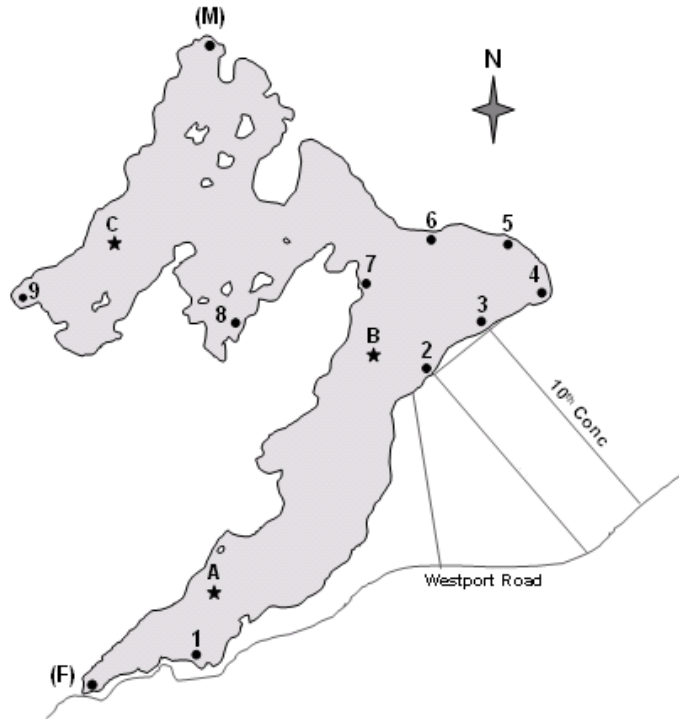


Water Quality 2013

Water Chemistry

Water quality was tested by the Water Quality Director on 6 occasions in 2013. Deep-water samples taken at sites B and C on May 27, June 23, July 29, August 26, September 23 and October 9 were analyzed for total phosphorus (TP) concentration through the Lake Partner Program (Ontario Ministry of the Environment). Deep and shallow-water samples were also taken at several sites by the Rideau Valley Conservation Authority (RVCA) on May 27, June 27, July 29, and October 9. These were analyzed for a number of variables including TP, calcium, total nitrogen, E. coli and dissolved oxygen concentration. The laboratory results from the Lake Partner Program are summarized in Table 1 and those from the RVCA in Table 2.



Sampling Sites for Water Testing in Wolfe Lake

(to reduce laboratory costs, samples are not taken at every site in any given year)

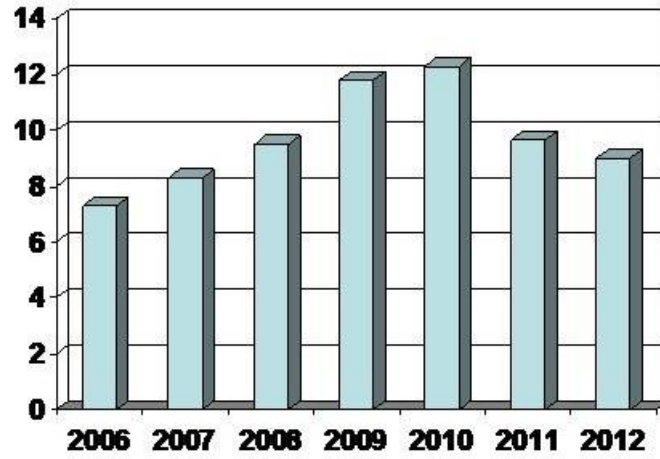
Table 1: TP Concentration, µg/L (Lake Partner Program Data)

Date	Site			
	B		C	
	Sample #1	Sample #2	Sample #1	Sample #2
May 27	7.0	8.0	6.6	6.8
June 23	10.8	11.2	10.8	10.4
July 29	9.8	9.0	9.8	9.6
August 26	8.4	8.6	10.8	11.0
September 23	9.6	4.4	10.2	11.0
October 9	8.6	8.0	9.0	11.0

Table 2: TP Concentration, µg/L (RVCA Data)

Date	Site					
	B	C	4	9	(F)	(M)
May 27	6	6				
June 27	16	36	28	63	12	43
July 29	13	10	10	12	13	11
October 9	8	12				

**Deep-Water Total Phosphorus Concentration, July
($\mu\text{g/L}$)**



Interpretation of Results

Total Phosphorus. Deep-water TP concentrations (Tables 1 and 2 and Figure 1) tended to be lower than those at similar sampling times for the past several years. As can be seen in Figure 1, the average July value of 9.0 µg/L reinforces last year's indication that the 5-year trend towards increasing phosphorus concentration seems to have ended. Shallow-water samples (Table 2) were similar to or slightly lower than in previous years with the exception of the August 12 result at site (M), which may have been a measurement error. Since much of our phosphorus enters the lake through streams and as rainwater runoff, last year's drier than normal summer may partially explain these encouraging results.

Additional chemical results. E. coli was measured at shallow water sites 4, 9, (M) and (F) on several occasions and all values were well within the safe limit. Total nitrogen results were similar to or slightly lower than those in previous years, indicating that nutrient enrichment had not increased. The deep-water dissolved calcium concentrations of 29.9 and 28.3 mg/L at sites B and C are unfortunately ideal for reproduction of zebra mussels, but there is little we can do about this.

Water Clarity

Secchi disc readings remained consistent and were over the 5 m standard for "excellent clarity". It has been noted before that in non-zebra mussel infested lakes, this measurement normally gives a good inverse correlation with TP concentrations (i.e., the greater the water clarity, the lower the TP). As noted in past years, the extreme water clarity is due, at least in part, to filtration by zebra mussels. As a result, Secchi disc readings can be misleading and therefore have not been included in this report.

Zebra Mussels

Again, as noted in past years, zebra mussel numbers seem to have remained no greater than in 2009. This ecological balance point occurs when they have filtered the water to the point that there is not enough plankton available to support further expansion in reproduction.