

GRENADIER POND (STN 7065, Site ID 3)

S end, deep spot

The Lake Partner Program is a province-wide, volunteer-based, water-quality monitoring program. Volunteers collect total phosphorus samples and make monthly water clarity observations on their lakes. This information will allow the early detection of changes in the nutrient status and/or the water clarity of the lake due to the impacts of shoreline development, climate change and other stresses.

Approximately 800 active volunteers monitor Secchi depth and total phosphorus at 728 locations in the lakes across Ontario.

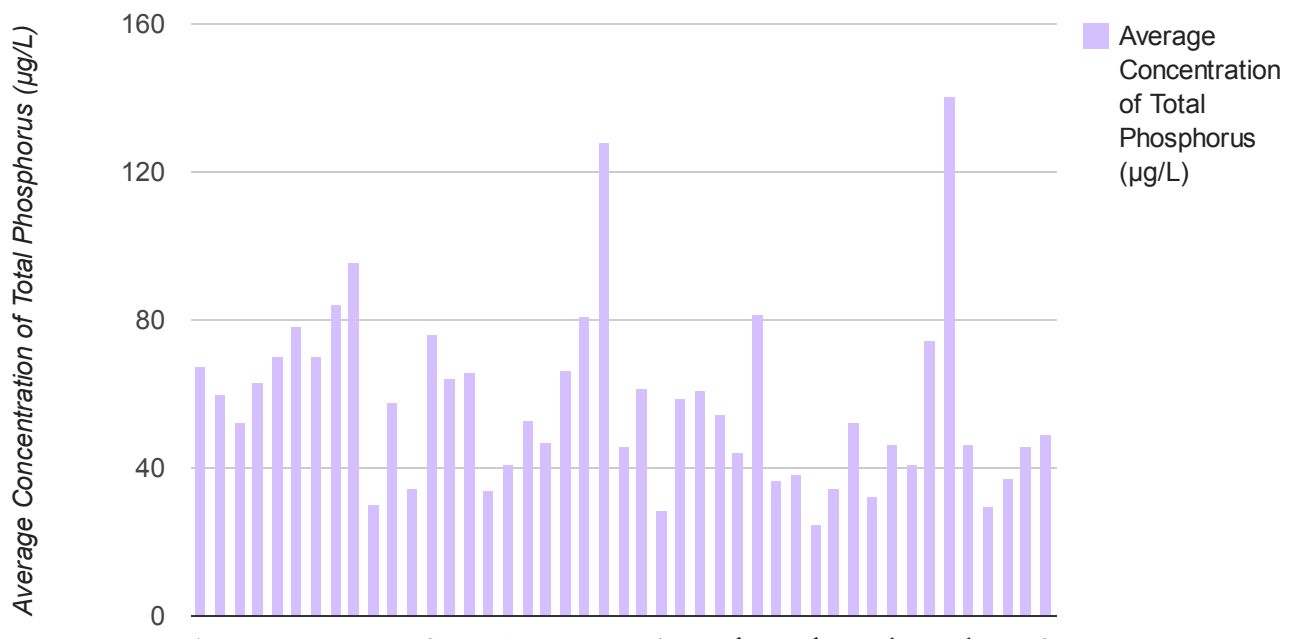
Total phosphorus concentration are ideally used to interpret nutrient status in Ontario lakes, since phosphorus is the element that controls the growth of algae in most Ontario lakes. Increases in phosphorus will decrease water clarity by stimulating algal growth. In extreme cases, algal blooms will affect the aesthetics of the lake and/or cause taste and odour problems in the water.

Many limnologists place lakes into three broad categories with respect to nutrient status. Lakes with less than $10 \mu\text{g/L}$ TP are considered oligotrophic. These are dilute, unproductive lakes that rarely experience nuisance algal blooms. Lakes with TP between 10 and $20 \mu\text{g/L}$ are termed mesotrophic and are in the middle with respect to trophic status. These lakes show a broad range of characteristics and can be clear and unproductive at the bottom end of the scale or susceptible to moderate algal blooms at concentration near $20 \mu\text{g/L}$. Lakes over $20 \mu\text{g/L}$ are classed as eutrophic and may exhibit persistent, nuisance algal blooms.

Note: Tea stained lakes, with high dissolved organic carbon (DOC), are called dystrophic lakes and do not share the algal/TP relationships described above. Generally there can be more TP in a dystrophic lake without the occurrence of algal blooms. The chemistry of these lakes is quite complex.

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Average Total Phosphorus (TP) Concentration ($\mu\text{g/L}$)



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Date	Sample 1 ($\mu\text{g/L}$)	Sample 2 ($\mu\text{g/L}$)	Average ($\mu\text{g/L}$)
2002-05-31	68.5	66.8	67.65
2002-06-27	60.4	60.1	60.25
2002-07-04	52.6	52.6	52.6
2002-09-06	61.9	64.6	63.25
2002-10-16	70.9	70	70.45
2003-06-21	77.5	79.4	78.45
2003-07-03	68.2	72.7	70.45
2003-08-04	77.6	91.2	84.4
2003-09-13	98.8	92.2	95.5
2004-05-12	28.6	31.8	30.2
2004-06-03	58.4	56.8	57.6
2004-07-15	36.9	32.6	34.75
2004-08-06	75.4	77	76.2
2004-09-23	64.3	64.3	64.3
2004-10-29	65.7	65.7	65.7
2005-05-25	34.4	33.4	33.9
2005-06-30	40	42.6	41.3
2005-08-24	52.4	53.2	52.8
2005-09-15	44	49.7	46.85
2006-06-26	62.6	70.7	66.65
2006-08-29	83.7	78.1	80.9
2006-10-30	130.9	125.8	128.35
2007-05-07	47.3	45	46.15
2007-06-25	54.9	68.7	61.8
2007-08-14	30.2	27.6	28.9
2007-09-29	61.9	56.4	59.15
2007-10-22	56.8	64.9	60.85
2008-06-17	51.2	58.4	54.8

2008-07-27	43.1	45.5	44.3
2008-10-09	80.9	82.5	81.7
2009-05-29	36.2	37.8	37
2009-07-10	40.4	36.3	38.35
2010-05-17	25.6	24.6	25.1
2010-07-27	34.6	35	34.8
2010-10-24	51.4	53.4	52.4
2011-05-21	33.8	31	32.4
2011-06-05	48.4	44.8	46.6
2011-07-20	41.2	41	41.1
2011-08-17	66	82.8	74.4
2011-10-07	133	148	140.5
2011-11-25	48.4	44.2	46.3
2012-05-24	30	30	30
2012-06-29	39	35.6	37.3
2012-07-28	46.6	44.8	45.7
2012-09-12	52	46.4	49.2

If you have some suggestions or find some errors, please send an Email to lakepartner@ontario.ca ([mailto:lakepartner@ontario.ca?subject=Portal Error Submission](mailto:lakepartner@ontario.ca?subject=Portal%20Error%20Submission)).