

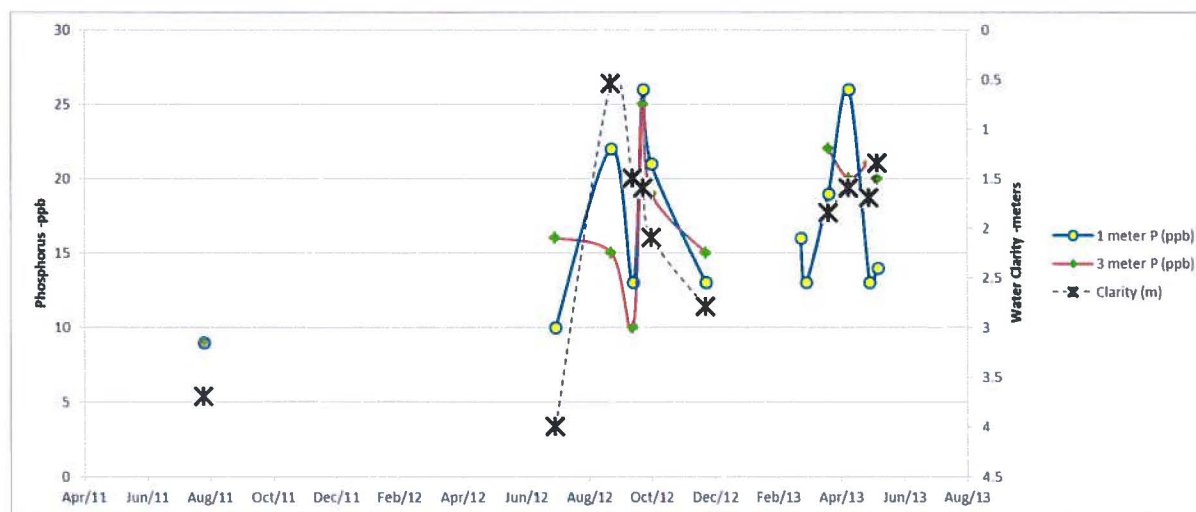
Lower Bolton Summary for early 2013

Inlet samples collected on February 25, and March 3rd.

Lower Bolton Lake has been visited 5 times this spring: March 27, April 16, May 6, May 14, and May 30, 2013

Graph below is read with solids lines on the left—phosphorus—and dashed line on the right—water clarity. The chart shows occurrence of very low clarity or bloom conditions during the period of late July and early August of 2012. Water clarity declined from about 4 meters to 0.5 meters in five weeks. The phosphorus concentration was low in July 2012—10 ppb—but increased to over 20 ppb in the surface water by August and .

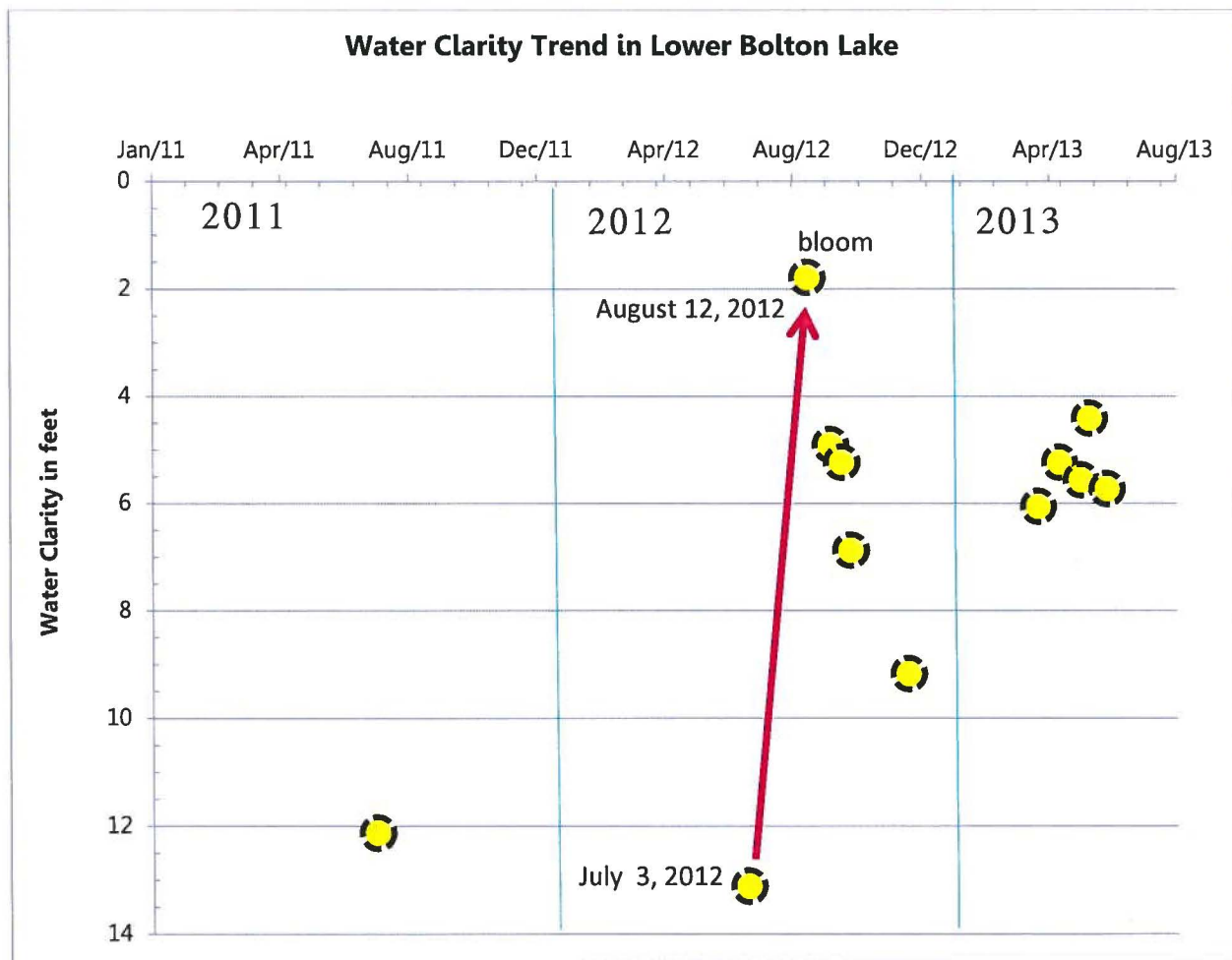
The most recent phosphorus numbers are encouraging, as the last two visits have shown the lake to have generally less than 15 ppb.



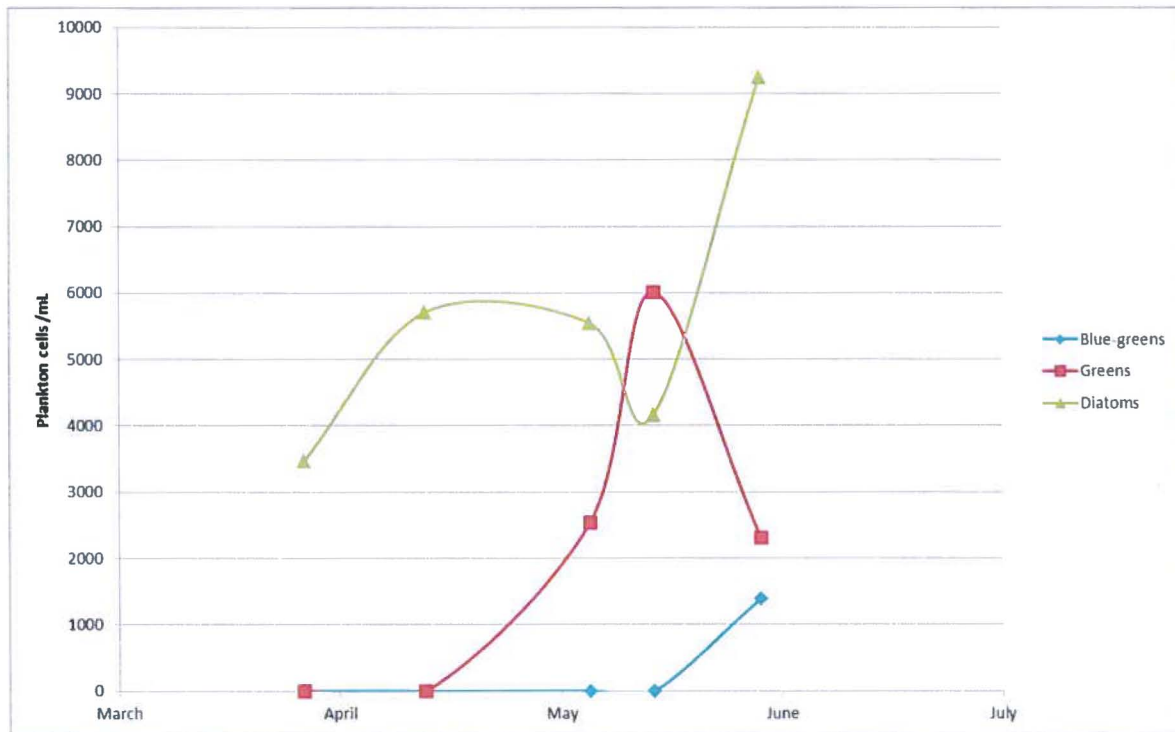
Phosphorus in outlet waters of Upper and Middle Bolton and surface water of Lower Bolton. Lower Bolton phosphorus has been consistently higher than Middle Bolton outlet to Lower Bolton.

	Upper Bolton	Middle Bolton	Lower Bolton (surface)
February 27		13	16
March 5	8	9	13
March 27		16	19
April 16	10	14	26
May 6		9	13
May 14			14

Water clarity in the lake was good in 2011 and early 2012—that is, with disk readings of 12 feet or better. During the worst of the bloom of 2012, the clarity was less than 2 feet. Clarity gradually got better during the fall last year however, never got better than 10 feet. Clarity during spring of 2013 has been consistently poor at about 5 feet, although, that murkiness has been due to abundant diatoms not blue-greens.



Graph below shows phytoplankton densities in Lower Bolton Lake during spring of 2013. Lake has been dominated by Diatoms since March, greens algae became numerous briefly in early May. Latest sample showed Diatoms still most abundant although bluegreens were present.



Nitrogen in Lower Bolton Lake has been limited to only organic forms. Trace amounts of ammonium were found in Lower Bolton but these values are barely above the detection limit and did not persist.

Lower Bolton Lake 2013 data from station 1 and station 2

Ammonia -N (ppb)										
Depth m						27-Mar	16-Apr	6-May	14-May	
1	< 10	11	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
3		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
5		< 10	< 10	13	< 10					
		11		13						
Nitrate/Nitrite -N (ppb)										
Depth m						27-Mar	16-Apr	6-May	14-May	
1	30	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
3		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
5		< 10	< 10	< 10	< 10					
Organic Nitrogen (ppb)										
Depth m						27-Mar	16-Apr	6-May	14-May	
1	436	1080	1010			475	560			
3		930	470			555	700			
5		1250	770							
		1087	750							
Total Nitrogen (ppb)										
Depth m	27-Jul	3-Jul	27-Aug	17-Sep	27-Sep	5-Oct	27-Mar	16-Apr	6-May	14-May
1	436		1080	1010			475	560		
3			930	470			555	700		
5			1250	770						
			1087	750						