | <i>Aphanizomenon</i> |
| Northeast | Carry Bay | Alert 1 | 07/24/11 | 0.09 (07/24/11) | 17,240 (07/24/11) | <i>Anabaena, Aphanizomenon</i> |
| | City Bay | Vigilance | 08/29/11 | not measured | 2,631 (08/29/11) | <i>Microcystis</i> |
| | Maquam Bay | Quantitative | 07/05/11 | not measured | 1,158 (07/26/11) | <i>Aphanizomenon</i> |
| | North Hero State Park | Alert 1 | 07/19/11 | 0.08 (08/14/11) | 14,057 (08/29/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | Pelots Bay | Alert 1 | 08/01/11 | 0.11 (08/29/11) | 34,462 (08/29/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | St. Albans Bay Park | Alert 1 | 07/25/11 | 0.14 (07/25/11) | 78,743 (08/01/11) | <i>Anabaena, Aphanizomenon</i> |

| | | | | | | |
|----------------|--------------------------|-----------|----------|----------------------|-----------------------|---|
| Missisquoi Bay | Chapman Bay | Vigilance | 08/07/11 | not measured | 2,850 (08/07/11) | <i>Anabaena, Aphanizomenon</i> |
| | Donaldson Point | Alert 1 | 08/27/11 | 0.18 (08/27/11) | 11,426 (08/27/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | High Rocks | Alert 2 | 08/07/11 | 8.83 (08/07/11) | 426,000 (08/07/11) | <i>Anabaena</i> |
| | Highgate Spings-Shipyard | Alert 2 | 09/25/11 | 180.82 (09/25/11) | 940,549 (09/25/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| | Rock River Access | Alert 2 | 08/01/11 | 5.95 (08/01/11) | 120,000 (08/01/11) | <i>Anabaena, Microcystis</i> |

Supplemental samples collected when bloom conditions were apparent.

| Location | Monitoring Status | Date Achieved | Highest Microcystin (µg/L) Observed | Maximum Density of Potentially Toxic Cells/mL | Cyanobacteria Present When Max Density Achieved |
|---|-------------------|---------------|-------------------------------------|---|---|
| Melo Boat Slip* | Alert 1 | 08/18/11 | not measured | 1,990 (07/13/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| Donaldson Point*** | Alert 1 | 08/18/11 | 0.14 08/18/11 | 129,823 (10/05/11) | <i>Anabaena, Aphanizomenon, Microcystis</i> |
| Dunham Bay*** | Alert 1 | 08/22/11 | 0.82 (09/21/11) | 79,333 (08/22/11) | <i>Anabaena, Aphanizomenon</i> |
| Holiday Point** | Quantitative | 09/09/11 | not measured | 941 (09/09/11) | <i>Anabaena, Aphanizomenon, Microcystis, Oscillatoria</i> |
| North Hero House dock* | Quantitative | 09/28/11 | not measured | 0 (09/28/11) | <i>Not observed</i> |
| Mallets Bay-NW shore near Sandbar Motel** | Alert 1 | 06/27/11 | 0.04 (06/27/11) | 2,088,000 (06/27/11) | <i>Anabaena</i> |
| Button Bay** | Quantitative | 07/13/11 | not measured | 474 (07/13/11) | <i>Anabaena, Aphanizomenon</i> |
| Northwest Bay** | Alert 1 | 08/18/11 | not measured | 5,774 (08/18/11) | <i>Anabaena, Aphanizomenon</i> |

Sample collected by UVM*, VT DEC**, Citizen Monitor***

Microcystin was present in low concentrations at many sites throughout the 2011 summer season (Table 7). A few sites on the eastern side of Missisquoi Bay reached alert level 2. The maximum microcystin observed was 180.8 µg/L at Highgate Springs-Shipyard. Measurable anatoxin-*a* was only detected once, at Begg’s Park, New York on July 23, 2011.

Table 7. Number of samples tested and maximum concentration of microcystins measured in 2011.

| Region | Collected by | Location | No. Samples Tested | Maximum Microcystin Conc. (µg/L) |
|----------------|-----------------|-----------------------------|--------------------|----------------------------------|
| Main Lake | Citizen Monitor | Beggs Park | 1 | 0.01 |
| | | Kingsland Bay Beach | 1 | 0.01 |
| | | North Beach shoreline | 2 | 0.03 |
| | | Red Rocks Beach shoreline | 1 | 0.01 |
| | UVM | Melo Boat Slip | 1 | 0.02 |
| Mallets Bay | VT DEC | NW shore near Sandbar Motel | 1 | 0.04 |
| Missisquoi Bay | Citizen Monitor | Donaldson Point | 1 | 0.18 |
| | | High Rocks | 5 | 8.83 |
| | | Highgate Springs-Shipyard | 4 | 180.82 |
| | | Rock River Access | 4 | 5.95 |
| | UVM | Alburgh | 1 | 0.05 |
| | | Alburgh-Shore | 7 | 1.47 |
| | | Donaldson Point | 1 | 0.14 |
| | | Highgate Cliffs | 18 | 3.42 |
| | | Highgate Springs | 12 | 12.72 |
| | | Rte 78 Access | 6 | 1.55 |
| | | | | |
| Northeast Lake | Citizen Monitor | Carry Bay | 1 | 0.09 |
| | | Dunham Bay | 2 | 0.82 |
| | | North Hero State Park | 3 | 0.08 |

| | | | | |
|----------------|-----------------|----------------------------|---|------|
| | | Pelots Bay | 3 | 0.11 |
| Northwest Lake | Citizen Monitor | Point Au Roche State Park | 1 | 0.01 |
| South Lake | Citizen Monitor | Larrabee's Point | 1 | 0.02 |
| St. Albans Bay | Citizen Monitor | St. Albans Bay Park | 4 | 0.14 |
| | UVM | St. Albans Bay Boat Launch | 7 | 0.05 |

Nutrients at the Cyanobacteria Monitoring Sites

Concentrations of total phosphorus (TP) and total nitrogen (TN) were averaged by date for monitoring sites in Burlington Bay, St. Albans Bay, and Missisquoi Bay. Mean concentrations of both nutrients were generally highest in Missisquoi Bay, but this pattern varied early in the season (Figure 2).

We also calculated the ratio of TN:TP in Burlington Bay, St. Albans Bay, and Missisquoi Bay (Figure 3). At all sites, the ratio remained below 29:1 except in late fall in the main lake. Additional analysis of the relationship between nutrient concentrations, nutrient ratios and phytoplankton composition is underway and will be part of separate publications.

Figure 2. Total Phosphorus concentrations (mg/L) in Missisquoi Bay, St. Albans Bay, and the Main Lake near Burlington over the 2011 growing season. Main Lake data is from VTDEC Stations 19 and 21 and UVM data, Missisquoi Bay data is from VTDEC Stations 50 and 51 and UVM data, and St. Albans Bay data is from VTDEC Station 40 and UVM data.

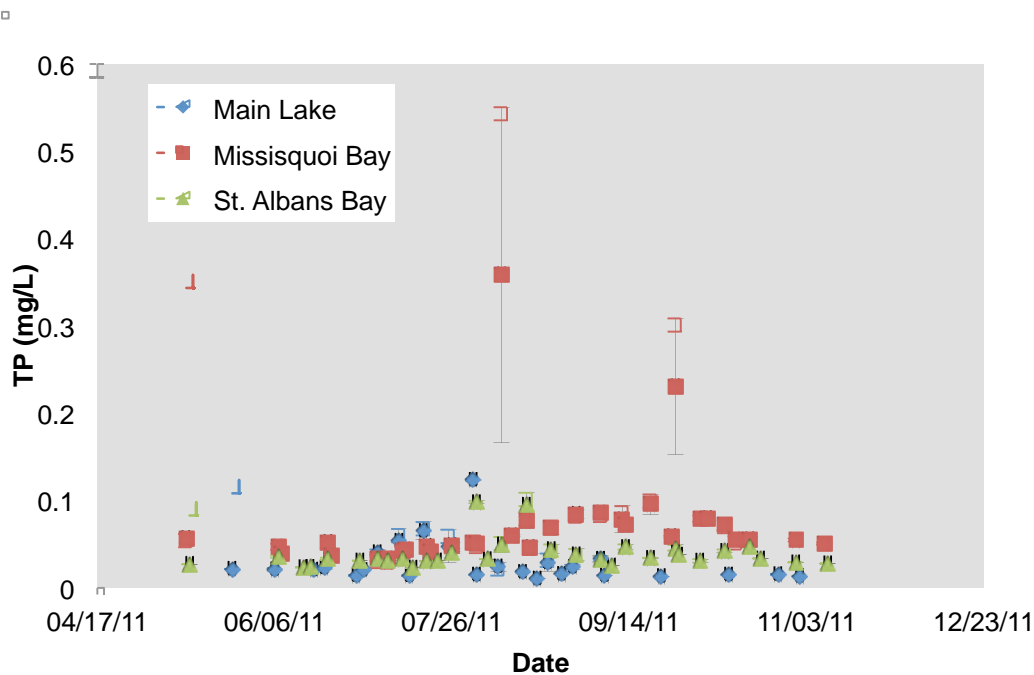
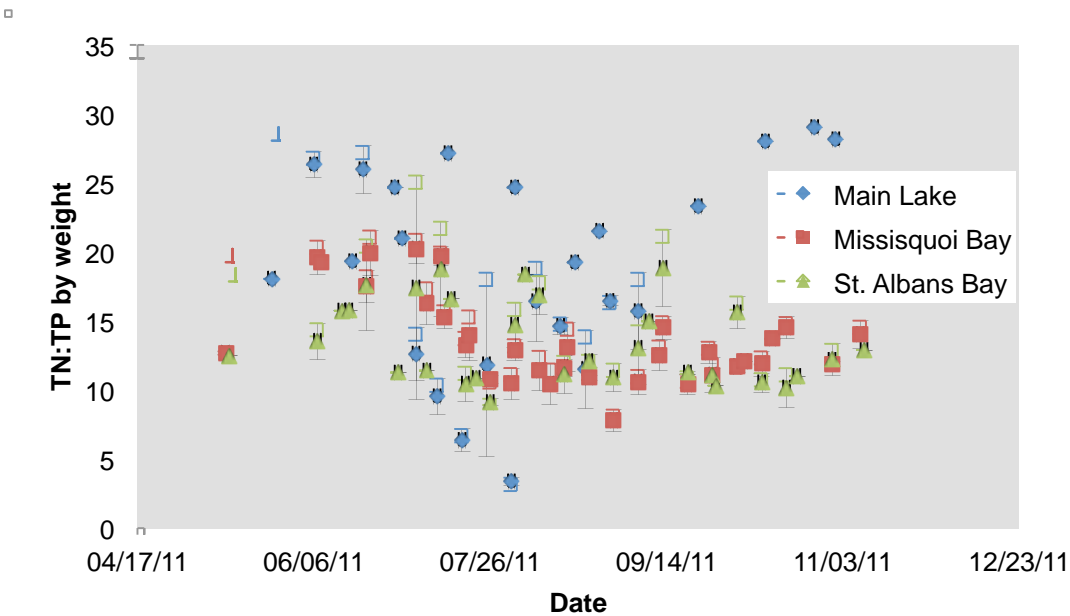


Figure 3. 2011 TN:TP ratios by weight across all sampling sites in Missisquoi Bay, St. Albans Bay, and the Main Lake near Burlington.



DISCUSSION AND CONCLUSIONS

Comparison of Patterns of Cyanobacteria and Toxins 2003-2011

The median densities of phytoplankton differed between Missisquoi Bay, St. Albans Bay, and Burlington Bay (Table 8), with St. Albans Bay showing the highest median density of potentially toxic cyanobacteria for the 2011 season. Seasonal mean generic composition (Figures 4-6) was within the range of previous years. The median microcystin concentrations in all lake segments were generally low, consistent with what has been observed in prior years (Table 9).

Table 8. Seasonal median densities of phytoplankton in Missisquoi, Burlington, and St. Albans Bays 2003-2011.

| Median Densities per Year (cells/mL) | | | | | | | | | | |
|---|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Region | | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
| Missisquoi Bay | Total Phytoplankton | 15360 | 16533 | 11505 | 19677 | 181 | 2745 | 1254 | 1125 | 1525 |
| | Total Potentially Toxic Cyanobacteria | 6456 | 5933 | 3723 | 10295 | 0 | 1841 | 665 | 464 | 991 |
| Burlington Bay | Total Phytoplankton | 980 | 265 | 705 | 540 | 134 | 886 | 399 | 2552 | 965 |
| | Total Potentially Toxic Cyanobacteria | 312 | 70 | 188 | 111 | 34 | 115 | 96 | 526 | 728 |
| St. Albans Bay | Total Phytoplankton | 10024 | 5333 | 5587 | 5607 | 1635 | 2564 | 491 | 902 | 1825 |
| | Total Potentially Toxic Cyanobacteria | 5374 | 897 | 2624 | 4042 | 673 | 2296 | 207 | 647 | 1248 |

Figure 4. Seasonal mean percent generic composition of phytoplankton in Missisquoi Bay, 2003-2011.

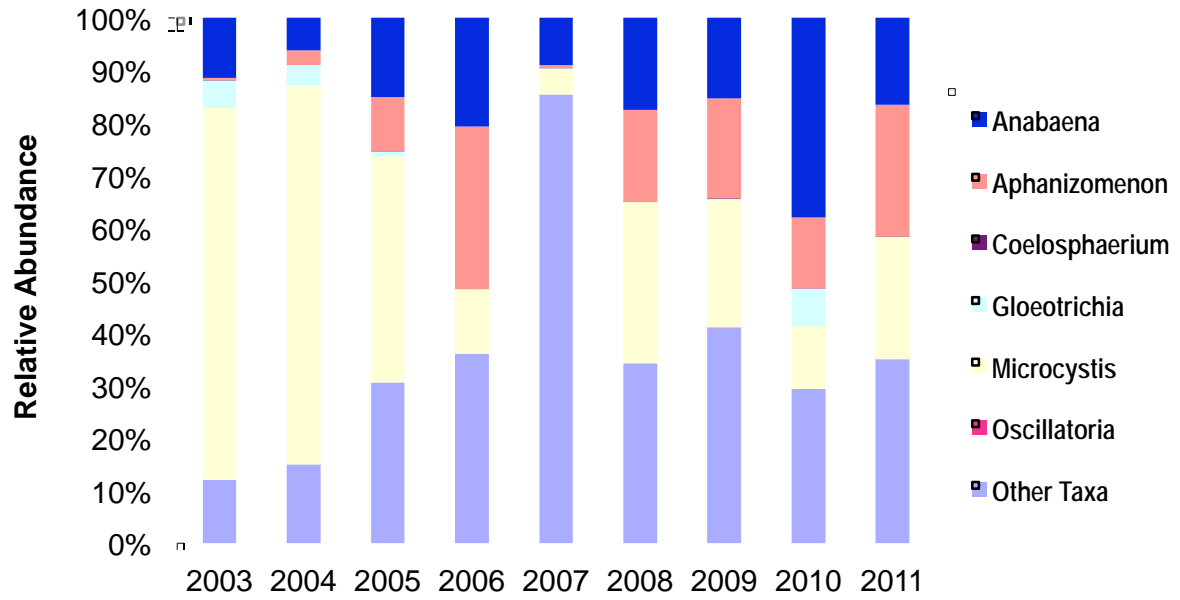


Figure 5. Seasonal mean percent generic composition of phytoplankton in St. Albans Bay, 2003-2011.

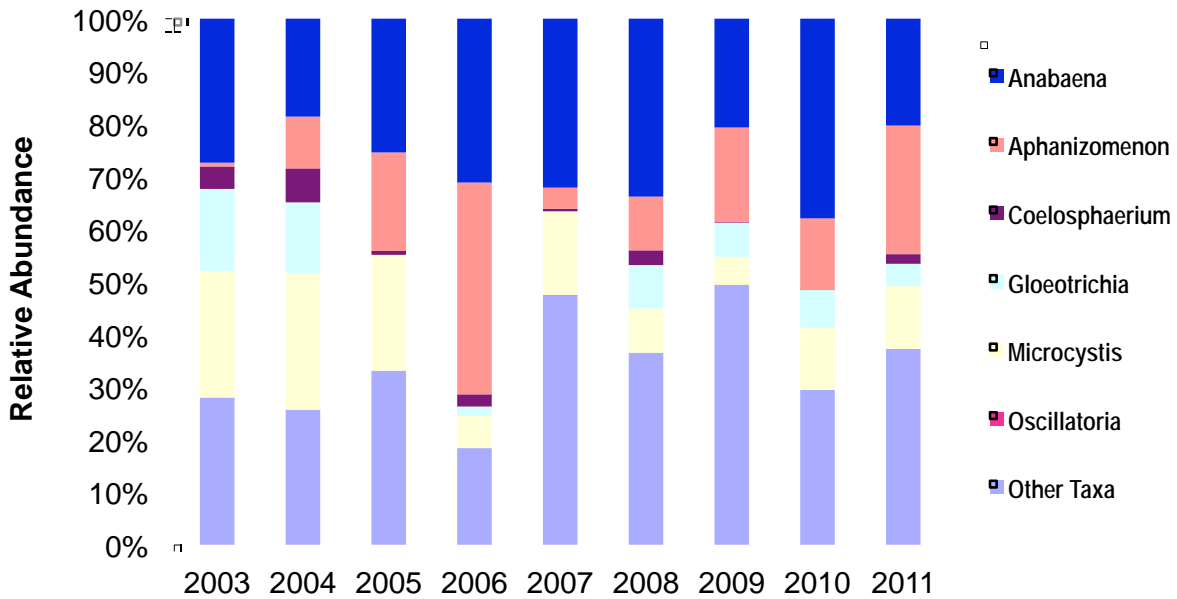


Figure 6. Seasonal mean percent generic composition of phytoplankton in Burlington Bay, 2003-2011.

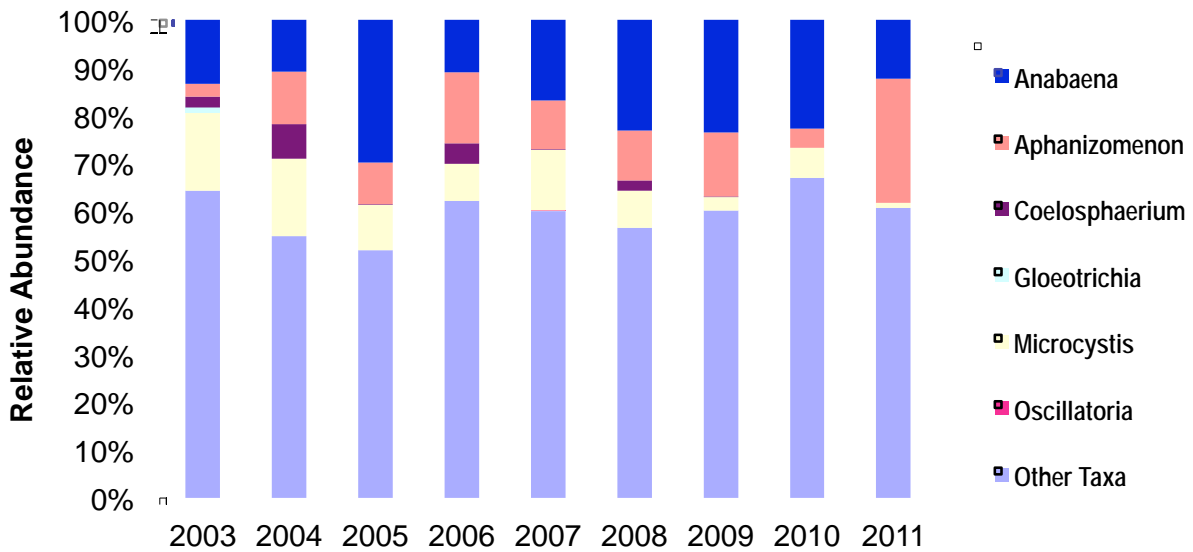


Table 9. Microcystin concentrations ($\mu\text{g/L}$) in various lake segments, 2003 – 2011.

| Lake Region | | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|--------------------------|--------|-------------|-------------|-------------|--------------|-------------|--------------|--------------|-------------|---------------|
| Burlington Bay/Main Lake | Median | 0.02 | | 7.42 | 0.04 | 2.82 | 0.47 | 0.03 | 0.13 | 0.01 |
| | Range | ND - 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 – 0.03 |
| | n | 9 | | 2 | 6 | 2 | 3 | 6 | 5 | 6 |
| Missisquoi Bay | Median | 0.20 | 0.88 | 0.74 | 0.64 | | 2.30 | 0.54 | 0.03 | 0.65 |
| | Range | ND - 23.90 | ND - 6490 | ND - 22.10 | 0.03 - 21.29 | | 0.06 - 94.58 | 0.03 - 54.16 | 0.01 - 0.12 | 0.02 – 180.82 |
| | n | 160 | 142 | 125 | 134 | | 86 | 29 | 10 | 59 |
| Northeast Bays | Median | 0.05 | 0.51 | 0.08 | 0.27 | 0.05 | 0.30 | 0.06 | 0.03 | 0.07 |
| | Range | ND - 0.18 | ND - 17.50 | ND - 0.19 | 0.04 - 42.14 | 0.04-0.07 | 0.03 - 22.50 | 0.03 - 0.08 | 0.03 - 0.13 | 0.01 – 0.82 |
| | n | 6 | 8 | 7 | 14 | 4 | 4 | 3 | 3 | 10 |
| South Lake | Median | 0.53 | | 0.05 | | | | | | 0.02 |
| | Range | ND - 1.4 | | ND - 0.067 | | | | | | 0.02 – 0.02 |
| | n | 3 | | 3 | | | | | | 1 |
| St. Albans Bay | Median | 0.05 | 0.04 | 0.44 | 0.06 | 0.05 | 0.04 | 0.02 | 0.09 | 0.04 |
| | Range | ND - 0.46 | ND - 22.50 | 0.06 - 0.94 | 0.01 - 0.43 | 0.03-0.54 | 0.02 - 0.12 | 0.01 - 0.17 | 0.01 - 0.80 | 0.02 – 0.14 |
| | n | 16 | 22 | 15 | 34 | 40* | 10 | 4 | 8 | 11 |
| Northwest Lake | Median | | | | | | | | 0.03 | 0.01 |
| | Range | | | | | | | | 0.03 - 0.03 | 0.01 – 0.01 |
| | n | | | | | | | | 1 | 1 |

* includes extra samples as part of the SolarBee monitoring effort

Coordination

Coordination meetings were held with Vermont Department of Health officials in May 2011, and an e-mail distribution list that included about 40 partner organizations and individuals was again established for regular information sharing over the summer season. Beginning in June, weekly or bi-weekly e-mail updates on monitoring results were distributed to these officials and to other professionals with an interest in bloom conditions and public health. Working with the Vermont Department of Health, we also posted background information about cyanobacteria and cyanotoxins, and provided information for a map depicting bloom conditions across the lake on their website (http://healthvermont.gov/enviro/bg_algae/weekly_status.aspx). Information on bloom conditions was updated on a weekly basis from early July through mid-October.

The e-mail notification system again worked well in 2011 for rapid communication among the professional community. Our partnership with the Vermont Department of Health to post weekly information about bloom conditions on their website also continued to work well.

Our volunteer citizen monitoring effort also continues to be highly successful. In 2011, 18 volunteers, coordinated by the Lake Champlain Committee (LCC), collected samples across all major sections of the lake providing a good perspective on shoreline conditions lake-wide, and the LCC was able to collect samples from several transitory blooms in the main and northern lake.

ACKNOWLEDGMENTS

Principal funding for this project was provided by the Lake Champlain Basin Program, but additional support was provided by gifts to the Rubenstein Ecosystem Science Laboratory. We gratefully acknowledge Kirk Kimball and Marie Sawyer, Vermont Department of Health, who conducted the anatoxin-*a* analyses. We also thank Angela Shambaugh, Pete Stangel, and other staff of Vermont and New York DEC for assistance with field sampling; and Mike Winslow and Lori Fisher, Lake Champlain Committee and Jennifer Bowman, US Fish and Wildlife Service, who coordinated and assisted with the citizen monitoring effort. Finally, none of the shoreline data collection would have been possible without our dedicated group of volunteer monitors. To all we are very grateful.

LITERATURE CITED

- APHA, 1998. Standard Methods for the Examination of Water and Wastewater. 20th Edition. American Public Health Association. Washington DC.
- Chorus, I., and J. Bartram. 1999. Toxic Cyanobacteria in Water: A guide to their public health consequences, monitoring and management. E&FN Spon, New York, NY, 416 pp.
- James, K.J., I.R. Sherlock, and M.A. Stack. 1997. Anatoxin-*a* in Irish freshwater and Cyanobacteria, determined using a new fluorometric liquid chromatographic method. *Toxicon* 35:963-971.
- Metcalf, J.S., P Hyenstrand, K.A. Beatie, and G.A. Codd. 2000. Effects of physicochemical variables and cyanobacterial extracts on the immunoassay of microcystin-LR by two ELISA kits. *J. Appl. Microbio.* 89: 532-538.

MONITORING AND EVALUATION OF CYANOBACTERIA IN LAKE CHAMPLAIN

Summer 2011

Appendices A - E

**Report to
Lake Champlain Basin Program**

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|-------------------|--------------------|
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| Appendix E | Page 55 |

Appendix A. Results of Qualitative Sample Screening - Data Summary 2011

| Date | UVM Sample No. | Sample Location | BGA? | <i>Microcystis</i> | <i>Aphanizomenon</i> | <i>Gloeotrichia</i> | <i>Anabaena</i> | <i>Coelospherium</i> | <i>Oscillatoria</i> | Status |
|----------|----------------|---------------------------|------|--------------------|----------------------|---------------------|-----------------|----------------------|---------------------|-----------------------|
| 06/06/11 | 6202 | North Beach shoreline | YES | X | | | | | | Go to Quantitative |
| | 6204 | Red Rocks beach shoreline | YES | X | | | | | | Go to Quantitative |
| 06/07/11 | 6206 | Rte 78 Access | YES | X | | | | | | Go to Quantitative |
| 06/08/11 | 6208 | Alburgh | YES | | X | | | | | Go to Quantitative |
| | 6210 | Highgate Cliffs | YES | X | | | | | | Go to Quantitative |
| | 6212 | Highgate Springs | YES | X | | | | | | Go to Quantitative |
| 06/08/11 | 6214 | Rock River Access | NO | | | | | | | Remain at Qualitative |
| | 6215 | Rock River Access | NO | | | | | | | Remain at Qualitative |
| | 6216 | St. Albans Boatlaunch | NO | | | | | | | Remain at Qualitative |
| | 6217 | St. Albans Boatlaunch | NO | | | | | | | Remain at Qualitative |
| | 6218 | VT DEC Sta 02 | YES | X | X | | X | X | | Go to Quantitative |
| 06/09/11 | 6219 | VT DEC Sta 04 | YES | X | X | | X | | | Go to Quantitative |
| | 6220 | VT DEC Sta 25 | YES | X | X | | X | | | Go to Quantitative |
| | 6221 | VT DEC Sta 33 | YES | X | X | | | | | Go to Quantitative |
| | 6222 | VT DEC Sta 36 | YES | | X | | | | | Go to Quantitative |
| 06/15/11 | 6239 | VT DEC Sta 46 | YES | X | X | | X | | | Go to Quantitative |
| | 6240 | VT DEC Sta 50 | YES | X | | | X | | | Go to Quantitative |
| | 6241 | VT DEC Sta 07 | YES | X | | | | | | Go to Quantitative |
| | 6242 | VT DEC Sta 09 | YES | | | | X | | | Go to Quantitative |
| 06/20/11 | 6243 | VT DEC Sta 34 | YES | X | X | | X | | | Go to Quantitative |
| | 6244 | VT DEC Sta 40 | YES | X | X | | X | | | Go to Quantitative |
| | 6245 | VT DEC Sta 16 | YES | X | X | | | | | Go to Quantitative |
| | 6246 | VT DEC Sta 19 | YES | X | X | | X | | | Go to Quantitative |

| | | | | | | | | | |
|----------|------|-----------------------------|-----|---|---|--|---|--|-----------------------|
| | 6247 | VT DEC Sta 21 | YES | X | X | | X | | Go to Quantitative |
| 06/22/11 | 6231 | Rock River Access | YES | X | | | | | Go to Quantitative |
| | 6233 | St. Albans Boatlaunch | NO | | | | | | Remain at Qualitative |
| | 6234 | St. Albans Boatlaunch | YES | | X | | | | Go to Quantitative |
| 06/28/11 | 6251 | VT DEC Sta 51 | YES | X | X | | X | | Go to Quantitative |
| 07/05/11 | 6272 | Chapman Bay | YES | | X | | | | Go to Quantitative |
| 07/06/11 | 6273 | Highgate Springs Shipyard | YES | X | X | | X | | Go to Quantitative |
| | 6274 | Donaldson Point | YES | | | | X | | Go to Quantitative |
| | 6275 | Maquam Bay | YES | | X | | | | Go to Quantitative |
| | 6282 | Rouses Point | NO | | | | | | Remain at Qualitative |
| | 6283 | Begg's Park | NO | | | | | | Remain at Qualitative |
| | 6284 | Shoreham / Larrabee's Point | YES | | X | | X | | Go to Quantitative |
| | 6285 | Carry Bay | NO | | | | | | Remain at Qualitative |
| | 6286 | Pelots Bay | NO | | | | | | Remain at Qualitative |
| | 6288 | Point au Roche | NO | | | | | | Remain at Qualitative |
| | 6289 | City Bay | NO | | | | | | Remain at Qualitative |
| 07/12/11 | 6302 | Kingsland Bay / Ferrisburgh | YES | | X | | | | Go to Quantitative |
| | 6303 | North Hero State Park | YES | | | | X | | Go to Quantitative |
| | 6305 | Begg's Park | YES | | X | | X | | Go to Quantitative |
| | 6306 | Point au Roche | YES | | X | | X | | Go to Quantitative |
| | 6307 | Willsboro Bay | NO | | | | | | Remain at Qualitative |
| | 6308 | Rouses Point | NO | | | | | | Remain at Qualitative |
| | 6309 | City Bay | YES | | X | | | | Go to Quantitative |

| | | | | | | | | | | |
|----------|------|-----------------------|-----|---|---|--|---|--|--|-----------------------|
| | 6310 | Pelots Bay | YES | X | X | | X | | | Go to Quantitative |
| | 6311 | Carry Bay | YES | | X | | | | | Go to Quantitative |
| | 6320 | Rock River Access | YES | | X | | X | | | Go to Quantitative |
| | 6321 | High Rocks | YES | | X | | X | | | Go to Quantitative |
| | 6323 | St. Albans Boatlaunch | YES | | X | | X | | | Go to Quantitative |
| 07/19/11 | 6350 | Rouses Point | NO | | | | | | | Remain at Qualitative |
| 07/26/11 | 6385 | Willsboro Bay | YES | | X | | X | | | Go to Quantitative |
| | 6387 | Rouses Point | NO | | | | | | | Remain at Qualitative |
| 08/03/11 | 6423 | Rouses Point | YES | | | | X | | | Go to Quantitative |

Appendix B. Counts of Algae in Quantitative Samples - Data Summary 2011

| Location | Sample Type | Date | Rep | Count Rep | Bacillariophyceae | Chlorophyceae | Chrysophyceae | Cryptophyceae | Dinophyceae | Euglenophyceae | Myxophyceae | Potential Toxin Producers (cells/mL) | Total (cells/mL) | Collection Source |
|---------------------------|-------------------|----------|-----|-----------|-------------------|---------------|---------------|---------------|-------------|----------------|-------------|--------------------------------------|------------------|-------------------|
| North Beach shoreline | counted ww as net | 06/06/11 | 1 | 1 | 156.2 | | 189.1 | 24.7 | | | | | 369.9 | UVM |
| North Beach shoreline | counted ww as net | 06/06/11 | 2 | 1 | 52.6 | 52.6 | 35.1 | 26.3 | | | | | 166.6 | UVM |
| Red Rocks Beach shoreline | counted ww as net | 06/06/11 | 1 | 1 | 61.4 | | 43.8 | 8.8 | | | | | 114.0 | UVM |
| Red Rocks Beach shoreline | counted ww as net | 06/06/11 | 2 | 1 | 17.5 | | 35.1 | | | | | | 52.6 | UVM |
| Rte 78 Access | net | 06/07/11 | 1 | 1 | 5.9 | 0.3 | 72.3 | | | | 1.7 | 1.7 | 80.2 | UVM |
| Rte 78 Access | net | 06/07/11 | 2 | 1 | 2.9 | 0.5 | 1.4 | | | | | | 4.8 | UVM |
| Alburgh | net | 06/07/11 | 1 | 1 | 1.5 | | 1.3 | | | 0.0 | 0.5 | 0.5 | 3.3 | UVM |
| Alburgh | net | 06/07/11 | 2 | 1 | 2.1 | 0.8 | 19.4 | | | | | | 22.4 | UVM |
| Highgate Cliffs | net | 06/07/11 | 1 | 1 | 8.4 | 4.7 | 24.2 | | 0.0 | 0.0 | 4.5 | 4.5 | 41.8 | UVM |
| Highgate Cliffs | net | 06/07/11 | 2 | 1 | 9.9 | 2.5 | 37.5 | | | | 10.1 | 10.1 | 60.0 | UVM |
| Highgate Springs | net | 06/07/11 | 1 | 1 | 6.1 | 1.1 | 223.3 | | | | | | 230.4 | UVM |

| | | | | | | | | | | | | | | |
|-------------------|-------------------|----------|---|---|--------|--------|--------|------|------|-----|-------|-------|--------|--------|
| Highgate Springs | net | 06/07/11 | 2 | 1 | 4.2 | 1.9 | 110.3 | | | | 0.2 | 0.2 | 116.7 | UVM |
| VTDEC Sta02 | net | 06/07/11 | 1 | 1 | 867.4 | 10.5 | | | | | 39.5 | 13.2 | 917.4 | VT DEC |
| VTDEC Sta04 | net | 06/07/11 | 1 | 1 | 26.7 | 3.3 | 0.5 | 0.0 | 0.2 | 0.1 | 0.8 | 0.8 | 31.6 | VT DEC |
| VTDEC Sta25 | net | 06/03/11 | 1 | 1 | 3.3 | | 0.1 | 0.0 | 0.0 | | 3.5 | 3.5 | 6.9 | VT DEC |
| VTDEC Sta33 | net | 06/06/11 | 1 | 1 | 7.3 | | 2.8 | 0.0 | | | 2.1 | 2.1 | 12.2 | VT DEC |
| VTDEC Sta36 | net | 06/03/11 | 1 | 1 | 6.0 | 0.0 | 2.0 | 0.0 | | | 0.4 | 0.4 | 8.5 | VT DEC |
| Rte 78 Access | net | 06/21/11 | 1 | 1 | 384.2 | | 11.3 | 1.2 | 0.6 | | | | 397.3 | UVM |
| Rte 78 Access | net | 06/21/11 | 2 | 1 | 811.9 | 39.3 | 33.3 | | | | | | 884.4 | UVM |
| Alburgh | net | 06/21/11 | 1 | 1 | 508.8 | 43.0 | 1.6 | | | | 419.2 | 21.2 | 972.6 | UVM |
| Alburgh | net | 06/21/11 | 2 | 1 | 369.4 | | 24.3 | | | | | | 393.7 | UVM |
| Highgate Cliffs | net | 06/21/11 | 1 | 1 | 1463.8 | 27.8 | 80.9 | | | | 65.0 | 65.0 | 1637.5 | UVM |
| Highgate Cliffs | net | 06/21/11 | 2 | 1 | 667.3 | 57.9 | 53.1 | | | | 60.3 | 60.3 | 838.6 | UVM |
| Highgate Springs | net | 06/21/11 | 1 | 1 | 697.3 | 30.3 | 27.1 | | | | 79.3 | 79.3 | 833.9 | UVM |
| Highgate Springs | net | 06/21/11 | 2 | 1 | 615.5 | 83.7 | 35.6 | | | 0.4 | 22.3 | | 757.4 | UVM |
| Rock River Access | counted ww as net | 06/21/11 | 1 | 1 | 394.6 | 5173.6 | 675.2 | 17.5 | 35.1 | | 438.4 | 438.4 | 6734.5 | UVM |
| Rock River Access | counted ww as net | 06/21/11 | 2 | 1 | 833.0 | 3849.5 | 1508.2 | 17.5 | 17.5 | | 438.4 | 438.4 | 6664.3 | UVM |

| | | | | | | | | | | | | | | |
|---------------------------|-------------------|----------|---|---|-------|-----|------|------|-----|--|-----|-----|-------|--------|
| St. Albans Boat Launch | counted ww as net | 06/21/11 | 1 | 1 | 8.8 | | 78.9 | 70.2 | | | | | 157.8 | UVM |
| St. Albans Boat Launch | counted ww as net | 06/21/11 | 2 | 1 | 8.8 | 8.8 | 78.9 | 43.8 | | | | | 140.3 | UVM |
| North Beach shoreline | counted ww as net | 06/20/11 | 1 | 1 | 175.4 | | 35.1 | 61.4 | | | | | 271.8 | UVM |
| North Beach shoreline | counted ww as net | 06/20/11 | 2 | 1 | 8.8 | | 8.8 | 43.8 | | | | | 61.4 | UVM |
| Red Rocks Beach shoreline | counted ww as net | 06/20/11 | 1 | 1 | 17.5 | | | 43.8 | | | | | 61.4 | UVM |
| Red Rocks Beach shoreline | counted ww as net | 06/20/11 | 2 | 1 | 26.3 | | | 26.3 | | | | | 52.6 | UVM |
| VTDEC Sta46 | net | 06/08/11 | 1 | 1 | 5.3 | | 0.5 | 0.1 | | | 2.3 | 2.3 | 8.2 | VT DEC |
| VTDEC Sta50 | net | 06/08/11 | 1 | 1 | 7.6 | 2.5 | 17.9 | | | | | | 27.9 | VT DEC |
| VTDEC Sta07 | net | 06/13/11 | 1 | 1 | 19.8 | 0.2 | 0.2 | 0.1 | | | | | 20.2 | VT DEC |
| VTDEC Sta09 | net | 06/13/11 | 1 | 1 | 20.0 | 0.8 | 0.9 | | | | 5.5 | 5.5 | 27.2 | VT DEC |
| VTDEC Sta34 | net | 06/14/11 | 1 | 1 | 4.0 | 0.7 | 0.3 | 0.0 | 0.0 | | 2.5 | 2.5 | 7.5 | VT DEC |
| VTDEC Sta40 | net | 06/14/11 | 1 | 1 | 13.9 | 0.1 | 0.2 | | 0.0 | | 2.6 | 2.6 | 16.8 | VT DEC |
| VTDEC Sta16 | net | 06/17/11 | 1 | 1 | 16.0 | | 0.3 | 0.2 | | | 0.3 | 0.3 | 16.8 | VT DEC |

| | | | | | | | | | | | | | | |
|------------------------|-----|----------|---|---|--------|-------|------|-----|-----|-----|--------|--------|--------|--------|
| VTDEC Sta19 | net | 06/17/11 | 1 | 1 | 14.9 | | 0.3 | 0.0 | | | 0.1 | 0.1 | 15.3 | VT DEC |
| VTDEC Sta21 | net | 06/17/11 | 1 | 1 | 13.2 | | 0.5 | 0.2 | 0.0 | | 2.4 | 2.4 | 16.4 | VT DEC |
| VTDEC Sta25 | net | 06/20/11 | 1 | 1 | 2.5 | 0.0 | 2.1 | | 0.0 | | 42.3 | 42.3 | 46.9 | VT DEC |
| VTDEC Sta04 | net | 06/21/11 | 1 | 1 | 267.0 | | 10.9 | | 6.7 | | 38.2 | 34.7 | 322.8 | VT DEC |
| VTDEC Sta02 | net | 06/21/11 | 1 | 1 | 214.0 | 23.5 | 70.8 | | 0.3 | | 78.4 | 78.4 | 387.0 | VT DEC |
| VTDEC Sta51 | net | 06/22/11 | 1 | 1 | 1280.9 | | 3.6 | 1.8 | | | 238.7 | 238.7 | 1525.0 | VT DEC |
| VTDEC Sta50 | net | 06/22/11 | 1 | 1 | 654.6 | 84.0 | 46.7 | 1.1 | | 0.5 | 712.7 | 64.3 | 1499.6 | VT DEC |
| VTDEC Sta46 | net | 06/22/11 | 1 | 1 | 5.9 | 0.0 | 0.4 | 0.0 | 0.0 | | | | 6.3 | VT DEC |
| Rte 78 Access | net | 07/05/11 | 1 | 1 | 287.9 | | | | | | 1.5 | 1.5 | 289.4 | UVM |
| Rte 78 Access | net | 07/05/11 | 2 | 1 | 278.9 | | | | | | | | 278.9 | UVM |
| Alburgh | net | 07/05/11 | 1 | 1 | 397.4 | 27.6 | 0.6 | | | | 577.4 | 577.4 | 1003.0 | UVM |
| Alburgh | net | 07/05/11 | 2 | 1 | 324.9 | 27.8 | | | | | 349.9 | 349.9 | 702.6 | UVM |
| Highgate Cliffs | net | 07/05/11 | 1 | 1 | 608.0 | 65.3 | | 1.2 | | | 4850.0 | 4850.0 | 5524.5 | UVM |
| Highgate Cliffs | net | 07/05/11 | 2 | 1 | 300.7 | 7.4 | 4.3 | | | | 3101.2 | 3101.2 | 3413.6 | UVM |
| Highgate Springs | net | 07/05/11 | 1 | 1 | 333.0 | 7.0 | 8.8 | 1.2 | | | 1433.9 | 1433.9 | 1783.9 | UVM |
| Highgate Springs | net | 07/05/11 | 2 | 1 | 312.2 | | 5.4 | | | | 2711.4 | 2711.4 | 3029.0 | UVM |
| St. Albans Boat Launch | net | 07/05/11 | 1 | 1 | 97.2 | 229.9 | 87.9 | 4.7 | | | 94.9 | 94.9 | 514.4 | UVM |

| | | | | | | | | | | | | | | |
|---|-------------------|----------|---|---|--------|--------|-------|-------|-----|-----|-----------|-----------|-----------|-----------------|
| St. Albans Boat Launch | net | 07/05/11 | 2 | 1 | 264.8 | 195.1 | 18.4 | | 0.6 | | 39.7 | 39.7 | 518.6 | UVM |
| Mallets Bay-NW shore near Sandbar Motel | counted ww as net | 06/27/11 | 1 | 1 | | 2800.0 | | | | | 2088000.0 | 2088000.0 | 2090800.0 | VT DEC |
| VTDEC Sta33 | net | 06/27/11 | 1 | 1 | 2.3 | 1.0 | 0.7 | 0.2 | 0.0 | 0.0 | 12.3 | 12.3 | 16.5 | VT DEC |
| VTDEC Sta36 | net | 06/27/11 | 1 | 1 | 6.6 | | 0.3 | 0.0 | 0.0 | | 1.0 | 1.0 | 7.9 | VT DEC |
| VTDEC Sta07 | net | 06/28/11 | 1 | 1 | 152.8 | 0.1 | 0.3 | | | | 8.7 | 8.7 | 161.9 | VT DEC |
| VTDEC Sta09 | net | 06/28/11 | 1 | 1 | 51.2 | | 0.1 | 0.1 | | | 2.5 | 2.5 | 53.9 | VT DEC |
| VTDEC Sta16 | net | 06/29/11 | 1 | 1 | 247.5 | | 1.7 | 0.2 | 0.2 | | 29.1 | 29.1 | 278.6 | VT DEC |
| VTDEC Sta19 | net | 06/29/11 | 1 | 1 | 45.5 | | 0.5 | 0.2 | | 0.0 | 1.3 | 1.3 | 47.5 | VT DEC |
| VTDEC Sta21 | net | 06/29/11 | 1 | 1 | 90.0 | | 1.2 | 0.4 | | | 64.9 | 64.9 | 156.5 | VT DEC |
| Chapman Bay | counted ww as net | 07/03/11 | 1 | 1 | 350.8 | | 52.6 | 70.2 | | | 990.9 | 990.9 | 1464.4 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 07/03/11 | 1 | 1 | 1771.3 | 210.5 | 201.7 | 105.2 | | | 4805.3 | 4805.3 | 7094.0 | Citizen Monitor |
| Donaldson Point | counted ww as net | 07/03/11 | 1 | 1 | 1403.0 | 35.1 | 35.1 | 175.4 | | | 929.5 | 929.5 | 2578.0 | Citizen Monitor |

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|---------------------------|-------------------------|-----------|---|---|-------|-------|-------|-------|------|--|---------|---------|---------|--------------------|
| Maquam Bay | counted ww as net | 07/05/11 | 1 | 1 | | | 203.7 | 76.4 | 17.0 | | 687.4 | 687.4 | 984.4 | Citizen Monitor |
| Red Rocks Beach shoreline | counted ww as net | 07/05/11 | 1 | 1 | 375.8 | | 52.6 | | | | 676.5 | 676.5 | 1104.9 | Citizen Monitor |
| North Beach shoreline | counted ww as net | 07/05/11 | 1 | 1 | 868.1 | 140.3 | 192.9 | 149.1 | | | 736.6 | 736.6 | 2087.0 | Citizen Monitor |
| VTDEC Sta34 | net | 06/30/11 | 1 | 1 | 28.8 | 1.6 | 15.4 | 0.1 | | | 4.5 | 4.5 | 50.6 | VT DEC |
| VTDEC Sta40 | net | 06/30/11 | 1 | 1 | 28.2 | 28.0 | 25.2 | 0.2 | | | 20.4 | 20.4 | 102.0 | VT DEC |
| VTDEC Sta02 | net | 07/05/11 | 1 | 1 | 24.2 | 19.5 | 14.0 | | 0.2 | | 132.7 | 132.7 | 190.6 | VT DEC |
| VTDEC Sta04 | net | 07/05/11 | 1 | 1 | 31.7 | | | | 1.6 | | 2216.5 | 2216.5 | 2249.8 | VT DEC |
| Larrabee's Point | counted ww as net | 05-Jul-11 | 1 | 1 | | 114.0 | 228.0 | | | | 6366.2 | 6366.2 | 6708.2 | Citizen Monitor |
| Rte 78 Access | net | 07/12/11 | 1 | 1 | 84.7 | 0.1 | | | | | 589.0 | 580.8 | 673.8 | UVM |
| Rte 78 Access | net | 07/12/11 | 2 | 1 | 59.7 | 1.7 | 1.6 | | | | 92.8 | 92.8 | 155.8 | UVM |
| Alburgh - Shore | counted ww as net | 07/12/11 | 1 | 1 | 43.8 | 35.1 | 140.3 | 578.7 | | | 964.6 | 964.6 | 1762.5 | UVM |
| Alburgh - Shore | counted ww as net | 07/12/11 | 2 | 1 | 157.8 | | 96.5 | 35.1 | | | 1411.8 | 1411.8 | 1701.2 | UVM |
| Highgate Cliffs | net | 07/12/11 | 1 | 1 | 25.5 | | | | 6.4 | | 25553.7 | 25553.7 | 25585.6 | UVM |

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|---------------------------|-------------------|----------|---|---|--------|-------|-------|------|------|------|---------|---------|---------|-----------------|
| Highgate Cliffs | net | 07/12/11 | 2 | 1 | | | 6.4 | | | | 19866.6 | 19866.6 | 19873.0 | UVM |
| Highgate Springs | net | 07/12/11 | 1 | 1 | | | | | 12.3 | | 5471.6 | 5471.6 | 5483.9 | UVM |
| Highgate Springs | net | 07/12/11 | 2 | 1 | | | | | | | 4870.3 | 4870.3 | 4870.3 | UVM |
| St. Albans Boat Launch | net | 07/12/11 | 1 | 1 | 171.9 | 62.8 | 9.2 | | 1.8 | | 17435.2 | 3499.2 | 17681.1 | UVM |
| St. Albans Boat Launch | net | 07/12/11 | 2 | 1 | 103.5 | | 37.0 | 1.8 | | | 10342.5 | 1099.9 | 10484.8 | UVM |
| North Beach shoreline | counted ww as net | 07/11/11 | 1 | 1 | 6497.7 | 43.8 | 96.5 | 96.5 | | | 26.3 | 26.3 | 6760.8 | Citizen Monitor |
| Red Rocks Beach shoreline | counted ww as net | 07/11/11 | 1 | 1 | 6818.7 | 84.2 | 84.2 | 31.6 | | | 2841.1 | 2841.1 | 9859.7 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 07/10/11 | 1 | 1 | 1446.9 | | 61.4 | 78.9 | | | | | 1587.2 | Citizen Monitor |
| North Hero State Park | counted ww as net | 07/10/11 | 1 | 1 | 438.4 | | 17.5 | 26.3 | | | 438.4 | 438.4 | 920.7 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 07/10/11 | 1 | 1 | 149.1 | 298.1 | 43.8 | 17.5 | | | 1543.3 | 1543.3 | 2051.9 | Citizen Monitor |
| Beggs Park | counted ww as net | 07/10/11 | 1 | 1 | 1553.7 | 65.8 | 123.3 | 41.1 | | 65.8 | | | 1849.7 | Citizen Monitor |

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|---------------------------|-------------------|----------|---|---|--------|-------|-------|-------|-------|------|--------|--------|--------|-----------------|
| Point Au Roche State Park | counted ww as net | 07/10/11 | 1 | 1 | 1429.3 | | 52.6 | | | | | | 1481.9 | Citizen Monitor |
| City Bay | counted ww as net | 07/10/11 | 1 | 1 | 35.1 | | 96.5 | 8.8 | | 26.3 | | | 166.6 | Citizen Monitor |
| Pelots Bay | counted ww as net | 07/10/11 | 1 | 1 | 613.8 | 368.3 | 342.0 | 105.2 | | | 201.7 | 201.7 | 1631.0 | Citizen Monitor |
| Carry Bay | counted ww as net | 07/10/11 | 1 | 1 | 534.9 | 17.5 | 96.5 | 78.9 | | | 534.9 | 534.9 | 1262.7 | Citizen Monitor |
| VTDEC Sta25 | net | 07/07/11 | 1 | 1 | 6.8 | 3.4 | 3.7 | 0.2 | 0.8 | 0.1 | 31.0 | 31.0 | 45.9 | VT DEC |
| VTDEC Sta46 | net | 07/08/11 | 1 | 1 | 326.3 | | 1.0 | 0.3 | | 0.3 | | | 328.0 | VT DEC |
| VTDEC Sta50 | net | 07/08/11 | 1 | 1 | 185.8 | | 1.6 | 0.3 | | | 489.5 | 489.5 | 677.1 | VT DEC |
| VTDEC Sta51 | net | 07/08/11 | 1 | 1 | 102.7 | | | | | | 2449.3 | 2387.7 | 2552.0 | VT DEC |
| VTDEC Sta33 | net | 07/11/11 | 1 | 1 | 1771.5 | | 1.9 | | | 0.6 | 282.4 | 282.4 | 2056.5 | VT DEC |
| VTDEC Sta36 | net | 07/11/11 | 1 | 1 | 824.9 | | 0.4 | | | | 13.5 | 13.5 | 838.8 | VT DEC |
| Chapman Bay | counted ww as net | 07/10/11 | 1 | 1 | 17.5 | | 26.3 | 70.2 | | | 166.6 | 166.6 | 280.6 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 07/10/11 | 1 | 1 | 280.6 | 833.0 | 534.9 | 131.5 | 114.0 | | 166.6 | 166.6 | 2060.7 | Citizen Monitor |

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|---------------------|-------------------|----------|---|---|-------|--------|-------|-------|------|-----|--------|--------|--------|-----------------|
| Rock River Access | counted ww as net | 07/10/11 | 1 | 1 | 43.8 | 184.1 | 631.4 | 78.9 | 35.1 | 8.8 | 7085.2 | 7085.2 | 8067.4 | Citizen Monitor |
| High Rocks | counted ww as net | 07/10/11 | 1 | 1 | 96.5 | 798.0 | 166.6 | 175.4 | 17.5 | | 4323.1 | 4323.1 | 5577.0 | Citizen Monitor |
| Donaldson Point | counted ww as net | 07/10/11 | 1 | 1 | 438.4 | 87.7 | 824.3 | 236.8 | | | 263.1 | 263.1 | 1850.2 | Citizen Monitor |
| St. Albans Bay Park | counted ww as net | 07/10/11 | 1 | 1 | 315.7 | 1806.4 | 26.3 | | | 8.8 | 1385.5 | 1385.5 | 3542.6 | Citizen Monitor |
| Maquam Bay | counted ww as net | 07/11/11 | 1 | 1 | 52.6 | | 35.1 | 8.8 | | | 385.8 | 385.8 | 482.3 | Citizen Monitor |
| Melo Boat Slip | net | 07/13/11 | 1 | 1 | 46.2 | | | | | | 1990.3 | 1990.3 | 2036.5 | UVM |
| Rte 78 Access | net | 07/19/11 | 1 | 1 | 32.9 | 12.7 | 1.5 | 1.3 | | | 105.9 | 97.3 | 154.3 | UVM |
| Rte 78 Access | net | 07/19/11 | 2 | 1 | 100.1 | 60.1 | | 1.7 | | | 1290.0 | 1290.0 | 1451.9 | UVM |
| Alburgh | net | 07/19/11 | 1 | 1 | 61.9 | 22.2 | | 1.5 | | | 852.4 | 852.4 | 937.9 | UVM |
| Alburgh | net | 07/19/11 | 2 | 1 | 12.0 | | 1.6 | | | | 432.4 | 432.4 | 446.1 | UVM |
| Highgate Cliffs | net | 07/19/11 | 1 | 1 | 61.6 | | | | 3.1 | | 8188.9 | 8188.9 | 8253.6 | UVM |
| Highgate Cliffs | net | 07/19/11 | 2 | 1 | 92.4 | | | | | | 5647.2 | 5647.2 | 5739.7 | UVM |
| Highgate Springs | net | 07/19/11 | 1 | 1 | 31.9 | | | | | | 927.7 | 927.7 | 959.5 | UVM |
| Highgate Springs | net | 07/19/11 | 2 | 1 | 63.8 | 12.8 | | | | | 7395.8 | 7395.8 | 7472.3 | UVM |

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|---------------------------|-------------------|----------|---|---|--------|--------|-------|-------|-----|-----|--------|--------|--------|-----------------|
| St. Albans Boat Launch | net | 07/19/11 | 1 | 1 | 149.8 | 14.9 | | 0.2 | 3.5 | | 118.3 | 115.5 | 286.6 | UVM |
| St. Albans Boat Launch | net | 07/19/11 | 2 | 1 | 160.5 | 7.7 | 0.3 | | 2.7 | | 59.2 | 59.2 | 230.4 | UVM |
| VTDEC Sta07 | net | 07/13/11 | 1 | 1 | 520.3 | 27.0 | 24.9 | | 0.7 | | 3457.3 | 3457.3 | 4030.2 | VT DEC |
| VTDEC Sta09 | net | 07/13/11 | 1 | 1 | 1017.7 | | 3.1 | | | | 2087.8 | 2087.8 | 3108.6 | VT DEC |
| VTDEC Sta16 | net | 07/14/11 | 1 | 1 | 3388.4 | 7.6 | 0.9 | 0.9 | | | 304.0 | 304.0 | 3701.9 | VT DEC |
| VTDEC Sta19 | net | 07/14/11 | 1 | 1 | 1574.3 | | 1.0 | 1.0 | | | 25.7 | 25.7 | 1602.1 | VT DEC |
| VTDEC Sta21 | net | 07/14/11 | 1 | 1 | 2184.9 | | 6.2 | | | | 73.9 | 73.9 | 2265.1 | VT DEC |
| Red Rocks Beach shoreline | counted ww as net | 07/18/11 | 1 | 1 | 201.7 | 43.8 | 35.1 | 131.5 | | 8.8 | 87.7 | 87.7 | 508.6 | Citizen Monitor |
| North Beach shoreline | counted ww as net | 07/18/11 | 1 | 1 | 1867.8 | 8.8 | 43.8 | 35.1 | | | 131.5 | 131.5 | 2087.0 | Citizen Monitor |
| City Bay | counted ww as net | 07/18/11 | 1 | 1 | 491.1 | | 114.0 | 26.3 | 8.8 | | 114.0 | 114.0 | 754.1 | Citizen Monitor |
| Pelots Bay | counted ww as net | 07/18/11 | 1 | 1 | 1697.2 | 1154.1 | 186.7 | 8.5 | | | 212.2 | 212.2 | 3258.6 | Citizen Monitor |
| Carry Bay | counted ww as net | 07/18/11 | 1 | 1 | 2016.8 | 280.6 | 70.2 | | | | 1569.6 | 1569.6 | 3937.2 | Citizen Monitor |

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|---------------------------|-------------------|----------|---|---|--------|--------|-------|-------|-------|------|---------|---------|---------|-----------------|
| Beggs Park | counted ww as net | 07/18/11 | 1 | 1 | 1385.5 | 8.8 | 96.5 | 166.6 | | | 1034.7 | 1034.7 | 2692.0 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 07/18/11 | 1 | 1 | 394.6 | 3218.2 | 87.7 | | 8.8 | 78.9 | 1666.1 | 1666.1 | 5454.2 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 07/18/11 | 1 | 1 | 96.5 | | 70.2 | 8.8 | | | 1709.9 | 1709.9 | 1885.3 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 07/18/11 | 1 | 1 | 1745.0 | 114.0 | 70.2 | 26.3 | | | | | 1955.5 | Citizen Monitor |
| Rock River Access | counted ww as net | 07/17/11 | 1 | 1 | 263.1 | 1078.6 | 447.2 | 131.5 | 315.7 | | 18388.3 | 18388.3 | 20624.4 | Citizen Monitor |
| High Rocks | counted ww as net | 07/17/11 | 1 | 1 | 52.6 | 1420.6 | 122.8 | 157.8 | 245.5 | | 5945.3 | 5945.3 | 7944.6 | Citizen Monitor |
| Maquam Bay | counted ww as net | 07/18/11 | 1 | 1 | 35.1 | | 35.1 | 70.2 | 26.3 | | 219.2 | 219.2 | 385.8 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 07/17/11 | 1 | 1 | 87.7 | 192.9 | 157.8 | | | | 1324.1 | 1324.1 | 1762.5 | Citizen Monitor |
| Donaldson Point | counted ww as net | 07/17/11 | 1 | 1 | | 578.7 | 228.0 | 166.6 | 43.8 | 17.5 | 1718.7 | 833.0 | 2753.4 | Citizen Monitor |
| Chapman Bay | counted ww as net | 07/17/11 | 1 | 1 | 26.3 | 8.8 | 26.3 | | | | 929.5 | 929.5 | 990.9 | Citizen Monitor |

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|---------------------|-------------------------|----------|---|---|--------|-------|------|------|------|-----|--------|--------|--------|-----------------|
| St. Albans Bay Park | counted ww as net | 07/18/11 | 1 | 1 | 438.4 | 210.5 | | 17.5 | | | 175.4 | 175.4 | 841.8 | Citizen Monitor |
| Button Bay | net | 07/13/11 | 1 | 1 | 530.2 | 12.2 | 39.4 | | 1.1 | | 474.1 | 474.1 | 1057.0 | VT DEC |
| queska island | net | 07/14/11 | 1 | 1 | 1692.8 | | 6.8 | | | | 68.4 | 68.4 | 1768.0 | VT DEC |
| VTDEC Sta34 | net | 07/15/11 | 1 | 1 | 464.2 | 19.7 | 19.7 | | 15.3 | | 75.0 | 75.0 | 594.0 | VT DEC |
| VTDEC Sta40 | net | 07/15/11 | 1 | 1 | 456.8 | 57.1 | 2.1 | | 8.6 | | 255.9 | 247.7 | 780.5 | VT DEC |
| VTDEC Sta04 | net | 07/19/11 | 1 | 1 | 80.3 | 44.9 | 0.4 | 0.4 | 1.6 | 0.4 | 547.2 | 547.2 | 675.1 | VT DEC |
| VTDEC Sta02 | net | 07/19/11 | 1 | 1 | 104.2 | 13.9 | 43.4 | 0.3 | 1.8 | 0.5 | 74.7 | 74.7 | 238.8 | VT DEC |
| VTDEC Sta46 | net | 07/19/11 | 1 | 1 | 1122.5 | 1.0 | | | | | 15.4 | 15.4 | 1138.9 | VT DEC |
| VTDEC Sta50 | net | 07/19/11 | 1 | 1 | 190.0 | 115.2 | | | | | 1607.8 | 1607.8 | 1912.9 | VT DEC |
| VTDEC Sta51 | net | 07/19/11 | 1 | 1 | 413.3 | 496.0 | | | | | 7986.5 | 7986.5 | 8895.9 | VT DEC |
| Rte 78 Access-shore | net | 07/26/11 | 1 | 1 | 31.2 | 8.2 | 0.2 | 0.2 | | | 155.0 | 147.1 | 194.8 | UVM |
| Rte 78 Access-shore | net | 07/26/11 | 2 | 1 | 38.4 | 3.1 | | | 0.1 | | 137.8 | 137.8 | 179.4 | UVM |
| Alburgh - Shore | counted ww as net | 07/26/11 | 1 | 1 | 17.5 | | 43.8 | 78.9 | | | 5436.7 | 5436.7 | 5577.0 | UVM |
| Alburgh - Shore | counted ww as net | 07/26/11 | 2 | 1 | 43.8 | 280.6 | 43.8 | 35.1 | | | 2244.8 | 2244.8 | 2648.2 | UVM |

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|---------------------------|-------------------|----------|---|---|--------|-------|------|-------|-----|--|---------|---------|---------|-----------------|
| St. Albans Boat Launch | net | 07/26/11 | 1 | 1 | 97.6 | | | | 2.0 | | 2444.9 | 2444.9 | 2544.4 | UVM |
| St. Albans Boat Launch | net | 07/26/11 | 2 | 1 | 35.7 | 1.8 | | | | | 396.1 | 396.1 | 433.6 | UVM |
| Red Rocks Beach shoreline | counted ww as net | 07/25/11 | 1 | 1 | 389.3 | 21.0 | 10.5 | 210.5 | | | 2946.3 | 2946.3 | 3577.7 | Citizen Monitor |
| North Beach shoreline | counted ww as net | 07/25/11 | 1 | 1 | 1017.2 | | 17.5 | 70.2 | | | 1753.8 | 1753.8 | 2858.7 | Citizen Monitor |
| North Hero State Park | counted ww as net | 07/19/11 | 1 | 1 | 622.6 | 131.5 | 96.5 | 70.2 | 8.8 | | 4858.0 | 4858.0 | 5787.5 | Citizen Monitor |
| Beggs Park | counted ww as net | 07/23/11 | 1 | 1 | 798.0 | 35.1 | 61.4 | 8.8 | | | 4551.0 | 4551.0 | 5454.2 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 07/23/11 | 1 | 1 | 823.1 | | 59.4 | 17.0 | | | 704.3 | 704.3 | 1603.9 | Citizen Monitor |
| Carry Bay | counted ww as net | 07/24/11 | 1 | 1 | 964.6 | 315.7 | 26.3 | 35.1 | 8.8 | | 17239.6 | 17239.6 | 18590.0 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 07/24/11 | 1 | 1 | | | 96.5 | 8.8 | | | 2016.8 | 2016.8 | 2122.1 | Citizen Monitor |
| North Hero State Park | counted ww as net | 07/24/11 | 1 | 1 | 263.1 | | | 8.8 | | | 15257.8 | 1578.4 | 15529.7 | Citizen Monitor |

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|---------------------------|-------------------|----------|---|---|--------|-------|--------|-------|-------|--|--------|--------|--------|-----------------|
| Willsboro Bay | counted ww as net | 07/25/11 | 1 | 1 | 929.5 | 184.1 | 26.3 | 306.9 | | | 666.4 | 666.4 | 2113.3 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 07/25/11 | 1 | 1 | 429.7 | 8.8 | 17.5 | 131.5 | | | 420.9 | 420.9 | 1008.4 | Citizen Monitor |
| Pelots Bay | counted ww as net | 07/25/11 | 1 | 1 | 271.8 | 499.8 | 8.8 | 17.5 | | | 2464.1 | 2464.1 | 3262.0 | Citizen Monitor |
| City Bay | counted ww as net | 07/25/11 | 1 | 1 | 789.2 | | 17.5 | 96.5 | 8.8 | | 964.6 | 964.6 | 1876.5 | Citizen Monitor |
| Rock River Access | counted ww as net | 07/25/11 | 1 | 1 | 8.8 | 333.2 | 1210.1 | 245.5 | 8.8 | | 1894.1 | 1894.1 | 3700.5 | Citizen Monitor |
| High Rocks | counted ww as net | 07/25/11 | 1 | 1 | 263.1 | 210.5 | 175.4 | 140.3 | 17.5 | | 2876.2 | 2876.2 | 3682.9 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 07/23/11 | 1 | 1 | 8.8 | 192.9 | 456.0 | 271.8 | 175.4 | | 815.5 | 815.5 | 1920.4 | Citizen Monitor |
| Donaldson Point | counted ww as net | 07/24/11 | 1 | 1 | 43.8 | 70.2 | 26.3 | 17.5 | | | 824.3 | 824.3 | 982.1 | Citizen Monitor |
| Maquam Bay | counted ww as net | 07/26/11 | 1 | 1 | 4445.8 | 776.0 | 39.5 | 26.3 | | | 2617.5 | 1157.5 | 7905.1 | Citizen Monitor |
| Chapman Bay | counted ww as net | 07/24/11 | 1 | 1 | | 17.5 | 131.5 | 543.7 | | | 438.4 | 438.4 | 1131.2 | Citizen Monitor |

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|------------------------|-------------------------|----------|---|---|-------|-------|------|------|-----|--|---------|---------|---------|-----------------|
| St. Albans Bay Park | counted ww as net | 07/25/11 | 1 | 1 | 271.8 | 903.2 | 52.6 | 43.8 | | | 12153.7 | 12153.7 | 13425.1 | Citizen Monitor |
| Rte 78 Access | net | 08/02/11 | 1 | 1 | | | 4.6 | 6.2 | | | 2076.5 | 2076.5 | 2087.3 | UVM |
| Rte 78 Access | net | 08/02/11 | 2 | 1 | | | 3.4 | 8.4 | | | 1106.5 | 1106.5 | 1118.3 | UVM |
| Alburgh | net | 08/02/11 | 1 | 1 | 0.8 | 10.6 | 0.1 | 0.2 | 0.1 | | 497.0 | 492.1 | 508.8 | UVM |
| Alburgh | net | 08/02/11 | 2 | 1 | 1.2 | 9.3 | | 0.2 | | | 103.9 | 103.9 | 114.6 | UVM |
| Highgate Cliffs | net | 08/02/11 | 1 | 1 | 11.5 | 22.4 | 0.6 | 0.6 | 0.6 | | 4533.4 | 4523.0 | 4569.0 | UVM |
| Highgate Cliffs | net | 08/02/11 | 2 | 1 | | 29.2 | 2.4 | 2.4 | | | 8599.0 | 8599.0 | 8633.0 | UVM |
| Highgate Springs | net | 08/02/11 | 1 | 1 | 19.9 | 14.8 | 0.6 | | 1.3 | | 3801.7 | 3795.2 | 3838.2 | UVM |
| Highgate Springs | net | 08/02/11 | 2 | 1 | | | | | | | 3960.6 | 3960.6 | 3960.6 | UVM |
| St. Albans Boat Launch | net | 08/02/11 | 1 | 1 | | 134.1 | | | | | 8244.6 | 8244.6 | 8378.8 | UVM |
| St. Albans Boat Launch | net | 08/02/11 | 2 | 1 | | 93.4 | | | | | 9219.3 | 9219.3 | 9312.7 | UVM |
| VTDEC Sta25 | net | 07/22/11 | 1 | 1 | 4.5 | 5.9 | 10.9 | | 0.3 | | 50.9 | 50.9 | 72.4 | VT DEC |
| VTDEC Sta07 | net | 07/28/11 | 1 | 1 | 902.5 | 5.5 | | 1.4 | 2.8 | | 953.6 | 953.6 | 1865.7 | VT DEC |
| VTDEC Sta09 | net | 07/28/11 | 1 | 1 | 419.4 | 2.1 | | | 1.2 | | 140.3 | 140.3 | 563.0 | VT DEC |
| VTDEC Sta16 | net | 08/01/11 | 1 | 1 | 229.9 | 5.7 | 0.5 | | 0.5 | | 96.7 | 96.7 | 333.3 | VT DEC |
| VTDEC Sta21 | net | 08/01/11 | 1 | 1 | 371.8 | | | | 0.9 | | 176.8 | 176.8 | 549.5 | VT DEC |

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|---------------------------|-------------------|----------|---|---|-------|------|-------|-------|-----|--|--------|--------|--------|-----------------|
| North Beach shoreline | counted ww as net | 08/01/11 | 1 | 1 | 727.8 | | 17.5 | | | | 1587.2 | 1587.2 | 2332.5 | Citizen Monitor |
| Red Rocks Beach shoreline | counted ww as net | 08/01/11 | 1 | 1 | 8.8 | | 52.6 | | | | 438.4 | 438.4 | 499.8 | Citizen Monitor |
| Willsboro Bay | counted ww as net | 08/01/11 | 1 | 1 | 210.5 | 8.8 | 8.8 | 8.8 | 8.8 | | 438.4 | 438.4 | 684.0 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 07/31/11 | 1 | 1 | 93.3 | 50.9 | 42.4 | 93.3 | | | 636.5 | 636.5 | 916.5 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 08/01/11 | 1 | 1 | 157.8 | 43.8 | 35.1 | 8.8 | | | 2051.9 | 2051.9 | 2297.4 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 07/31/11 | 1 | 1 | 61.4 | 8.8 | 114.0 | 17.5 | | | | | 201.7 | Citizen Monitor |
| Beggs Park | counted ww as net | 07/31/11 | 1 | 1 | 377.1 | | 8.8 | 26.3 | | | 219.2 | 219.2 | 631.4 | Citizen Monitor |
| North Hero State Park | counted ww as net | 07/31/11 | 1 | 1 | 105.2 | | | | | | 1753.8 | 1753.8 | 1859.0 | Citizen Monitor |
| City Bay | counted ww as net | 08/01/11 | 1 | 1 | | | 17.5 | 17.5 | | | 561.2 | 561.2 | 596.3 | Citizen Monitor |
| Carry Bay | counted ww as net | 07/31/11 | 1 | 1 | 534.9 | 43.8 | 52.6 | 122.8 | | | 2192.2 | 2192.2 | 2946.3 | Citizen Monitor |

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|----------------------------------|-------------------------|----------|---|---|----------|-------|-------|-------|------|-----|----------|----------|----------|--------------------|
| Pelots Bay | counted ww as net | 08/01/11 | 1 | 1 | 263.1 | 87.7 | 43.8 | 149.1 | 17.5 | 8.8 | 15564.7 | 15564.7 | 16134.7 | Citizen Monitor |
| Rouses Point | counted ww as net | 08/01/11 | 1 | 1 | 17.5 | | 17.5 | 35.1 | | | | | 70.2 | Citizen Monitor |
| Donaldson Point | counted ww as net | 07/31/11 | 1 | 1 | 52.6 | | 8.8 | 149.1 | | | | | 210.5 | Citizen Monitor |
| Highgate Springs- Shipyard | counted ww as net | 07/31/11 | 1 | 1 | 17.5 | 43.8 | 254.3 | 61.4 | 26.3 | | 438.4 | 438.4 | 841.8 | Citizen Monitor |
| Maquam Bay | counted ww as net | 08/01/11 | 1 | 1 | 59.4 | 33.9 | 25.5 | 93.3 | | | | | 212.2 | Citizen Monitor |
| High Rocks | counted ww as net | 08/01/11 | 1 | 1 | 133.3 | | | | | | 56400.0 | 52400.0 | 56533.3 | Citizen Monitor |
| Rock River Access | counted ww as net | 08/01/11 | 1 | 1 | 266666.7 | | 666.7 | | | | 120000.0 | 120000.0 | 387333.3 | Citizen Monitor |
| St. Albans Bay Park | counted ww as net | 08/01/11 | 1 | 1 | 457.1 | | | | | | 81028.6 | 78742.9 | 81485.7 | Citizen Monitor |
| Chapman Bay | counted ww as net | 07/31/11 | 1 | 1 | 26.3 | 43.8 | 131.5 | 61.4 | | | | | 263.1 | Citizen Monitor |
| Rte 78 Access | counted ww as net | 08/09/11 | 1 | 1 | 482.3 | 122.8 | 35.1 | 26.3 | 8.8 | | 28612.8 | 28612.8 | 29288.0 | UVM |

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|---------------------------|-------------------|----------|---|---|-------|-------|-------|-------|------|--|-----------|-----------|-----------|-----------------|
| Rte 78 Access | counted ww as net | 08/09/11 | 2 | 1 | 96.5 | 70.2 | 43.8 | 149.1 | 8.8 | | 32357.1 | 32357.1 | 32725.4 | UVM |
| Alburgh | counted ww as net | 08/09/11 | 1 | 1 | 43.8 | 17.5 | 78.9 | 131.5 | | | 263.1 | 263.1 | 534.9 | UVM |
| Alburgh | counted ww as net | 08/09/11 | 2 | 1 | | | | 35.1 | | | 789.2 | 789.2 | 824.3 | UVM |
| Highgate Cliffs | counted ww as net | 08/09/11 | 1 | 1 | | | 87.7 | 26.3 | 26.3 | | 41161.1 | 41161.1 | 41301.4 | UVM |
| Highgate Cliffs | counted ww as net | 08/09/11 | 2 | 1 | | 499.8 | 87.7 | 52.6 | | | 27350.1 | 27350.1 | 27990.2 | UVM |
| Highgate Springs | counted ww as net | 08/09/11 | 1 | 1 | 266.7 | | 133.3 | | | | 1039733.3 | 1039733.3 | 1040133.3 | UVM |
| Highgate Springs | counted ww as net | 08/09/11 | 2 | 1 | | | | | | | 603733.3 | 601600.0 | 603733.3 | UVM |
| St. Albans Boat Launch | counted ww as net | 08/09/11 | 1 | 1 | 10.5 | 147.3 | 42.1 | 115.7 | | | 20340.3 | 20340.3 | 20655.9 | UVM |
| St. Albans Boat Launch | counted ww as net | 08/09/11 | 2 | 1 | 8.8 | 219.2 | 26.3 | 157.8 | | | 11671.4 | 11601.2 | 12083.5 | UVM |
| Red Rocks Beach shoreline | counted ww as net | 08/08/11 | 1 | 1 | 184.1 | | 43.8 | 52.6 | | | 1052.3 | 1052.3 | 1332.9 | Citizen Monitor |

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|-----------------------|-------------------|----------|---|---|--------|-------|------|--------|------|------|---------|---------|---------|-----------------|
| North Beach shoreline | counted ww as net | 08/08/11 | 1 | 1 | 1517.0 | 8.8 | 87.7 | 1069.8 | 17.5 | | 184.1 | 184.1 | 2885.0 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 08/07/11 | 1 | 1 | 8.8 | 43.8 | 43.8 | 271.8 | | | 1148.7 | 1148.7 | 1517.0 | Citizen Monitor |
| Beggs Park | counted ww as net | 08/07/11 | 1 | 1 | | 122.8 | 35.1 | 35.1 | | | 1148.7 | 1148.7 | 1341.6 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 08/07/11 | 1 | 1 | 131.5 | 70.2 | 17.5 | | | 52.6 | 1315.3 | 1315.3 | 1587.2 | Citizen Monitor |
| Willsboro Bay | counted ww as net | 08/08/11 | 1 | 1 | 745.4 | 280.6 | 8.8 | 8.8 | | | 5068.4 | 859.3 | 6111.9 | Citizen Monitor |
| Rouses Point | counted ww as net | 08/08/11 | 1 | 1 | | 315.7 | 43.8 | 96.5 | | | | | 456.0 | Citizen Monitor |
| Pelots Bay | counted ww as net | 08/08/11 | 1 | 1 | 824.3 | 394.6 | 35.1 | 52.6 | | 8.8 | 12451.8 | 12451.8 | 13767.1 | Citizen Monitor |
| Carry Bay | counted ww as net | 08/07/11 | 1 | 1 | 184.1 | 245.5 | 8.8 | 228.0 | | | 87.7 | 87.7 | 754.1 | Citizen Monitor |
| North Hero State Park | counted ww as net | 08/07/11 | 1 | 1 | 824.3 | 8.8 | | 8.8 | | | 2639.4 | 2639.4 | 3481.2 | Citizen Monitor |
| City Bay | counted ww as net | 08/08/11 | 1 | 1 | 350.8 | 105.2 | 52.6 | 359.5 | | | 271.8 | 271.8 | 1140.0 | Citizen Monitor |

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|---------------------------|-------------------|----------|---|---|--------|--------|--------|-------|-------|-------|----------|----------|----------|-----------------|
| Point Au Roche State Park | counted ww as net | 08/08/11 | 1 | 1 | 1061.0 | 245.5 | 17.5 | 131.5 | 52.6 | | | | 1508.2 | Citizen Monitor |
| Rock River Access | counted ww as net | 08/07/11 | 1 | 1 | 800.0 | | 1600.0 | | | 400.0 | 90533.3 | 90533.3 | 93333.3 | Citizen Monitor |
| High Rocks | counted ww as net | 08/07/11 | 1 | 1 | | | 600.0 | | | | 426000.0 | 426000.0 | 426600.0 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 08/07/11 | 1 | 1 | 129.0 | | | | 129.0 | | 579871.0 | 579871.0 | 580129.0 | Citizen Monitor |
| Chapman Bay | counted ww as net | 08/07/11 | 1 | 1 | | 149.1 | 43.8 | 26.3 | | | 2849.9 | 2849.9 | 3069.1 | Citizen Monitor |
| St. Albans Bay Park | counted ww as net | 08/08/11 | 1 | 1 | 59.4 | 1451.1 | 127.3 | 203.7 | | | 7849.6 | 7849.6 | 9691.0 | Citizen Monitor |
| Maquam Bay | counted ww as net | 08/09/11 | 1 | 1 | 43.8 | 87.7 | 35.1 | 87.7 | | | 613.8 | 613.8 | 868.1 | Citizen Monitor |
| Donaldson Point | counted ww as net | 08/07/11 | 1 | 1 | 52.6 | 35.1 | 131.5 | 131.5 | | | 333.2 | 333.2 | 684.0 | Citizen Monitor |
| VTDEC Sta33 | net | 08/08/11 | 1 | 1 | 452.1 | 0.4 | 0.7 | 5.7 | 0.9 | | 308.6 | 308.6 | 768.3 | VT DEC |
| VTDEC Sta36 | net | 08/08/11 | 1 | 1 | 708.9 | | | | | | 291.1 | 291.1 | 1000.0 | VT DEC |
| VTDEC Sta34 | net | 08/09/11 | 1 | 1 | 92.0 | 17.5 | 0.2 | 0.2 | | | 1468.1 | 1454.4 | 1578.1 | VT DEC |
| VTDEC | net | 08/09/11 | 1 | 1 | | 15.0 | | | | | 1639.6 | 1639.6 | 1654.6 | VT DEC |

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|---------------------------|-------------------|----------|---|---|-------|-------|------|-------|------|--|---------|---------|---------|-----------------|
| Sta40 | | | | | | | | | | | | | | |
| Rte 78 Access | net | 08/16/11 | 1 | 1 | 30.4 | 28.4 | | | 2.0 | | 3930.7 | 3900.3 | 3991.6 | UVM |
| Rte 78 Access | net | 08/16/11 | 2 | 1 | 16.6 | | | 3.3 | | | 2825.1 | 2825.1 | 2844.9 | UVM |
| Alburgh | net | 08/16/11 | 1 | 1 | 1.0 | 25.4 | | 0.5 | | | 616.1 | 616.1 | 643.0 | UVM |
| Alburgh | net | 08/16/11 | 2 | 1 | 11.7 | | | | | | 339.5 | 339.5 | 351.2 | UVM |
| Highgate Cliffs | net | 08/16/11 | 1 | 1 | | | 0.7 | | | | 3923.5 | 3923.5 | 3924.2 | UVM |
| Highgate Cliffs | net | 08/16/11 | 2 | 1 | 28.5 | | | 0.9 | | | 2588.6 | 2588.6 | 2618.0 | UVM |
| Highgate Springs | net | 08/16/11 | 1 | 1 | | | 6.3 | | | | 9318.8 | 9318.8 | 9325.2 | UVM |
| Highgate Springs | net | 08/16/11 | 2 | 1 | | | | | | | 11392.8 | 11392.8 | 11392.8 | UVM |
| St. Albans Boat Launch | net | 08/16/11 | 1 | 1 | 367.4 | 102.1 | 2.0 | | | | 2281.9 | 1363.4 | 2753.4 | UVM |
| St. Albans Boat Launch | net | 08/16/11 | 2 | 1 | 439.4 | 58.6 | | | | | 1326.6 | 1326.6 | 1824.6 | UVM |
| North Beach shoreline | counted ww as net | 08/15/11 | 1 | 1 | | 87.7 | 70.2 | 324.4 | 17.5 | | 771.7 | 727.8 | 1271.5 | Citizen Monitor |
| Red Rocks Beach shoreline | counted ww as net | 08/15/11 | 1 | 1 | | | 43.8 | 263.1 | | | | | 306.9 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 08/15/11 | 1 | 1 | 87.7 | | 17.5 | 184.1 | | | 771.7 | 771.7 | 1061.0 | Citizen Monitor |

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|-----------------------|-------------------|----------|---|---|--------|-------|-------|-------|-----|--|--------|--------|--------|-----------------|
| Kingsland Bay Beach | counted ww as net | 08/14/11 | 1 | 1 | | | 8.8 | 78.9 | | | 1894.1 | 1894.1 | 1981.8 | Citizen Monitor |
| Rouses Point | counted ww as net | 08/15/11 | 1 | 1 | 26.3 | | 35.1 | 87.7 | | | | | 149.1 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 08/14/11 | 1 | 1 | | 78.9 | 8.8 | | | | 929.5 | 929.5 | 1017.2 | Citizen Monitor |
| Beggs Park | counted ww as net | 08/14/11 | 1 | 1 | 17.5 | | 8.8 | 17.5 | | | 1973.0 | 1973.0 | 2016.8 | Citizen Monitor |
| City Bay | counted ww as net | 08/15/11 | 1 | 1 | 87.7 | | 17.5 | 43.8 | | | 605.1 | 605.1 | 754.1 | Citizen Monitor |
| Willsboro Bay | counted ww as net | 08/15/11 | 1 | 1 | 87.7 | | 184.1 | 228.0 | | | 912.0 | 912.0 | 1411.8 | Citizen Monitor |
| North Hero State Park | counted ww as net | 08/14/11 | 1 | 1 | 1332.9 | 508.6 | | 17.5 | | | 6866.0 | 6866.0 | 8725.0 | Citizen Monitor |
| Pelots Bay | counted ww as net | 08/15/11 | 1 | 1 | 377.1 | 131.5 | 26.3 | 96.5 | | | 2376.4 | 2376.4 | 3007.7 | Citizen Monitor |
| Carry Bay | counted ww as net | 08/14/11 | 1 | 1 | 526.1 | 140.3 | 17.5 | 70.2 | | | 1806.4 | 1806.4 | 2560.5 | Citizen Monitor |
| St. Albans Bay Park | counted ww as net | 08/15/11 | 1 | 1 | 824.3 | 798.0 | 745.4 | 280.6 | 8.8 | | 3709.2 | 3463.7 | 6366.2 | Citizen Monitor |

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|-----------------------------------|-------------------------|----------|---|---|--------|-------|-------|-------|------|--|---------|---------|---------|--------------------|
| Chapman Bay | counted ww as net | 08/14/11 | 1 | 1 | 8.8 | | 26.3 | 52.6 | | | | | 87.7 | Citizen Monitor |
| High Rocks | counted ww as net | 08/15/11 | 1 | 1 | 8.8 | | 43.8 | 17.5 | | | 640.1 | 640.1 | 710.3 | Citizen Monitor |
| Rock River Access | counted ww as net | 08/15/11 | 1 | 1 | 26.3 | 35.1 | 17.5 | | | | 228.0 | 228.0 | 306.9 | Citizen Monitor |
| Maquam Bay | counted ww as net | 08/16/11 | 1 | 1 | 8.8 | | 8.8 | 43.8 | | | 438.4 | 438.4 | 499.8 | Citizen Monitor |
| Donaldson Point | counted ww as net | 08/15/11 | 1 | 1 | 87.7 | 8.8 | 52.6 | 35.1 | | | 990.9 | 990.9 | 1175.0 | Citizen Monitor |
| Highgate Springs- Shipyards | counted ww as net | 08/14/11 | 1 | 1 | 8.8 | 149.1 | 306.9 | 131.5 | 17.5 | | 2499.1 | 2499.1 | 3112.9 | Citizen Monitor |
| VTDEC Sta02 | net | 08/11/11 | 1 | 1 | 332.2 | 38.7 | 23.4 | | 1.7 | | 68.7 | 68.7 | 464.7 | VT DEC |
| VTDEC Sta04 | net | 08/11/11 | 1 | 1 | 1629.0 | 98.5 | 2.0 | | 2.0 | | 168.9 | 168.9 | 1900.5 | VT DEC |
| VTDEC Sta46 | net | 08/12/11 | 1 | 1 | 43.1 | 4.9 | 0.2 | | 0.2 | | 504.9 | 504.9 | 553.3 | VT DEC |
| VTDEC Sta50 | net | 08/12/11 | 1 | 1 | 17.5 | | | | | | 2361.4 | 2361.4 | 2378.9 | VT DEC |
| VTDEC Sta51 | net | 08/12/11 | 1 | 1 | | | | | | | 3109.4 | 3109.4 | 3109.4 | VT DEC |
| Rte 78 Access | net | 08/23/11 | 1 | 1 | 90.3 | | | | 2.9 | | 19244.5 | 19157.1 | 19337.6 | UVM |
| Rte 78 Access | net | 08/23/11 | 1 | 2 | 7.3 | | | | | | 6699.9 | 6699.9 | 6707.2 | UVM |

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|------------------------|-------------------|----------|---|---|--------|-------|-------|------|------|-----|---------|---------|---------|--------|
| Rte 78 Access | net | 08/23/11 | 2 | 1 | | | | | | | 6234.6 | 6234.6 | 6234.6 | UVM |
| Alburgh | net | 08/23/11 | 1 | 1 | 7.0 | 5.4 | | | 1.8 | | 1249.4 | 1249.4 | 1263.6 | UVM |
| Highgate Cliffs | net | 08/23/11 | 1 | 1 | | | | | | | 6912.7 | 6912.7 | 6912.7 | UVM |
| Highgate Cliffs | net | 08/23/11 | 1 | 2 | 12.8 | 6.4 | | | | | 2575.5 | 2575.5 | 2594.7 | UVM |
| Highgate Cliffs | net | 08/23/11 | 2 | 1 | 23.3 | | | 1.2 | | | 1700.6 | 1700.6 | 1725.1 | UVM |
| Highgate Springs | net | 08/23/11 | 1 | 1 | | | | | 6.9 | | 10803.0 | 10803.0 | 10809.9 | UVM |
| Highgate Springs | net | 08/23/11 | 2 | 1 | | | | 8.6 | | | 10683.4 | 10683.4 | 10692.1 | UVM |
| St. Albans Boat Launch | net | 08/23/11 | 1 | 1 | 1920.1 | 29.5 | | | | | 8046.0 | 3430.3 | 9995.6 | UVM |
| St. Albans Boat Launch | net | 08/23/11 | 2 | 1 | 1336.0 | | | | | | 3942.6 | 3942.6 | 5278.6 | UVM |
| Donaldson Point | counted ww as net | 08/18/11 | 1 | 1 | 73.7 | 399.9 | 357.8 | 10.5 | 10.5 | | 17046.7 | 17046.7 | 17899.0 | UVM |
| VTDEC Sta25 | net | 08/17/11 | 1 | 1 | 16.5 | 0.8 | 1.0 | 0.1 | 0.3 | 0.1 | 32.7 | 32.7 | 51.4 | VT DEC |
| VTDEC Sta07 | net | 08/18/11 | 1 | 1 | 514.9 | 132.1 | 40.4 | | | | 8095.4 | 8095.4 | 8782.8 | VT DEC |
| VTDEC Sta09 | net | 08/18/11 | 1 | 1 | 105.3 | 42.1 | 2.6 | | | | 9250.0 | 9250.0 | 9400.0 | VT DEC |
| Northwest Bay | net | 08/18/11 | 1 | 1 | | | | | | | 5774.3 | 5774.3 | 5774.3 | VT DEC |
| VTDEC Sta16 | net | 08/19/11 | 1 | 1 | 50.1 | 10.7 | 0.4 | 0.4 | 1.2 | | 1236.9 | 1236.9 | 1299.7 | VT DEC |
| VTDEC | net | 08/19/11 | 1 | 1 | 61.6 | | | | | | 5052.6 | 5052.6 | 5114.2 | VT DEC |

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|---------------------------------|-------------------------|----------|---|---|-------|--------|------|------|------|--|---------|---------|---------|--------------------|
| Sta19 | | | | | | | | | | | | | | |
| VTDEC Sta21 | net | 08/19/11 | 1 | 1 | 43.2 | 1.1 | | | 2.1 | | 3672.6 | 3672.6 | 3718.9 | VT DEC |
| St. Albans Bay Park | counted ww as net | 08/21/11 | 1 | 1 | 263.1 | 2315.0 | 65.8 | 26.3 | | | 13429.5 | 13429.5 | 16099.6 | Citizen Monitor |
| North Beach | counted ww as net | 08/22/11 | 1 | 1 | 17.5 | | 26.3 | 17.5 | | | 7400.9 | 7400.9 | 7462.3 | Citizen Monitor |
| Red Rocks Beach shoreline | counted ww as net | 08/22/11 | 1 | 1 | 17.5 | 70.2 | | | | | 876.9 | 876.9 | 964.6 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 08/21/11 | 1 | 1 | 87.7 | 8.8 | | | | | 657.7 | 657.7 | 754.1 | Citizen Monitor |
| Beggs Park | counted ww as net | 08/21/11 | 1 | 1 | 8.8 | | | | | | 1034.7 | 1034.7 | 1043.5 | Citizen Monitor |
| Pelots Bay | counted ww as net | 08/21/11 | 1 | 1 | 754.1 | 201.7 | 35.1 | 87.7 | | | 175.4 | 175.4 | 1253.9 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 08/21/11 | 1 | 1 | | | 35.1 | 35.1 | 26.3 | | 605.1 | 605.1 | 701.5 | Citizen Monitor |
| Rouses Point | counted ww as net | 08/21/11 | 1 | 1 | | | 26.3 | 78.9 | | | | | 105.2 | Citizen Monitor |
| Willsboro Bay | counted ww as net | 08/21/11 | 1 | 1 | 8.8 | 271.8 | 17.5 | 26.3 | | | 4068.8 | 3805.7 | 4393.2 | Citizen Monitor |

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|----------------------------------|-------------------------|----------|---|---|-------|-------|-------|-------|------|--|---------|---------|---------|--------------------|
| Carry Bay | counted ww as net | 08/21/11 | 1 | 1 | 517.4 | 70.2 | 17.5 | 26.3 | | | 1736.2 | 1736.2 | 2367.6 | Citizen Monitor |
| City Bay | counted ww as net | 08/21/11 | 1 | 1 | | | 52.6 | 52.6 | | | 333.2 | 333.2 | 438.4 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 08/21/11 | 1 | 1 | 122.8 | | 17.5 | 122.8 | | | 6629.3 | 6629.3 | 6892.3 | Citizen Monitor |
| North Hero State Park | counted ww as net | 08/21/11 | 1 | 1 | 87.7 | | | 8.8 | | | 11846.7 | 11846.7 | 11943.2 | Citizen Monitor |
| Dunham Bay | counted ww as net | 08/22/11 | 1 | 1 | | | | | | | 79333.3 | 79333.3 | 79333.3 | Citizen Monitor |
| Donaldson Point | counted ww as net | 08/22/11 | 1 | 1 | 131.5 | 245.5 | 96.5 | 201.7 | | | 491.1 | 491.1 | 1166.3 | Citizen Monitor |
| Highgate Springs- Shipyard | counted ww as net | 08/21/11 | 1 | 1 | 96.5 | 122.8 | 552.4 | 78.9 | 26.3 | | 3183.1 | 3183.1 | 4060.0 | Citizen Monitor |
| Rock River Access | counted ww as net | 08/22/11 | 1 | 1 | | | 8.8 | | | | 438.4 | 438.4 | 447.2 | Citizen Monitor |
| High Rocks | counted ww as net | 08/22/11 | 1 | 1 | 87.7 | 482.3 | 87.7 | | 61.4 | | 8269.0 | 8269.0 | 8988.1 | Citizen Monitor |
| Maquam Bay | counted ww as net | 08/22/11 | 1 | 1 | 8.8 | 35.1 | | 8.8 | 8.8 | | 491.1 | 491.1 | 552.4 | Citizen Monitor |

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|------------------------|-------------------------|----------|---|---|-------|-------|-------|------|-----|--|--------|--------|--------|--------------------|
| Chapman Bay | counted ww as net | 08/21/11 | 1 | 1 | 8.8 | 35.1 | | 8.8 | 8.8 | | | | 61.4 | Citizen Monitor |
| VTDEC Sta02 | net | 08/22/11 | 1 | 1 | 57.7 | | | | 0.8 | | 823.6 | 823.6 | 882.1 | VT DEC |
| VTDEC Sta04 | net | 08/22/11 | 1 | 1 | 548.3 | 22.1 | | | 3.7 | | 303.6 | 303.6 | 877.7 | VT DEC |
| VTDEC Sta34 | net | 08/23/11 | 1 | 1 | 70.2 | 10.7 | 0.2 | | 1.1 | | 2945.6 | 1062.8 | 3027.8 | VT DEC |
| VTDEC Sta40 | net | 08/23/11 | 1 | 1 | 698.3 | 16.4 | | | 2.1 | | 706.5 | 706.5 | 1423.4 | VT DEC |
| Rte 78 Access | net | 08/30/11 | 1 | 1 | 76.4 | | 1.5 | | 1.5 | | 2845.9 | 2845.9 | 2925.3 | UVM |
| Rte 78 Access | net | 08/30/11 | 2 | 1 | 115.0 | 19.7 | | | | | 2371.0 | 2371.0 | 2505.8 | UVM |
| Alburgh - Shore | counted ww as net | 08/30/11 | 1 | 1 | | 438.4 | 157.8 | | | | 6120.7 | 6120.7 | 6717.0 | UVM |
| Alburgh - Shore | counted ww as net | 08/30/11 | 1 | 2 | 17.5 | 105.2 | 114.0 | 17.5 | | | 324.4 | 8.8 | 578.7 | UVM |
| Alburgh - Shore | counted ww as net | 08/30/11 | 2 | 1 | 8.8 | 999.7 | 26.3 | 8.8 | | | | | 1043.5 | UVM |
| St. Albans Boat Launch | net | 08/30/11 | 1 | 1 | 52.8 | | 0.1 | | 0.1 | | 215.1 | 215.1 | 268.2 | UVM |
| St. Albans Boat Launch | net | 08/30/11 | 2 | 1 | 431.8 | 36.1 | | | | | 1647.9 | 1647.9 | 2115.8 | UVM |

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|---------------------------|-------------------|----------|---|---|-------|-------|------|------|--|--|---------|---------|---------|-----------------|
| Red Rocks Beach shoreline | counted ww as net | 08/29/11 | 1 | 1 | 8.8 | | 17.5 | 26.3 | | | 7497.4 | 7497.4 | 7550.0 | Citizen Monitor |
| North Beach shoreline | counted ww as net | 08/29/11 | 1 | 1 | | | | | | | 6006.7 | 6006.7 | 6006.7 | Citizen Monitor |
| St. Albans Bay Park | counted ww as net | 08/29/11 | 1 | 1 | 631.4 | 420.9 | 43.8 | | | | 1175.0 | 1175.0 | 2271.1 | Citizen Monitor |
| Donaldson Point | counted ww as net | 08/27/11 | 1 | 1 | 17.5 | 210.5 | | | | | 11425.8 | 11425.8 | 11653.8 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 08/29/11 | 1 | 1 | 26.3 | 26.3 | 35.1 | | | | | | 87.7 | Citizen Monitor |
| Chapman Bay | counted ww as net | 08/29/11 | 1 | 1 | | 52.6 | 35.1 | | | | 263.1 | 263.1 | 350.8 | Citizen Monitor |
| City Bay | counted ww as net | 08/29/11 | 1 | 1 | 8.8 | | | 8.8 | | | 2630.7 | 2630.7 | 2648.2 | Citizen Monitor |
| Pelots Bay | counted ww as net | 08/29/11 | 1 | 1 | 822.1 | 197.3 | 82.2 | 16.4 | | | 34461.6 | 34461.6 | 35579.7 | Citizen Monitor |
| Carry Bay | counted ww as net | 08/29/11 | 1 | 1 | 228.0 | 140.3 | 17.5 | | | | 166.6 | 166.6 | 552.4 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 08/29/11 | 1 | 1 | 8.8 | | 17.5 | 17.5 | | | 5208.7 | 5208.7 | 5252.6 | Citizen Monitor |

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|------------------------|-------------------|----------|---|---|-------|-------|-------|-------|-----|--|--------|--------|--------|-----------------|
| Rouses Point | counted ww as net | 08/29/11 | 1 | 1 | 8.8 | | | | 8.8 | | | | 17.5 | Citizen Monitor |
| Rte 78 Access-shore | counted ww as net | 09/06/11 | 1 | 1 | 17.5 | 201.7 | 43.8 | 114.0 | 8.8 | | 6313.6 | 2630.7 | 6699.4 | UVM |
| Rte 78 Access-shore | counted ww as net | 09/06/11 | 2 | 1 | 201.7 | | 105.2 | 61.4 | 8.8 | | 2595.6 | 2595.6 | 2972.6 | UVM |
| Alburgh - Shore | counted ww as net | 09/06/11 | 1 | 1 | 17.5 | 175.4 | 78.9 | 26.3 | | | 1850.2 | 1850.2 | 2148.4 | UVM |
| Alburgh - Shore | counted ww as net | 09/06/11 | 2 | 1 | | 578.7 | 70.2 | 52.6 | | | 3244.5 | 3244.5 | 3946.0 | UVM |
| St. Albans Boat Launch | net | 09/06/11 | 1 | 1 | 715.9 | 110.1 | 2.1 | 4.2 | | | 1321.7 | 1321.7 | 2154.1 | UVM |
| St. Albans Boat Launch | net | 09/06/11 | 2 | 1 | 260.7 | 161.6 | | | 2.2 | | 1744.9 | 452.4 | 2169.3 | UVM |
| VTDEC Sta25 | net | 09/01/11 | 1 | 1 | 106.2 | 0.5 | 42.4 | 0.9 | 0.4 | | 19.0 | 19.0 | 169.3 | VT DEC |
| VTDEC Sta33 | net | 09/01/11 | 1 | 1 | | | | | 1.5 | | 2462.1 | 2462.1 | 2463.6 | VT DEC |
| VTDEC Sta36 | net | 09/01/11 | 1 | 1 | 9.0 | | | | | | 1573.3 | 1573.3 | 1582.3 | VT DEC |
| VTDEC Sta09 | net | 09/02/11 | 1 | 1 | 95.0 | | | | 1.6 | | 2689.9 | 2689.9 | 2786.5 | VT DEC |
| VTDEC Sta07 | net | 09/02/11 | 1 | 1 | 101.5 | | | | 0.1 | | 256.7 | 256.7 | 358.3 | VT DEC |

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|---------------------------|-------------------|----------|---|---|-------|-------|-------|-------|------|-------|---------|---------|---------|-----------------|
| Donaldson Point | counted ww as net | 09/04/11 | 1 | 1 | 26.3 | 894.4 | 140.3 | 8.8 | 17.5 | | 657.7 | 657.7 | 1745.0 | Citizen Monitor |
| Highgate Springs-Shipyard | counted ww as net | 09/04/11 | 1 | 1 | 8.8 | 105.2 | 166.6 | 87.7 | 17.5 | | | | 385.8 | Citizen Monitor |
| North Beach shoreline | counted ww as net | 09/06/11 | 1 | 1 | 263.1 | 35.1 | 61.4 | 61.4 | | | | | 420.9 | Citizen Monitor |
| Red Rocks Beach shoreline | counted ww as net | 09/06/11 | 1 | 1 | 8.8 | | 17.5 | | | | 1148.7 | 1148.7 | 1175.0 | Citizen Monitor |
| North Hero State Park | counted ww as net | 08/29/11 | 1 | 1 | 105.2 | | | | | | 14056.5 | 14056.5 | 14161.7 | Citizen Monitor |
| Beggs Park | counted ww as net | 08/29/11 | 1 | 1 | 87.7 | 17.5 | 8.8 | 70.2 | | | 3902.1 | 3902.1 | 4086.3 | Citizen Monitor |
| Beggs Park | counted ww as net | 09/03/11 | 1 | 1 | | | | | | | 491.1 | 491.1 | 491.1 | Citizen Monitor |
| Kingsland Bay Beach | counted ww as net | 09/04/11 | 1 | 1 | | 140.3 | 631.4 | 105.2 | | 578.7 | 657.7 | 657.7 | 2113.3 | Citizen Monitor |
| North Hero State Park | counted ww as net | 09/04/11 | 1 | 1 | 438.4 | | 8.8 | | 8.8 | | 114.0 | 114.0 | 570.0 | Citizen Monitor |
| Larrabee's Point | counted ww as net | 09/04/11 | 1 | 1 | 114.0 | | 114.0 | | 26.3 | 210.5 | 333.2 | 333.2 | 798.0 | Citizen Monitor |

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|---------------------------------|-------------------------|----------|---|---|--------|-------|-------|-------|-------|-----|--------|--------|--------|--------------------|
| Carry Bay | counted ww as net | 09/05/11 | 1 | 1 | 377.1 | 96.5 | 157.8 | 157.8 | 35.1 | | 2244.8 | 2244.8 | 3069.1 | Citizen Monitor |
| Willsboro Bay | counted ww as net | 09/06/11 | 1 | 1 | 8.8 | | 8.8 | 78.9 | | | 1481.9 | 1481.9 | 1578.4 | Citizen Monitor |
| Point Au Roche State Park | counted ww as net | 09/06/11 | 1 | 1 | | | 61.4 | 17.5 | 105.2 | | 219.2 | 219.2 | 403.4 | Citizen Monitor |
| Rouses Point | counted ww as net | 09/06/11 | 1 | 1 | 8.8 | | 8.8 | 17.5 | 8.8 | 8.8 | 771.7 | 771.7 | 824.3 | Citizen Monitor |
| City Bay | counted ww as net | 09/06/11 | 1 | 1 | 87.7 | 43.8 | 52.6 | 26.3 | 8.8 | | | | 219.2 | Citizen Monitor |
| Pelots Bay | counted ww as net | 09/06/11 | 1 | 1 | 2306.2 | 35.1 | 105.2 | 105.2 | | 8.8 | 1429.3 | 1429.3 | 3989.8 | Citizen Monitor |
| VTDEC Sta16 | net | 09/07/11 | 1 | 1 | 17.4 | | 3.3 | 0.3 | 2.4 | | 95.3 | 95.3 | 118.6 | VT DEC |
| VTDEC Sta19 | net | 09/07/11 | 1 | 1 | 17.5 | | 0.5 | | 0.3 | | 181.7 | 181.7 | 200.0 | VT DEC |
| VTDEC Sta21 | net | 09/07/11 | 1 | 1 | 37.0 | 3.2 | | 0.4 | 0.6 | | 148.1 | 148.1 | 189.4 | VT DEC |
| Rte 78 Access | net | 09/13/11 | 1 | 1 | 149.8 | 7.6 | | | 0.3 | | 553.0 | 553.0 | 710.7 | UVM |
| Rte 78 Access | net | 09/13/11 | 2 | 1 | 122.2 | 32.1 | | | 0.5 | | 388.6 | 380.1 | 543.4 | UVM |
| Alburgh | counted ww as net | 09/13/11 | 1 | 1 | 96.5 | 105.2 | 131.5 | 114.0 | | | 52.6 | 52.6 | 499.8 | UVM |

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|----------------------------------|-------------------------|----------|---|---|-------|-------|-------|------|------|-----|--------|--------|--------|--------|
| Alburgh | counted ww as net | 09/13/11 | 2 | 1 | 96.5 | 105.2 | 342.0 | 26.3 | 8.8 | 8.8 | 990.9 | 990.9 | 1578.4 | UVM |
| Highgate Springs- Shipyard | counted ww as net | 09/13/11 | 1 | 1 | | 17.5 | 35.1 | 17.5 | | | 438.4 | 438.4 | 508.6 | UVM |
| Highgate Springs- Shipyard | counted ww as net | 09/13/11 | 2 | 1 | 105.2 | 43.8 | 70.2 | 52.6 | 70.2 | 8.8 | 1157.5 | | 1508.2 | UVM |
| St. Albans Boat Launch | counted ww as net | 09/13/11 | 1 | 1 | 385.8 | 859.3 | 52.6 | 35.1 | | | 1718.7 | 1718.7 | 3051.6 | UVM |
| St. Albans Boat Launch | counted ww as net | 09/13/11 | 2 | 1 | 719.0 | 61.4 | 96.5 | 26.3 | | | 1403.0 | 1403.0 | 2306.2 | UVM |
| VTDEC Sta34 | net | 09/09/11 | 1 | 1 | 78.6 | 14.5 | 0.5 | | 1.0 | | 544.9 | 532.6 | 639.6 | VT DEC |
| VTDEC Sta40 | net | 09/09/11 | 1 | 1 | 644.5 | 92.4 | 0.6 | | 0.6 | | 777.0 | 777.0 | 1515.2 | VT DEC |
| Holiday Point | net | 09/09/11 | 1 | 1 | 50.6 | | 1.3 | | | | 941.2 | 941.2 | 993.1 | VT DEC |
| VTDEC Sta46 | net | 09/12/11 | 1 | 1 | 28.3 | | 7.5 | 0.7 | 1.3 | | 133.7 | 133.7 | 171.6 | VT DEC |
| VTDEC Sta50 | net | 09/12/11 | 1 | 1 | 33.1 | | 0.3 | | | 0.3 | 1928.6 | 1912.0 | 1962.2 | VT DEC |
| VTDEC Sta51 | net | 09/12/11 | 1 | 1 | 77.0 | 48.1 | 1.0 | | 1.0 | | 3204.1 | 3197.4 | 3331.2 | VT DEC |
| VTDEC Sta25 | net | 09/13/11 | 1 | 1 | 160.4 | | 2.5 | 0.2 | 0.3 | | 55.6 | 55.6 | 218.9 | VT DEC |
| Rte 78 Access- shore | counted ww as net | 09/20/11 | 1 | 1 | 8.8 | | 35.1 | 61.4 | 43.8 | | 394.6 | 394.6 | 543.7 | UVM |

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|---------------------------|-------------------|----------|---|---|-------|-------|-------|-------|-------|-----|---------|---------|---------|-----------------|
| Rte 78 Access-shore | counted ww as net | 09/20/11 | 2 | 1 | 403.4 | 122.8 | 245.5 | 131.5 | 52.6 | 8.8 | 8882.9 | 8768.9 | 9847.4 | UVM |
| Alburgh - Shore | counted ww as net | 09/20/11 | 1 | 1 | 228.0 | 35.1 | 271.8 | 17.5 | 8.8 | | 10952.3 | 10952.3 | 11513.5 | UVM |
| Alburgh - Shore | counted ww as net | 09/20/11 | 2 | 1 | 17.5 | 192.9 | 70.2 | 105.2 | | | 6339.9 | 6339.9 | 6725.7 | UVM |
| Highgate Cliffs | counted ww as net | 09/20/11 | 1 | 1 | 175.4 | | 87.7 | 35.1 | 8.8 | | 23220.0 | 23220.0 | 23526.9 | UVM |
| Highgate Cliffs | counted ww as net | 09/20/11 | 2 | 1 | 8.8 | | 122.8 | 43.8 | 43.8 | | 10961.1 | 10961.1 | 11180.3 | UVM |
| Highgate Springs | counted ww as net | 09/20/11 | 1 | 1 | 885.7 | | 368.3 | 122.8 | 175.4 | 8.8 | 5129.8 | 5077.2 | 6690.6 | UVM |
| Highgate Springs | counted ww as net | 09/20/11 | 2 | 1 | 719.0 | 570.0 | 368.3 | 70.2 | 166.6 | 8.8 | 10610.3 | 10610.3 | 12513.2 | UVM |
| St. Albans Boat Launch | net | 09/20/11 | 1 | 1 | 114.0 | 6.3 | 0.9 | | 2.0 | 0.2 | 891.0 | 886.5 | 1014.5 | UVM |
| St. Albans Boat Launch | net | 09/20/11 | 2 | 1 | 107.1 | 30.1 | 1.6 | | 3.0 | | 584.7 | 575.3 | 726.5 | UVM |
| Highgate Springs-Shipyard | counted ww as net | 09/18/11 | 1 | 1 | 10.5 | 115.7 | 157.8 | | | | 58421.7 | 57664.1 | 58705.8 | Citizen Monitor |

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|------------------------------|-------------------------|----------|---|---|-------|------|------|------|------|-----|---------|---------|---------|--------------------|
| Dunham Bay | counted ww as net | 09/21/11 | 1 | 1 | 657.7 | 52.6 | 78.9 | 35.1 | 78.9 | | 8619.8 | 8619.8 | 9523.0 | Citizen Monitor |
| VTDEC Sta02 | net | 09/14/11 | 1 | 1 | 80.8 | | 4.3 | | | 0.1 | 5.0 | 5.0 | 90.2 | VT DEC |
| VTDEC Sta04 | net | 09/14/11 | 1 | 1 | 94.4 | 4.9 | 9.3 | 0.1 | 0.3 | 0.1 | 18.7 | 16.9 | 127.9 | VT DEC |
| VTDEC Sta33 | net | 09/19/11 | 1 | 1 | 26.2 | | 14.1 | 0.5 | 0.8 | | 77.2 | 77.2 | 118.9 | VT DEC |
| VTDEC Sta36 | net | 09/19/11 | 1 | 1 | 30.3 | | 0.5 | 0.4 | 0.3 | | 61.8 | 61.8 | 93.2 | VT DEC |
| VTDEC Sta07 | net | 09/21/11 | 1 | 1 | 583.4 | | 0.7 | 0.7 | | | | | 584.9 | VT DEC |
| VTDEC Sta09 | net | 09/21/11 | 1 | 1 | 476.5 | | 0.8 | 0.8 | | | 34.8 | 34.8 | 513.0 | VT DEC |
| Rte 78 Access | net | 09/27/11 | 1 | 1 | 590.9 | 54.6 | | | 4.3 | | 575.1 | 575.1 | 1225.0 | UVM |
| Rte 78 Access | net | 09/27/11 | 2 | 1 | 504.0 | 24.0 | 10.4 | | | | 1192.1 | 1192.1 | 1730.6 | UVM |
| Alburgh | net | 09/27/11 | 2 | 1 | 191.0 | 12.1 | 1.1 | | | | 1428.6 | 1388.3 | 1632.7 | UVM |
| Highgate Cliffs | net | 09/27/11 | 1 | 1 | 838.0 | | 2.5 | | | | 834.9 | 834.9 | 1675.4 | UVM |
| Highgate Cliffs | net | 09/27/11 | 2 | 1 | 658.8 | 8.4 | 0.5 | 0.5 | | | 177.0 | 177.0 | 845.2 | UVM |
| Highgate Springs | net | 09/27/11 | 1 | 1 | 496.7 | 16.8 | 8.4 | | 0.7 | | 462.4 | 446.3 | 984.9 | UVM |
| Highgate Springs | net | 09/27/11 | 2 | 1 | 608.2 | | 1.2 | | 0.6 | 1.2 | 1136.2 | 1136.2 | 1747.5 | UVM |
| St. Albans Boat Launch | net | 09/27/11 | 1 | 1 | | | | | | | 9531.7 | 9531.7 | 9531.7 | UVM |
| St. Albans Boat | net | 09/27/11 | 2 | 1 | | | | | | | 12734.5 | 12734.5 | 12734.5 | UVM |

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|---------------------------|-------------------------|----------|---|---|-------|------|-------|-----|-------|-------|----------|----------|----------|-----------------|
| Launch | | | | | | | | | | | | | | |
| VTDEC Sta16 | net | 09/22/11 | 1 | 1 | 86.0 | | 1.4 | 0.4 | 0.4 | 0.2 | 101.6 | 101.6 | 189.8 | VT DEC |
| VTDEC Sta19 | net | 09/23/11 | 1 | 1 | 108.1 | 10.9 | 4.4 | | 0.8 | | 154.8 | 154.8 | 279.1 | VT DEC |
| VTDEC Sta21 | net | 09/22/11 | 1 | 1 | 126.0 | 13.9 | 2.9 | 0.1 | 0.3 | | 167.5 | 166.5 | 310.8 | VT DEC |
| Highgate Springs-Shipyard | counted ww as net | 09/25/11 | 1 | 1 | 350.8 | | | | 175.4 | 175.4 | 943530.1 | 940548.7 | 944231.6 | Citizen Monitor |
| VTDEC Sta46 | net | 09/26/11 | 1 | 1 | 20.7 | | 5.7 | 0.2 | 0.2 | | 7.0 | 7.0 | 33.7 | VT DEC |
| VTDEC Sta50 | net | 09/26/11 | 1 | 1 | 179.5 | 2.6 | 0.5 | 1.5 | 0.2 | | 273.0 | 254.3 | 457.2 | VT DEC |
| VTDEC Sta51 | net | 09/26/11 | 1 | 1 | 313.0 | 11.6 | 1.3 | 0.2 | 0.2 | | 379.4 | 363.4 | 705.6 | VT DEC |
| VTDEC Sta02 | net | 09/27/11 | 1 | 1 | 47.0 | 0.2 | 52.0 | 0.8 | 0.5 | | 19.3 | 17.9 | 119.8 | VT DEC |
| VTDEC Sta04 | net | 09/27/11 | 1 | 1 | 383.3 | 21.8 | 2.0 | | 1.2 | | 32.6 | 26.7 | 440.9 | VT DEC |
| VTDEC Sta34 | net | 09/28/11 | 1 | 1 | 24.1 | 4.5 | 0.3 | | 0.2 | 0.2 | 410.5 | 393.2 | 439.8 | VT DEC |
| VTDEC Sta40 | net | 09/28/11 | 1 | 1 | 5.4 | 2.0 | 0.2 | | 0.8 | | 600.3 | 600.3 | 608.8 | VT DEC |
| North Hero House dock | counted ww as net | 09/28/11 | 1 | 1 | | 70.2 | 131.5 | | 43.8 | 8.8 | | | 254.3 | UVM |
| Rte 78 Access | net | 10/04/11 | 1 | 1 | 580.7 | | 4.5 | | 4.5 | | 4000.4 | 4000.4 | 4590.1 | UVM |
| Rte 78 Access | net | 10/04/11 | 2 | 1 | 291.1 | | | 2.4 | 2.4 | | 5247.8 | 5247.8 | 5543.8 | UVM |

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|---------------------------|-------------------|----------|---|---|-------|-------|------|------|-------|--|----------|----------|----------|-----------------|
| Alburgh | net | 10/04/11 | 1 | 1 | 76.6 | | | 0.1 | 0.7 | | 293.3 | 287.1 | 370.7 | UVM |
| Alburgh | net | 10/04/11 | 2 | 1 | 64.8 | | 0.1 | 0.1 | 0.9 | | 192.3 | 192.3 | 258.2 | UVM |
| Highgate Cliffs | net | 10/04/11 | 1 | 1 | 684.6 | | 16.0 | | 1.1 | | 124.1 | 123.0 | 825.8 | UVM |
| Highgate Cliffs | net | 10/04/11 | 2 | 1 | 589.4 | | 0.6 | | 1.9 | | 193.0 | 193.0 | 784.9 | UVM |
| Highgate Springs | net | 10/04/11 | 1 | 1 | 732.2 | | 0.6 | | | | 1055.2 | 1055.2 | 1788.0 | UVM |
| Highgate Springs | net | 10/04/11 | 2 | 1 | 770.7 | | 0.5 | | | | 514.1 | 514.1 | 1285.4 | UVM |
| St. Albans Boat Launch | net | 10/04/11 | 1 | 1 | 189.3 | 3.5 | 0.3 | | 0.1 | | 85.9 | 85.3 | 279.1 | UVM |
| St. Albans Boat Launch | net | 10/04/11 | 2 | 1 | 91.5 | 1.8 | 4.2 | | 0.3 | | 109.8 | 109.8 | 207.5 | UVM |
| Highgate Springs-Shipyard | counted ww as net | 10/02/11 | 1 | 1 | | 17.5 | 8.8 | | 8.8 | | | | 35.1 | Citizen Monitor |
| VTDEC Sta25 | net | 10/04/11 | 1 | 1 | 24.6 | | 3.1 | 0.3 | 0.6 | | 72.3 | 72.3 | 100.9 | VT DEC |
| Donaldson Point | counted ww as net | 10/05/11 | 1 | 1 | 157.8 | 157.8 | 26.3 | | 144.7 | | 129823.1 | 129823.1 | 130309.8 | UVM |
| Rte 78 Access | net | 10/11/11 | 1 | 1 | 181.8 | | 5.7 | 1.6 | 22.2 | | 2103.6 | 2090.1 | 2314.9 | UVM |
| Rte 78 Access | net | 10/11/11 | 2 | 1 | 324.5 | | 6.1 | 50.7 | 20.3 | | 3967.2 | 3886.1 | 4368.8 | UVM |
| Alburgh | net | 10/11/11 | 1 | 1 | 105.5 | 0.2 | 0.4 | 0.3 | 0.1 | | 148.4 | 148.4 | 254.9 | UVM |
| Alburgh | net | 10/11/11 | 2 | 1 | 83.9 | | 0.3 | 0.6 | 0.6 | | 68.7 | 68.7 | 154.2 | UVM |
| Highgate Cliffs | net | 10/11/11 | 1 | 1 | 784.0 | | 4.0 | | 4.6 | | 440.3 | 440.3 | 1232.9 | UVM |

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|---------------------------|-------------------|----------|---|---|-------|------|-------|------|-------|-----|--------|--------|--------|-----------------|
| Highgate Cliffs | net | 10/11/11 | 2 | 1 | 485.5 | | 0.7 | 6.6 | 2.0 | | 546.5 | 546.5 | 1041.3 | UVM |
| Highgate Springs | net | 10/11/11 | 1 | 1 | 810.1 | | | 1.0 | 2.5 | | 198.6 | 198.6 | 1012.3 | UVM |
| Highgate Springs | net | 10/11/11 | 2 | 1 | 839.3 | | 0.6 | 1.8 | 3.0 | | 281.0 | 281.0 | 1125.6 | UVM |
| St. Albans Boat Launch | net | 10/11/11 | 1 | 1 | 425.0 | 79.6 | | 3.2 | 3.2 | 1.6 | 1806.7 | 1806.7 | 2319.2 | UVM |
| St. Albans Boat Launch | net | 10/11/11 | 2 | 1 | 501.4 | 7.1 | 5.4 | 10.7 | 3.6 | | 1962.8 | 1962.8 | 2490.9 | UVM |
| Highgate Springs-Shipyard | counted ww as net | 10/09/11 | 1 | 1 | 359.5 | | 245.5 | 17.5 | 736.6 | | 876.9 | 876.9 | 2236.1 | Citizen Monitor |
| VTDEC Sta07 | net | 10/07/11 | 1 | 1 | 196.8 | 0.4 | | 0.1 | | | 50.6 | 50.6 | 248.0 | VT DEC |
| VTDEC Sta09 | net | 10/07/11 | 1 | 1 | 74.5 | | 0.1 | | | | 39.1 | 39.1 | 113.8 | VT DEC |
| VTDEC Sta16 | net | 10/12/11 | 1 | 1 | 51.5 | | 1.0 | 0.7 | 0.1 | 0.1 | 131.9 | 131.9 | 185.6 | VT DEC |
| VTDEC Sta19 | net | 10/12/11 | 1 | 1 | 58.3 | 3.9 | 1.4 | 0.1 | 0.1 | 0.1 | 65.6 | 65.6 | 129.5 | VT DEC |
| VTDEC Sta21 | net | 10/12/11 | 1 | 1 | 112.3 | | 0.7 | 0.3 | 0.1 | | 26.6 | 26.6 | 140.1 | VT DEC |
| Rte 78 Access | net | 10/18/11 | 1 | 1 | 54.9 | | 0.3 | | 1.2 | 0.1 | 82.4 | 82.4 | 138.8 | UVM |
| Rte 78 Access | net | 10/18/11 | 2 | 1 | 33.1 | 0.2 | 0.1 | 0.4 | 0.8 | | 58.2 | 57.4 | 92.9 | UVM |
| Alburgh | net | 10/18/11 | 1 | 1 | 92.8 | | 0.4 | | 1.5 | 0.1 | 230.4 | 230.4 | 325.2 | UVM |
| Alburgh | net | 10/18/11 | 2 | 1 | 54.8 | | | | 1.1 | | 140.9 | 140.9 | 196.8 | UVM |
| Highgate Cliffs | net | 10/18/11 | 1 | 1 | 133.3 | | 0.3 | | 0.3 | | 99.3 | 97.0 | 233.2 | UVM |

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|------------------------|-----|----------|---|---|--------|------|-----|-----|-----|-----|-------|-------|--------|--------|
| Highgate Cliffs | net | 10/18/11 | 2 | 1 | 95.7 | | 0.0 | 0.1 | 0.5 | | 73.4 | 73.4 | 169.7 | UVM |
| Highgate Springs | net | 10/18/11 | 1 | 1 | 35.8 | 0.4 | 4.1 | | 0.1 | | 41.3 | 41.3 | 81.8 | UVM |
| Highgate Springs | net | 10/18/11 | 2 | 1 | 59.9 | 0.2 | 2.8 | 0.1 | 0.2 | | 80.5 | 80.2 | 143.7 | UVM |
| St. Albans Boat Launch | net | 10/18/11 | 1 | 1 | 195.7 | 7.1 | 0.1 | | 2.2 | | 83.6 | 83.6 | 288.7 | UVM |
| St. Albans Boat Launch | net | 10/18/11 | 2 | 1 | 167.1 | 1.0 | 0.5 | | 2.5 | | 157.9 | 154.8 | 328.9 | UVM |
| VTDEC Sta46 | net | 10/14/11 | 1 | 1 | 6.5 | | 1.2 | 0.0 | 0.4 | 0.1 | 24.4 | 24.4 | 32.6 | VT DEC |
| VTDEC Sta50 | net | 10/14/11 | 1 | 1 | 69.3 | | 0.4 | 0.3 | 1.0 | 0.1 | 74.3 | 72.7 | 145.4 | VT DEC |
| VTDEC Sta51 | net | 10/14/11 | 1 | 1 | 172.0 | | 0.3 | 0.8 | | | 171.1 | 170.7 | 344.2 | VT DEC |
| VTDEC Sta25 | net | 10/18/11 | 1 | 1 | 103.5 | 1.7 | 5.0 | | | | 15.0 | 15.0 | 125.2 | VT DEC |
| VTDEC Sta02 | net | 10/19/11 | 1 | 1 | 2.3 | 0.0 | 0.4 | | 0.0 | 0.0 | 0.1 | | 2.9 | VT DEC |
| VTDEC Sta04 | net | 10/19/11 | 1 | 1 | 1033.4 | 74.9 | | | 1.5 | | 74.9 | 74.9 | 1184.6 | VT DEC |
| Rte 78 Access | net | 10/31/11 | 1 | 1 | 3.6 | | 0.7 | 0.7 | 0.7 | | 13.9 | 13.9 | 19.6 | UVM |
| Rte 78 Access | net | 10/31/11 | 2 | 1 | 6.5 | | 0.6 | 2.6 | 0.5 | | 19.6 | 19.6 | 29.9 | UVM |
| Alburgh | net | 10/31/11 | 1 | 1 | 6.1 | | 0.2 | 0.3 | 0.3 | | 18.4 | 18.4 | 25.4 | UVM |
| Alburgh | net | 10/31/11 | 2 | 1 | 2.6 | | 0.1 | 0.4 | 0.2 | | 19.0 | 19.0 | 22.4 | UVM |
| Highgate Cliffs | net | 10/31/11 | 1 | 1 | 2.8 | | 0.8 | 0.1 | 0.1 | | 28.7 | 28.7 | 32.4 | UVM |
| Highgate | net | 10/31/11 | 2 | 1 | 2.8 | | 0.8 | 0.5 | 0.1 | | 8.5 | 8.5 | 12.6 | UVM |

| | | | | | | | | | | | | | | |
|------------------------|-----|----------|---|---|------|-----|-----|-----|-----|--|------|------|------|-----|
| Cliffs | | | | | | | | | | | | | | |
| Highgate Springs | net | 10/31/11 | 1 | 1 | 2.7 | | 0.4 | | 0.0 | | 23.6 | 23.6 | 26.8 | UVM |
| Highgate Springs | net | 10/31/11 | 2 | 1 | 2.3 | | 0.3 | 0.2 | 0.1 | | 3.0 | 3.0 | 5.8 | UVM |
| St. Albans Boat Launch | net | 10/31/11 | 1 | 1 | 12.1 | 3.2 | 0.1 | 0.1 | 0.4 | | 8.3 | 8.3 | 24.1 | UVM |
| St. Albans Boat Launch | net | 10/31/11 | 2 | 1 | 8.8 | | 0.1 | | 0.2 | | | | 9.1 | UVM |

Appendix C. Results of Toxin Analyses – Data Summary 2011

| Collection Date | Sample Location | Rep | Sample Type | Microcystin by ELISA (analyzed by UVM) | Anatoxin-a by HPLC (analyzed by VDH) | | |
|-----------------|---|-----|-------------|--|--------------------------------------|--------------------------|----------------|
| | | | | Toxin Conc In Lake Water (µg/L) | Less than Reportable Limit | Reportable Limit (ng/mL) | Report (ng/mL) |
| 07/05/11 | Highgate Cliffs | 1 | wwp | 1.66 | | | |
| 07/05/11 | Highgate Cliffs | 2 | wwp | 1.60 | | | |
| 06/27/11 | Mallets Bay-NW shore near Sandbar Motel | 1 | wwp | 0.04 | x | 0.025 | nondetected |
| 07/03/11 | Highgate Springs- Shipyard | 1 | wwp | 0.02 | x | 0.003 | nondetected |
| 07/05/11 | Larrabee's Point | 1 | wwp | 0.02 | x | 0.003 | nondetected |
| 07/12/11 | Highgate Cliffs | 1 | wwp | 0.69 | x | 0.002 | nondetected |
| 07/12/11 | Highgate Cliffs | 2 | wwp | 0.81 | x | 0.002 | nondetected |
| 07/12/11 | Highgate Springs | 1 | wwp | 0.11 | x | 0.002 | nondetected |
| 07/12/11 | Highgate Springs | 2 | wwp | 0.03 | x | 0.001 | nondetected |
| 07/12/11 | St. Albans Boat Launch | 1 | wwp | 0.04 | x | 0.001 | nondetected |
| 07/12/11 | St. Albans Boat Launch | 2 | wwp | 0.03 | x | 0.001 | nondetected |
| 07/10/11 | Rock River Access | 1 | wwp | 0.04 | x | 0.003 | nondetected |
| 07/10/11 | High Rocks | 1 | wwp | 0.11 | x | 0.003 | nondetected |
| 07/13/11 | Melo Boat Slip | 1 | wwp | 0.02 | x | 0.005 | nondetected |
| 07/19/11 | Highgate Cliffs | 1 | wwp | 0.17 | x | 0.002 | nondetected |
| 07/19/11 | Highgate Cliffs | 2 | wwp | 0.39 | x | 0.002 | nondetected |
| 07/19/11 | Highgate Springs | 1 | wwp | 0.13 | x | 0.002 | nondetected |
| 07/19/11 | Highgate Springs | 2 | wwp | 0.15 | x | 0.002 | nondetected |
| 07/17/11 | Rock River Access | 1 | wwp | 0.06 | x | 0.002 | nondetected |
| 07/17/11 | High Rocks | 1 | wwp | 0.06 | x | 0.002 | nondetected |
| 07/26/11 | Alburg - Shore | 1 | wwp | 0.03 | | | |
| 07/26/11 | Alburg - Shore | 2 | wwp | 0.12 | | | |
| 07/19/11 | North Hero State Park | 1 | wwp | 0.01 | | | |
| 07/23/11 | Beggs Park | 1 | wwp | 0.01 | | 0.003 | 0.024 |
| 07/24/11 | Carry Bay | 1 | wwp | 0.09 | x | 0.003 | nondetected |
| 07/25/11 | St. Albans Bay Park | 1 | wwp | 0.14 | x | 0.003 | nondetected |
| 08/02/11 | Highgate Cliffs | 1 | wwp | 0.76 | x | 0.002 | nondetected |
| 08/02/11 | Highgate Cliffs | 2 | wwp | 0.98 | x | 0.002 | nondetected |
| 08/02/11 | St. Albans Boat Launch | 1 | wwp | 0.04 | x | 0.003 | nondetected |
| 08/02/11 | St. Albans Boat Launch | 2 | wwp | 0.02 | x | 0.003 | nondetected |
| 08/01/11 | Pelots Bay | 1 | wwp | 0.02 | x | 0.003 | nondetected |
| 08/01/11 | High Rocks | 1 | wwp | 1.82 | x | 0.004 | nondetected |
| 08/01/11 | Rock River Access | 1 | wwp | 5.95 | x | 0.005 | nondetected |

| | | | | | | | |
|----------|----------------------------|---|-----|-------|---|-------|-------------|
| 08/01/11 | St. Albans Bay Park | 1 | wwp | 0.06 | x | 0.003 | nondetected |
| 08/09/11 | Rte 78 Access | 1 | wwp | 0.08 | x | 0.001 | nondetected |
| 08/09/11 | Rte 78 Access | 2 | wwp | 0.12 | x | 0.001 | nondetected |
| 08/09/11 | Highgate Cliffs | 1 | wwp | 3.42 | x | 0.002 | nondetected |
| 08/09/11 | Highgate Cliffs | 2 | wwp | 2.73 | x | 0.003 | nondetected |
| 08/09/11 | Highgate Springs | 1 | wwp | 8.06 | x | 0.050 | nondetected |
| 08/09/11 | Highgate Springs | 2 | wwp | 12.72 | x | 0.050 | nondetected |
| 08/09/11 | St. Albans Boat Launch | 1 | wwp | 0.04 | x | 0.003 | nondetected |
| 08/09/11 | St. Albans Boat Launch | 2 | wwp | 0.03 | x | 0.003 | nondetected |
| 08/08/11 | Pelots Bay | 1 | wwp | 0.04 | x | 0.003 | nondetected |
| 08/07/11 | Rock River Access | 1 | wwp | 0.03 | x | 0.003 | nondetected |
| 08/07/11 | High Rocks | 1 | wwp | 8.83 | x | 0.003 | nondetected |
| 08/07/11 | Highgate Springs- Shipyard | 0 | wwp | 4.01 | x | 0.003 | nondetected |
| 08/08/11 | St. Albans Bay Park | 1 | wwp | 0.02 | x | 0.003 | nondetected |
| 08/16/11 | Highgate Springs | 1 | wwp | 2.79 | x | 0.003 | nondetected |
| 08/16/11 | Highgate Springs | 2 | wwp | 3.72 | x | 0.005 | nondetected |
| 08/14/11 | North Hero State Park | 1 | wwp | 0.08 | x | 0.003 | nondetected |
| 08/23/11 | Rte 78 Access | 1 | wwp | 0.12 | x | 0.002 | nondetected |
| 08/23/11 | Rte 78 Access | 2 | wwp | 0.12 | x | 0.002 | nondetected |
| 08/23/11 | Highgate Cliffs | 1 | wwp | 0.66 | x | 0.003 | nondetected |
| 08/23/11 | Highgate Cliffs | 2 | wwp | 0.95 | x | 0.002 | nondetected |
| 08/23/11 | Highgate Springs | 1 | wwp | 2.27 | x | 0.003 | nondetected |
| 08/23/11 | Highgate Springs | 2 | wwp | 1.95 | x | 0.003 | nondetected |
| 08/18/11 | Donaldson Point | 1 | wwp | 0.14 | x | 0.013 | nondetected |
| 08/21/11 | St. Albans Bay Park | 1 | wwp | 0.11 | x | 0.005 | nondetected |
| 08/22/11 | North Beach | 1 | wwp | 0.03 | x | 0.003 | nondetected |
| 08/21/11 | Kingsland Bay Beach | 1 | wwp | 0.01 | x | 0.003 | nondetected |
| 08/21/11 | North Hero State Park | 1 | wwp | 0.06 | x | 0.003 | nondetected |
| 08/22/11 | Dunham Bay | 1 | wwp | 0.10 | x | 0.003 | present |
| 08/22/11 | High Rocks | 1 | wwp | 2.34 | x | 0.003 | nondetected |
| 08/30/11 | Alburg - Shore | 1 | wwp | 0.07 | x | 0.001 | nondetected |
| 08/30/11 | Alburg | 2 | wwp | 0.05 | x | 0.001 | nondetected |
| 08/29/11 | Red Rocks Beach | 1 | wwp | 0.01 | x | 0.003 | nondetected |
| 08/29/11 | North Beach | 1 | wwp | 0.01 | x | 0.003 | nondetected |
| 08/27/11 | Donaldson Point | 1 | wwp | 0.18 | x | 0.003 | nondetected |
| 08/29/11 | Pelots Bay | 1 | wwp | 0.11 | x | 0.003 | present |
| 08/29/11 | Point Au Roche State Park | 1 | wwp | 0.01 | x | 0.002 | nondetected |
| 09/06/11 | Alburg - Shore | 1 | wwp | 0.14 | x | 0.002 | nondetected |
| 09/06/11 | Alburg - Shore | 2 | wwp | 0.18 | x | 0.001 | nondetected |
| 09/06/11 | North Hero State Park | 1 | wwp | | x | 0.003 | nondetected |
| 09/20/11 | Alburg - Shore | 1 | wwp | 1.47 | x | 0.002 | nondetected |

| | | | | | | | |
|----------|----------------------------|---|-----|--------|---|-------|-------------|
| 09/20/11 | Alburg - Shore | 2 | wwp | 1.29 | x | 0.003 | nondetected |
| 09/20/11 | Highgate Cliffs | 1 | wwp | 0.42 | x | 0.001 | nondetected |
| 09/20/11 | Highgate Cliffs | 2 | wwp | 0.41 | x | 0.001 | nondetected |
| 09/20/11 | Highgate Springs | 1 | wwp | 4.71 | x | 0.002 | nondetected |
| 09/20/11 | Highgate Springs | 2 | wwp | 2.88 | x | 0.002 | nondetected |
| 09/18/11 | Highgate Springs- Shipyard | 1 | wwp | 4.91 | x | 0.003 | nondetected |
| 09/21/11 | Dunham Bay | 1 | wwp | 0.82 | x | 0.001 | nondetected |
| 09/27/11 | St. Albans Boat Launch | 1 | wwp | 0.05 | x | 0.001 | nondetected |
| 09/27/11 | St. Albans Boat Launch | 2 | wwp | 0.04 | x | 0.001 | nondetected |
| 09/25/11 | Highgate Springs- Shipyard | 1 | wwp | 180.82 | x | 0.005 | nondetected |
| 10/04/11 | Rte 78 Access | 1 | wwp | 1.55 | x | 0.002 | nondetected |
| 10/04/11 | Rte 78 Access | 2 | wwp | 0.98 | x | 0.002 | nondetected |
| 10/05/11 | Donaldson Point - ww grab | 1 | wwp | | x | 0.005 | nondetected |

Appendix D. Total Phosphorus and Total Nitrogen Data Summary 2011

| Date | Location | Rep | Time | TN (mg/L) | TP (µg/L) |
|-----------|---------------------------|-----|-------|--------------|--------------|
| 06-Jun-11 | North Beach shoreline | 1 | 10:50 | 0.52 | 21.78 |
| 06-Jun-11 | North Beach shoreline | 2 | 10:50 | 0.58 | 20.38 |
| 06-Jun-11 | Red Rocks Beach shoreline | 1 | 10:24 | 0.65 | 26.47 |
| 06-Jun-11 | Red Rocks Beach shoreline | 2 | 10:24 | 0.57 | 20.49 |
| 07-Jun-11 | Alburgh | 1 | 10:37 | 0.90 | 43.43 |
| 07-Jun-11 | Alburgh | 2 | 10:37 | 0.81 | 43.10 |
| 07-Jun-11 | Highgate Cliffs | 1 | 10:20 | 0.83 | 42.47 |
| 07-Jun-11 | Highgate Cliffs | 2 | 10:20 | 0.76 | 39.33 |
| 07-Jun-11 | Highgate Springs | 1 | 10:00 | 0.87 | 38.36 |
| 07-Jun-11 | Highgate Springs | 2 | 10:00 | 1.25 | 45.49 |
| 07-Jun-11 | Rock River Access | 1 | 10:05 | 0.98 | 68.29 |
| 07-Jun-11 | Rock River Access | 2 | 10:05 | 0.95 | 67.99 |
| 07-Jun-11 | Rte 78 Access | 1 | 10:45 | 0.72 | 40.35 |
| 07-Jun-11 | Rte 78 Access | 2 | 10:45 | 0.87 | 40.73 |
| 07-Jun-11 | St. Albans Boat Launch | 1 | 11:32 | 0.46 | 38.28 |
| 07-Jun-11 | St. Albans Boat Launch | 2 | 11:32 | 0.60 | 37.18 |
| 20-Jun-11 | North Beach shoreline | 1 | 10:22 | 0.60 | 24.21 |
| 20-Jun-11 | North Beach shoreline | 2 | 10:22 | 0.61 | 20.65 |
| 20-Jun-11 | Red Rocks Beach shoreline | 1 | 10:00 | 0.73 | 23.85 |
| 20-Jun-11 | Red Rocks Beach shoreline | 2 | 10:00 | 0.65 | 29.03 |
| 21-Jun-11 | Alburgh | 1 | 10:47 | 0.82 | 38.37 |
| 21-Jun-11 | Alburgh | 2 | 10:47 | 0.77 | 36.64 |
| 21-Jun-11 | Highgate Cliffs | 1 | 10:30 | 0.83 | 54.61 |
| 21-Jun-11 | Highgate Cliffs | 2 | 10:30 | 0.87 | 62.01 |

| | | | | | |
|-----------|---------------------------|---|-------|------|-------|
| 21-Jun-11 | Highgate Springs | 1 | 10:07 | 0.90 | 49.52 |
| 21-Jun-11 | Highgate Springs | 2 | 10:07 | 1.19 | 50.92 |
| 21-Jun-11 | Rock River Access | 1 | 10:20 | 0.87 | 73.88 |
| 21-Jun-11 | Rock River Access | 2 | 10:20 | 0.99 | 68.12 |
| 21-Jun-11 | Rte 78 Access | 1 | 11:00 | 0.77 | 42.37 |
| 21-Jun-11 | Rte 78 Access | 2 | 11:00 | 0.79 | 45.90 |
| 21-Jun-11 | St. Albans Boat Launch | 1 | 11:38 | 0.66 | 31.74 |
| 21-Jun-11 | St. Albans Boat Launch | 2 | 11:38 | 0.49 | 34.48 |
| 05-Jul-11 | Alburgh | 1 | 10:27 | 0.48 | 22.46 |
| 05-Jul-11 | Alburgh | 2 | 10:27 | 0.50 | 28.15 |
| 05-Jul-11 | Highgate Cliffs | 1 | 10:06 | 0.59 | 33.92 |
| 05-Jul-11 | Highgate Cliffs | 2 | 10:06 | 0.76 | 39.12 |
| 05-Jul-11 | Highgate Springs | 1 | 10:00 | 1.31 | 54.93 |
| 05-Jul-11 | Highgate Springs | 2 | 10:00 | 0.77 | 44.26 |
| 05-Jul-11 | North Beach shoreline | 1 | 12:50 | 0.47 | 43.78 |
| 05-Jul-11 | Red Rocks Beach shoreline | 1 | 12:40 | 0.54 | 37.45 |
| 05-Jul-11 | Rte 78 Access | 1 | 10:34 | 0.48 | 24.69 |
| 05-Jul-11 | Rte 78 Access | 2 | 10:34 | 0.59 | 23.06 |
| 05-Jul-11 | St. Albans Boat Launch | 1 | 11:30 | 0.80 | 31.17 |
| 05-Jul-11 | St. Albans Boat Launch | 2 | 11:30 | 0.33 | 35.16 |
| 11-Jul-11 | North Beach shoreline | 1 | 11:46 | 0.56 | 67.65 |
| 11-Jul-11 | Red Rocks Beach shoreline | 1 | 12:20 | 0.43 | 39.59 |
| 12-Jul-11 | Alburgh - Shore | 1 | 11:04 | 0.61 | 30.05 |
| 12-Jul-11 | Alburgh - Shore | 2 | 11:04 | 0.69 | 31.92 |
| 12-Jul-11 | Highgate Cliffs | 1 | 10:12 | 1.18 | 57.43 |
| 12-Jul-11 | Highgate Cliffs | 2 | 10:12 | 1.25 | 56.89 |
| 12-Jul-11 | Highgate Springs | 1 | 10:01 | 0.85 | 53.75 |

| | | | | | |
|-----------|---------------------------|---|-------|------|--------|
| 12-Jul-11 | Highgate Springs | 2 | 10:01 | 0.97 | 51.60 |
| 12-Jul-11 | Rte 78 Access | 1 | 10:40 | 0.57 | 28.32 |
| 12-Jul-11 | Rte 78 Access | 2 | 10:40 | 0.56 | 29.93 |
| 12-Jul-11 | St. Albans Boat Launch | 1 | 11:50 | 0.72 | 32.35 |
| 12-Jul-11 | St. Albans Boat Launch | 2 | 11:50 | 0.52 | 33.64 |
| 18-Jul-11 | North Beach shoreline | 1 | 12:00 | 0.42 | 75.36 |
| 18-Jul-11 | Red Rocks Beach shoreline | 1 | 12:15 | 0.39 | 54.86 |
| 19-Jul-11 | Alburgh | 1 | 10:20 | 0.49 | 33.02 |
| 19-Jul-11 | Alburgh | 2 | 10:20 | 0.47 | 40.99 |
| 19-Jul-11 | Highgate Cliffs | 1 | 10:05 | 0.71 | 65.71 |
| 19-Jul-11 | Highgate Cliffs | 2 | 10:05 | 0.79 | 61.82 |
| 19-Jul-11 | Highgate Springs | 1 | 10:00 | 0.69 | 46.67 |
| 19-Jul-11 | Highgate Springs | 2 | 10:00 | 0.91 | 47.30 |
| 19-Jul-11 | Rte 78 Access | 1 | 10:35 | 0.49 | 41.02 |
| 19-Jul-11 | Rte 78 Access | 2 | 10:35 | 0.41 | 48.13 |
| 19-Jul-11 | St. Albans Boat Launch | 1 | 11:25 | 0.28 | 30.25 |
| 19-Jul-11 | St. Albans Boat Launch | 2 | 11:25 | 0.36 | 31.10 |
| 25-Jul-11 | North Beach shoreline | 1 | 12:30 | 0.36 | 51.86 |
| 25-Jul-11 | Red Rocks Beach shoreline | 1 | 11:15 | 0.28 | 78.22 |
| 26-Jul-11 | Alburgh - Shore | 1 | 10:35 | 0.61 | 57.79 |
| 26-Jul-11 | Alburgh - Shore | 2 | 10:35 | 0.51 | 47.26 |
| 26-Jul-11 | Rte 78 Access- shore | 1 | 10:03 | 0.52 | 45.16 |
| 26-Jul-11 | Rte 78 Access- shore | 2 | 10:03 | 0.45 | 44.30 |
| 26-Jul-11 | St. Albans Boat Launch | 1 | 11:25 | 0.36 | 38.96 |
| 26-Jul-11 | St. Albans Boat Launch | 2 | 11:25 | 0.37 | 41.57 |
| 01-Aug-11 | North Beach shoreline | 1 | | 0.38 | 122.35 |
| 01-Aug-11 | Red Rocks Beach shoreline | 1 | 13:00 | 0.46 | 124.80 |

| | | | | | |
|-----------|---------------------------|---|-------|------|---------|
| 02-Aug-11 | Alburgh | 1 | 10:45 | 0.48 | 39.86 |
| 02-Aug-11 | Alburgh | 2 | 10:45 | 0.49 | 39.67 |
| 02-Aug-11 | Highgate Cliffs | 1 | 10:20 | 0.88 | 68.32 |
| 02-Aug-11 | Highgate Cliffs | 2 | 10:20 | 0.86 | 69.58 |
| 02-Aug-11 | Highgate Springs | 1 | 10:00 | 0.67 | 42.88 |
| 02-Aug-11 | Highgate Springs | 2 | 10:00 | 0.82 | 49.02 |
| 02-Aug-11 | Rte 78 Access | 1 | 10:55 | 0.51 | 51.70 |
| 02-Aug-11 | Rte 78 Access | 2 | 10:55 | 0.51 | 45.93 |
| 02-Aug-11 | St. Albans Boat Launch | 1 | 11:50 | 1.58 | 96.92 |
| 02-Aug-11 | St. Albans Boat Launch | 2 | 11:50 | 1.30 | 99.40 |
| 08-Aug-11 | North Beach shoreline | 1 | 13:30 | 0.40 | 29.33 |
| 08-Aug-11 | Red Rocks Beach shoreline | 1 | 12:00 | 0.37 | 19.32 |
| 09-Aug-11 | Alburgh | 1 | 10:28 | 0.60 | 48.34 |
| 09-Aug-11 | Alburgh | 2 | 10:28 | 0.59 | 48.32 |
| 09-Aug-11 | Highgate Cliffs | 1 | 10:08 | 1.37 | 96.11 |
| 09-Aug-11 | Highgate Cliffs | 2 | 10:08 | 1.35 | 86.90 |
| 09-Aug-11 | Highgate Springs | 1 | 10:00 | 6.43 | 1304.04 |
| 09-Aug-11 | Highgate Springs | 2 | 10:00 | 6.38 | 1168.65 |
| 09-Aug-11 | Rte 78 Access | 1 | 10:40 | 0.85 | 58.79 |
| 09-Aug-11 | Rte 78 Access | 2 | 10:00 | 0.72 | 59.02 |
| 09-Aug-11 | St. Albans Boat Launch | 1 | 11:37 | 0.87 | 60.52 |
| 09-Aug-11 | St. Albans Boat Launch | 2 | 11:37 | 1.07 | 55.93 |
| 15-Aug-11 | North Beach shoreline | 1 | 12:00 | 0.27 | 17.72 |
| 15-Aug-11 | Red Rocks Beach shoreline | 1 | 12:30 | 0.26 | 18.77 |
| 16-Aug-11 | Alburgh | 1 | 10:28 | 0.54 | 52.34 |
| 16-Aug-11 | Alburgh | 2 | 10:28 | 0.49 | 52.55 |
| 16-Aug-11 | Highgate Cliffs | 1 | 10:10 | 1.12 | 87.80 |

| | | | | | |
|-----------|---------------------------|---|-------|------|--------|
| 16-Aug-11 | Highgate Cliffs | 2 | 10:10 | 1.15 | 92.69 |
| 16-Aug-11 | Highgate Springs | 1 | 10:00 | 1.54 | 115.48 |
| 16-Aug-11 | Highgate Springs | 2 | 10:00 | 1.53 | 109.19 |
| 16-Aug-11 | Rte 78 Access | 1 | 10:40 | 0.56 | 54.40 |
| 16-Aug-11 | Rte 78 Access | 2 | 10:40 | 0.51 | 51.56 |
| 16-Aug-11 | St. Albans Boat Launch | 1 | 11:34 | 1.36 | 108.95 |
| 16-Aug-11 | St. Albans Boat Launch | 2 | 11:35 | 0.79 | 81.05 |
| 22-Aug-11 | North Beach | 1 | 11:00 | 0.34 | 39.32 |
| 22-Aug-11 | Red Rocks Beach shoreline | 1 | 13:30 | 0.27 | 18.52 |
| 23-Aug-11 | Alburgh | 1 | 10:43 | 0.52 | 50.81 |
| 23-Aug-11 | Alburgh | 2 | 10:43 | 0.57 | 51.25 |
| 23-Aug-11 | Highgate Cliffs | 1 | 10:23 | 0.82 | 76.25 |
| 23-Aug-11 | Highgate Cliffs | 2 | 10:23 | 0.76 | 71.72 |
| 23-Aug-11 | Highgate Springs | 1 | 10:00 | 0.97 | 90.02 |
| 23-Aug-11 | Highgate Springs | 2 | 10:00 | 1.16 | 108.38 |
| 23-Aug-11 | Rte 78 Access | 1 | 10:55 | 0.55 | 49.79 |
| 23-Aug-11 | Rte 78 Access | 2 | 10:55 | 0.62 | 50.96 |
| 23-Aug-11 | St. Albans Boat Launch | 1 | 11:47 | 0.48 | 37.16 |
| 23-Aug-11 | St. Albans Boat Launch | 2 | 11:47 | 0.47 | 40.15 |
| 29-Aug-11 | North Beach shoreline | 1 | 13:30 | 0.44 | 26.36 |
| 29-Aug-11 | Red Rocks Beach shoreline | 1 | 13:30 | 0.35 | 21.63 |
| 30-Aug-11 | Alburgh - Shore | 1 | 10:43 | 0.82 | 85.90 |
| 30-Aug-11 | Alburgh - Shore | 2 | 10:43 | 0.60 | 99.15 |
| 30-Aug-11 | Rte 78 Access | 1 | 10:30 | 0.53 | 75.43 |
| 30-Aug-11 | Rte 78 Access | 2 | 10:30 | 0.66 | 77.54 |
| 30-Aug-11 | St. Albans Boat Launch | 1 | 11:28 | 0.44 | 38.81 |
| 30-Aug-11 | St. Albans Boat Launch | 2 | 11:28 | 0.44 | 49.05 |

| | | | | | |
|-----------|---------------------------|---|-------|------|--------|
| 06-Sep-11 | Alburgh - Shore | 1 | 10:05 | 0.64 | 76.53 |
| 06-Sep-11 | Alburgh - Shore | 2 | 10:05 | 1.01 | 80.09 |
| 06-Sep-11 | North Beach shoreline | 1 | | 0.47 | 36.34 |
| 06-Sep-11 | Red Rocks Beach shoreline | 1 | 12:30 | 0.55 | 29.79 |
| 06-Sep-11 | Rte 78 Access- shore | 1 | 9:52 | 1.04 | 97.84 |
| 06-Sep-11 | Rte 78 Access- shore | 2 | 9:52 | 0.97 | 89.12 |
| 06-Sep-11 | St. Albans Boat Launch | 1 | 10:55 | 0.45 | 28.68 |
| 06-Sep-11 | St. Albans Boat Launch | 2 | 10:55 | 0.38 | 36.28 |
| 13-Sep-11 | Alburgh | 1 | 9:55 | 1.09 | 67.42 |
| 13-Sep-11 | Alburgh | 2 | 9:55 | 1.01 | 71.93 |
| 13-Sep-11 | Rte 78 Access | 1 | 10:05 | 1.02 | 77.24 |
| 13-Sep-11 | St. Albans Boat Launch | 1 | 11:30 | 1.08 | 49.72 |
| 13-Sep-11 | St. Albans Boat Launch | 2 | | 0.70 | 43.55 |
| 20-Sep-11 | Alburgh - Shore | 1 | 10:50 | 1.11 | 124.74 |
| 20-Sep-11 | Alburgh - Shore | 2 | 10:50 | 1.09 | 146.90 |
| 20-Sep-11 | Highgate Cliffs | 1 | 9:55 | 0.83 | 61.88 |
| 20-Sep-11 | Highgate Cliffs | 2 | 9:55 | 0.75 | 59.46 |
| 20-Sep-11 | Highgate Springs | 1 | 10:05 | 1.13 | 97.82 |
| 20-Sep-11 | Highgate Springs | 2 | 10:05 | 1.10 | 120.38 |
| 20-Sep-11 | Rte 78 Access- shore | 1 | 10:35 | 0.80 | 78.48 |
| 20-Sep-11 | Rte 78 Access- shore | 2 | 10:35 | 0.78 | 76.72 |
| 20-Sep-11 | St. Albans Boat Launch | 1 | 11:40 | 0.39 | 34.35 |
| 20-Sep-11 | St. Albans Boat Launch | 2 | 11:40 | 0.38 | 34.09 |
| 27-Sep-11 | Alburgh | 1 | 10:30 | 4.01 | 567.19 |
| 27-Sep-11 | Alburgh | 2 | 10:30 | 2.60 | 384.29 |
| 27-Sep-11 | Highgate Cliffs | 1 | 10:12 | 0.84 | 59.20 |
| 27-Sep-11 | Highgate Cliffs | 2 | 10:12 | 1.00 | 64.34 |

| | | | | | |
|-----------|------------------------|---|-------|------|--------|
| 27-Sep-11 | Highgate Springs | 1 | 10:00 | 3.99 | 512.05 |
| 27-Sep-11 | Highgate Springs | 2 | 10:00 | 2.03 | 143.36 |
| 27-Sep-11 | Rte 78 Access | 1 | 10:41 | 0.68 | 63.51 |
| 27-Sep-11 | Rte 78 Access | 2 | 10:41 | 0.65 | 52.39 |
| 27-Sep-11 | St. Albans Boat Launch | 1 | 11:40 | 0.49 | 42.26 |
| 27-Sep-11 | St. Albans Boat Launch | 2 | 11:40 | 0.52 | 49.19 |
| 04-Oct-11 | Alburgh | 1 | 10:17 | 0.76 | 61.97 |
| 04-Oct-11 | Alburgh | 2 | 10:17 | 0.85 | 66.35 |
| 04-Oct-11 | Highgate Cliffs | 1 | 10:47 | 1.11 | 86.63 |
| 04-Oct-11 | Highgate Cliffs | 2 | 10:47 | 0.87 | 81.74 |
| 04-Oct-11 | Highgate Springs | 1 | 10:55 | 1.17 | 86.90 |
| 04-Oct-11 | Highgate Springs | 2 | 10:55 | 0.82 | 75.33 |
| 04-Oct-11 | Rte 78 Access | 1 | 10:25 | 0.83 | 81.51 |
| 04-Oct-11 | Rte 78 Access | 2 | 10:25 | 0.98 | 90.94 |
| 04-Oct-11 | St. Albans Boat Launch | 1 | 12:08 | 0.48 | 33.28 |
| 04-Oct-11 | St. Albans Boat Launch | 2 | 12:08 | 0.48 | 28.65 |
| 11-Oct-11 | Alburgh | 1 | 10:23 | 0.65 | 49.28 |
| 11-Oct-11 | Alburgh | 2 | 10:23 | 0.58 | 50.98 |
| 11-Oct-11 | Highgate Cliffs | 1 | 10:12 | 0.80 | 74.46 |
| 11-Oct-11 | Highgate Cliffs | 2 | 10:12 | 0.93 | 73.09 |
| 11-Oct-11 | Highgate Springs | 1 | 10:00 | 0.96 | 62.99 |
| 11-Oct-11 | Highgate Springs | 2 | 10:00 | 1.03 | 69.64 |
| 11-Oct-11 | Rte 78 Access | 1 | 10:38 | 0.78 | 100.45 |
| 11-Oct-11 | Rte 78 Access | 2 | 10:38 | 0.88 | 91.40 |
| 11-Oct-11 | St. Albans Boat Launch | 1 | 11:26 | 0.40 | 40.37 |
| 11-Oct-11 | St. Albans Boat Launch | 2 | 11:26 | 0.50 | 44.06 |
| 18-Oct-11 | Alburgh | 1 | 10:40 | 0.88 | 60.18 |

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|-----------|------------------------|---|-------|------|-------|
| 18-Oct-11 | Alburgh | 2 | 10:40 | 0.82 | 61.27 |
| 18-Oct-11 | Highgate Cliffs | 1 | 10:20 | 0.73 | 46.65 |
| 18-Oct-11 | Highgate Cliffs | 2 | 10:20 | 0.82 | 52.01 |
| 18-Oct-11 | Highgate Springs | 1 | 10:00 | 0.90 | 50.44 |
| 18-Oct-11 | Highgate Springs | 2 | 10:00 | 0.77 | 50.24 |
| 18-Oct-11 | Rte 78 Access | 1 | 10:55 | 0.67 | 63.08 |
| 18-Oct-11 | Rte 78 Access | 2 | 10:55 | 0.75 | 58.34 |
| 18-Oct-11 | St. Albans Boat Launch | 1 | 11:25 | 0.40 | 46.02 |
| 18-Oct-11 | St. Albans Boat Launch | 2 | 11:25 | 0.58 | 50.04 |
| 31-Oct-11 | Alburgh | 1 | 10:50 | 0.68 | 59.26 |
| 31-Oct-11 | Alburgh | 2 | 10:50 | 0.69 | 56.29 |
| 31-Oct-11 | Highgate Cliffs | 1 | 10:31 | 0.59 | 48.13 |
| 31-Oct-11 | Highgate Cliffs | 2 | 10:31 | 0.58 | 46.48 |
| 31-Oct-11 | Highgate Springs | 1 | 10:18 | 0.68 | 59.71 |
| 31-Oct-11 | Highgate Springs | 2 | 10:18 | 0.66 | 56.83 |
| 31-Oct-11 | Rte 78 Access | 1 | 11:03 | 0.68 | 55.77 |
| 31-Oct-11 | Rte 78 Access | 2 | 11:03 | 0.63 | 55.19 |
| 31-Oct-11 | St. Albans Boat Launch | 1 | 11:57 | 0.39 | 29.13 |
| 31-Oct-11 | St. Albans Boat Launch | 2 | 11:57 | 0.33 | 29.47 |

Appendix E. Partnerships 2011

Key Partners in Implementing Monitoring Program

Lake Champlain Basin Program
Lake Champlain Committee
Missisquoi National Wildlife Refuge
Vermont DEC
Vermont Department of Health

Recipients of Weekly Alerts

Association of Water Suppliers
Clinton County Public Health
Lake Champlain Basin Program
Lake Champlain Committee
Ministry of Sustainable Development, Environment and Parks
Missisquoi National Wildlife Refuge
New York DEC
New York Department of Health
Panton Water District
Quebec Municipalities
SUNY ESF
SUNY Plattsburgh
Vermont DEC
Vermont Department of Health
Water Treatment Plant Operators