



Citizen Monitoring of Blue-green algae blooms on Lake Champlain

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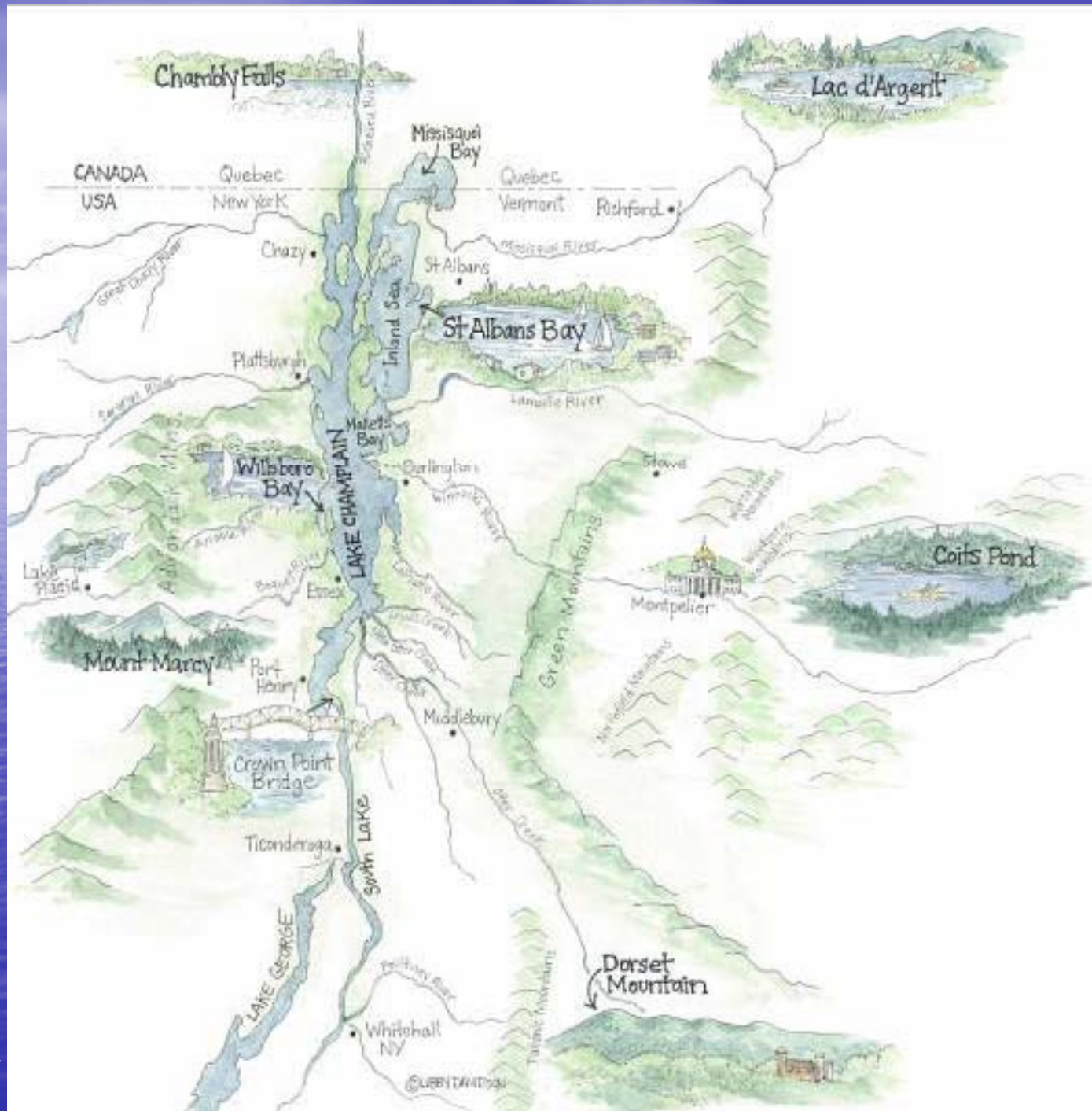
Lake Champlain Committee



January 13, 2009

Regional Cyanobacteria Workshop





January



Toxic Algae on Lake Champlain

- 1999 dog deaths in Burlington area and Pt. Au Roche S.P. in NY
- 2000 toxin monitoring begins
- 2003 Volunteer monitoring begins – Missisquoi Bay
- 2005 Volunteer monitoring expands





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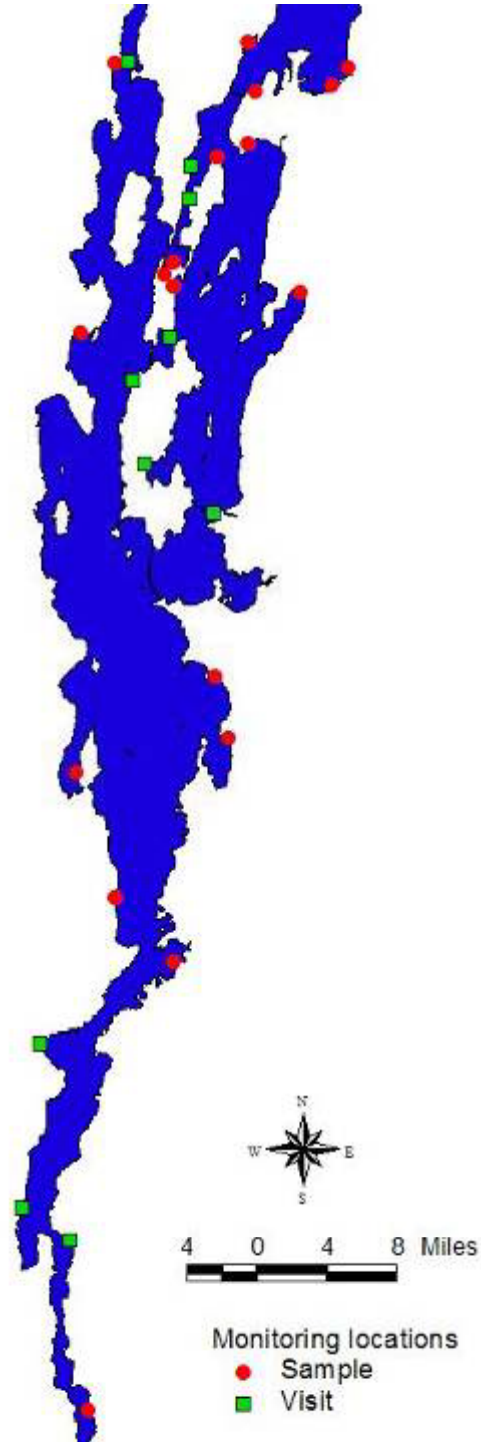
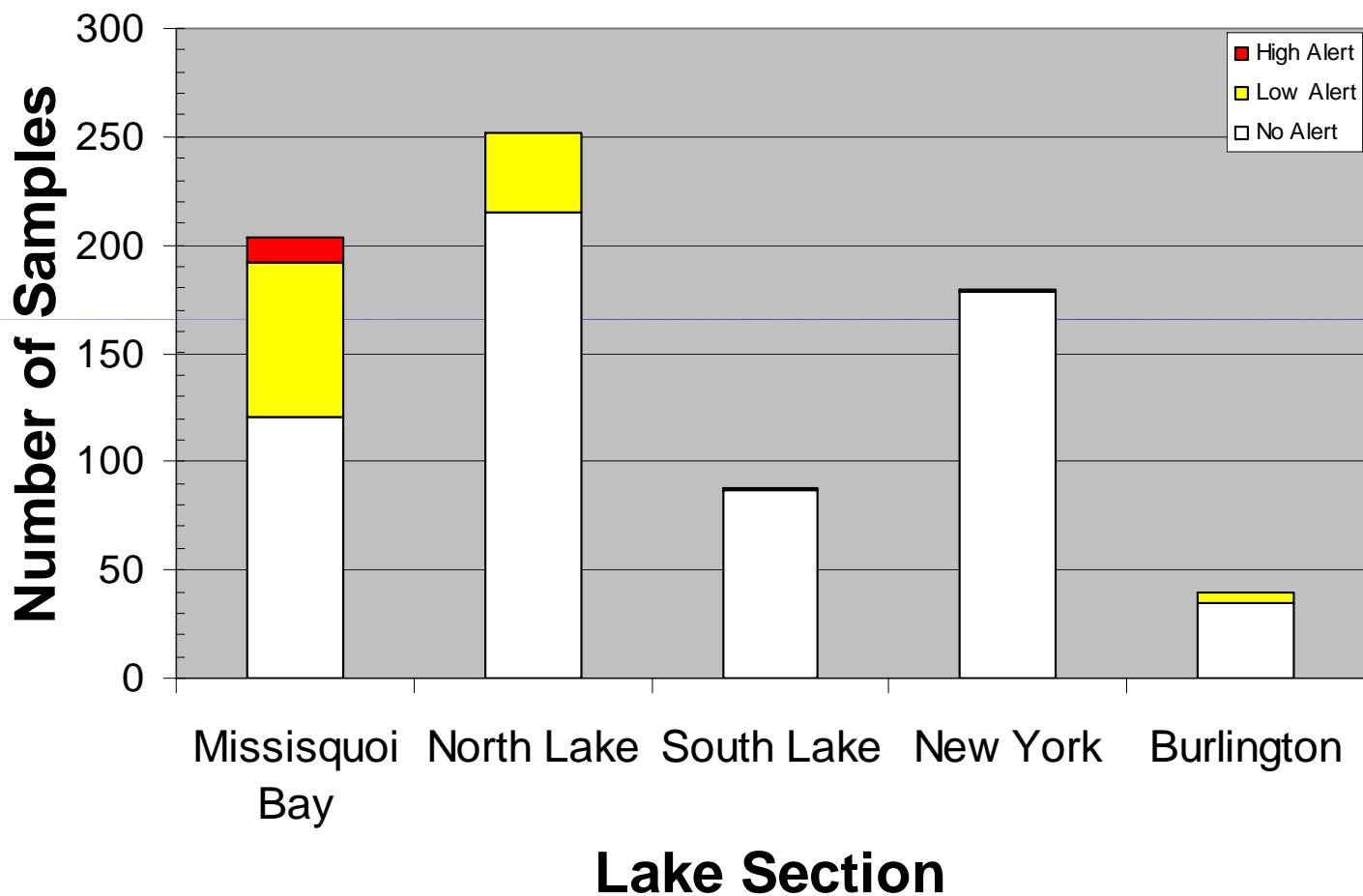


Table x: Alert levels at volunteer citizen monitoring sites during the summers of 2009. Low alert levels are triggered when more than 4,000 potentially toxic algae cells per L are found. High alert levels are triggered when actual toxin levels exceed six micrograms per L. NA = sample data not available or sample not taken.

<i>Site</i>	<i>Lake Region</i>	<i>6-Jul</i>	<i>13-Jul</i>	<i>20-Jul</i>	<i>27-Jul</i>	<i>3-Aug</i>	<i>10-Aug</i>	<i>17-Aug</i>	<i>24-Aug</i>	<i>31-Aug</i>	<i>7-Sept</i>
Thompson Point	South	none	none	none	none	none	none	none	none	none	none
Larrabee Point	South	none	none	none	none	none	none	none	none	none	none
Beggs Park, Essex	New York	none	none	none	none	none	none	none	none	none	none
Willsboro	New York	none	none	none	none	none	NA	none	none	none	none
Point Au Roche	New York	none	none	none	none	none	none	none	none	NA	NA
Rouses Point	New York	none	none	none	none	none	none	none	none	none	none
St. Albans Bay Park	North	none	none	none	none	low	none	low	none	none	NA
Maquam Bay	North	none	none	none	none	none	none	none	none	none	none
Carry Bay	North	none	none	none	none	none	none	none	none	none	none
Pelots Bay	North	none	none	none	none	none	none	NA	none	none	none
N. Hero State Park	North	none	none	none	none	none	none	none	none	none	none
City Bay	North	none	none	none	none	none	none	none	none	none	none
Chapman Bay	Missisquoi Bay	none	none	none	low	none	none	none	none	none	none
Donaldson Point	Missisquoi Bay	none	none	none	none	low	none	low	none	none	NA
Shipyard	Missisquoi Bay	none	none	none	low	none	none	low	low	none	low
High Rocks	Missisquoi Bay	none	high	high	none	low	none	low	low	low	none
Rock R. Boat Launch	Missisquoi Bay	none	none	high	none	none	low	low	none	none	none
Red Rocks	Burlington	none	low	none	none	low	none	none	low	none	none
North Beach	Burlington	none	none	none	none	none	none	low	none	none	none



Alerts from volunteer algae monitoring on Lake Champlain 2005-09. Low alert levels are triggered when more than 4,000 potentially toxic algae cells per L are found. High alert levels are triggered when actual toxin levels exceed six micrograms per L.



Lessons Learned

- Volunteers can provide reliable information on lake conditions
- Bloom conditions and frequency vary throughout lake
- Program limitation is analytical
- Ideal volunteers – retired or able to incorporate into regular work routine





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<i>Chapman Bay</i>	2005-09	48	37	11	0	77%	23%	0%
<i>Comolli Camp</i>	2005-07	30	17	12	1	57%	40%	3%
<i>Donaldson Point</i>	2008-09	19	12	7	0	63%	37%	0%
<i>High Rocks</i>	2005-09	47	23	18	6	49%	38%	13%
<i>Rock R.</i>	2009	10	7	2	1	70%	20%	10%
<i>Shipyard</i>	2005-09	50	25	21	4	50%	42%	8%
North Lake		252	215	37	0	85%	15%	0%
<i>Carry Bay</i>	2005-09	48	45	3	0	94%	6%	0%
<i>Maquam Bay</i>	2005-09	46	45	1	0	98%	2%	0%
<i>N. Hero State Park</i>	2005-09	44	36	8	0	82%	18%	0%
<i>Pelots Bay</i>	2005-09	46	39	7	0	85%	15%	0%
<i>St. Albans Bay</i>	2006-09	38	20	18	0	53%	47%	0%
<i>City Bay</i>	2007-09	30	30	0	0	100%	0%	0%
South Lake		88	87	1	0	99%	1%	0%
<i>Button Bay</i>	2005	6	5	1	0	83%	17%	0%
<i>Littlefield Shore</i>	2005-08	36	36	0	0	100%	0%	0%
<i>Larrabee Point</i>	2009	10	10	0	0	100%	0%	0%
<i>Long Point</i>	2006-09	36	36	0	0	100%	0%	0%
New York		179	178	1	0	99%	1%	0%
<i>Montys Bay</i>	2005	7	7	0	0	100%	0%	0%
<i>Cumberland Bay</i>	2005-06	17	17	0	0	100%	0%	0%
<i>Point Au Roche</i>	2005-09	41	41	0	0	100%	0%	0%
<i>Rouses Point</i>	2006-09	38	38	0	0	100%	0%	0%
<i>Willsboro Bay</i>	2006-09	46	45	1	0	98%	2%	0%
<i>Essex - Beggs Park</i>	2007-09	30	30	0	0	100%	0%	0%
Burlington		40	35	5	0	88%	13%	0%
<i>Red Rocks</i>	2008-09	20	16	4	0	80%	20%	0%
<i>North Beach</i>	2008-09	20	19	1	0	95%	5%	0%

