

North

Lake Overview

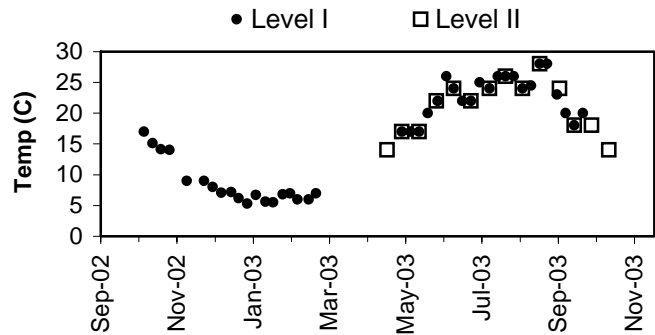
Volunteer monitoring began at North Lake in the early 1980s, was resumed in 1995 through 1998 after a hiatus and began again in 2001 through 2003. Collected data indicate this lake, partially in the city of Federal Way, is moderate in primary productivity (mesotrophic) with good water quality. Since the lake surface makes up 12% of the drainage area, direct precipitation is important, in addition to watershed inputs. Land use analysis of 2002 aerial photographs showed almost 53% of the surrounding watershed has been developed for uses other than agriculture. Most of the western shoreline is currently in open space.

North Lake has a public access boat launch and Eurasian milfoil has been identified in the lake. Residents should watch the nearshore environment for the spread of milfoil, as well as new infestations of Brazilian elodea or other noxious weeds.

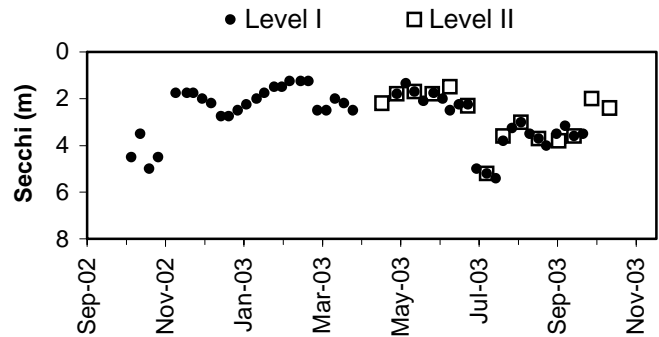
Physical Parameters

Secchi transparency ranged from 1.3 to 5.4m through the year. Annual water temperatures ranged from 5.3 to 28.0 degrees Celsius. Excellent precipitation and water records were kept for the year. Water levels followed a pronounced winter high - summer low pattern, consistent with other small lakes in the region.

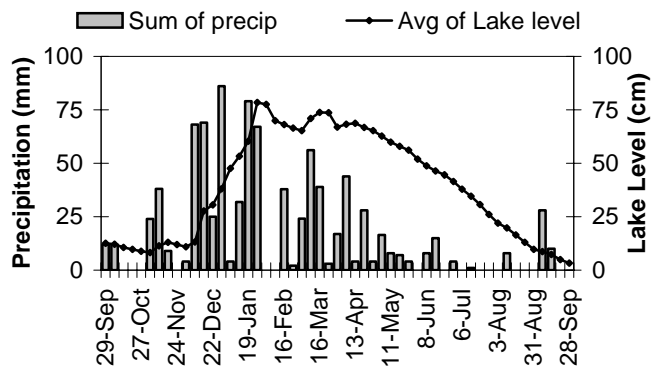
Lake Temperature



Secchi Depth

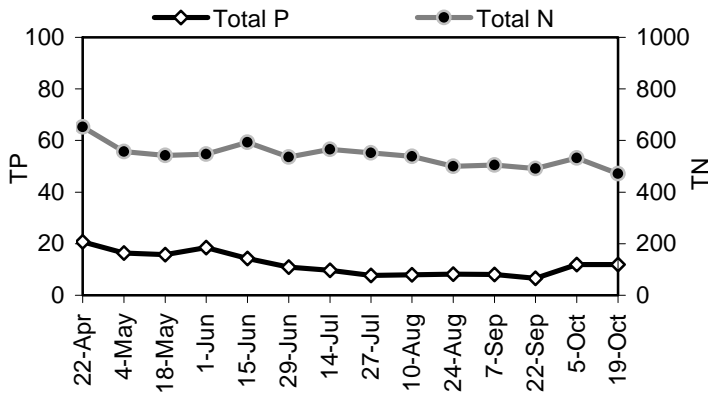


Lake Level and Precipitation

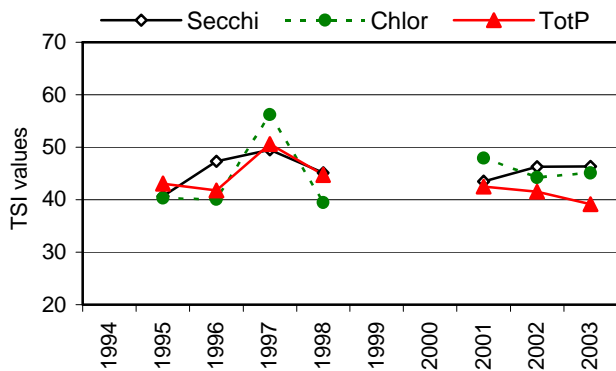


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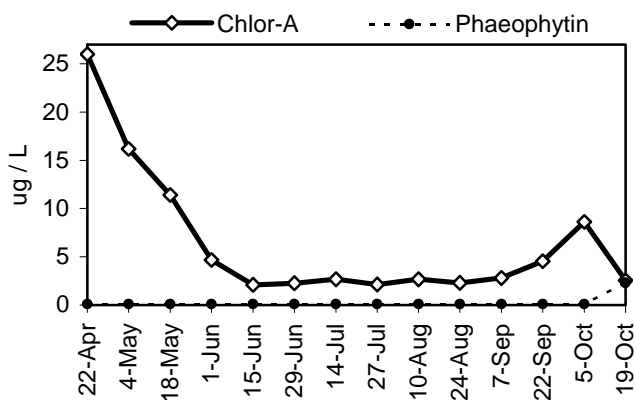
Nutrient Analysis



TSI Ratings



Chlorophyll a Concentrations (ug/L)



Common algae

Group

<i>Dinobryon sociale</i>	chrysophyte
unidentified species	chrysophyte
<i>Botryococcus braunii</i>	chlorophyte

Nutrient Analysis and TSI Ratings

Total phosphorus and total nitrogen remained in fairly constant proportion to each other through the sampling period, with the N:P ratio ranging from 30 to 74.

In 2003, the average TSI values were in the mid-range for mesotrophy, similar to recent years.

Chlorophyll and Algae

Chlorophyll was at its highest value on the first sample date of the season, declining to low values through the summer, reaching a smaller peak in early October. Both the spring bloom and the fall increase were dominated by a combination of the chrysophyte *Dinobryon* and another unidentified chrysophyte species. Other commonly occurring species included the large colonial chlorophyte *Botryococcus braunii* and several species of cryptomonads. Bluegreen algae were extremely rare.

North

2003 Level II Data

Date (2003)	Temp (°C)	Secchi (m)	Chl-a (µg/l)	TP (µg/l)	TN (µg/l)	Algae Obsv.	N:P	Calculated TSI			Notes
								Secc	chl-a	TP	
22-Apr	14.0	2.2	26.0	20.8	652	3	31	48.6	62.5	47.9	
4-May	17.0	1.8	16.2	16.4	557	2	34	51.5	57.9	44.5	
18-May	17.0	1.7	11.4	15.8	542	3	34	52.3	54.4	44.0	
1-Jun	22.0	1.8	4.7	18.5	547	2	30	51.5	45.6	46.2	
15-Jun	24.0	1.5	2.1	14.3	593	2	41	54.1	37.8	42.5	
29-Jun	22.0	2.3	2.3	10.9	535	2	49	48.0	38.6	38.6	
14-Jul	24.0		2.7	9.7	565	1	58		40.2	36.9	Secchi recorded as 5.2m. This is very unlikely.
27-Jul	26.0	3.6	2.1	7.7	551	1	72	41.5	38.0	33.6	
10-Aug	24.0	3.0	2.7	7.9	538	1	68	44.1	40.2	34.0	
24-Aug	28.0	3.7	2.3	8.2	499	0	61	41.1	38.7	34.5	Water appears very clear.
9-Sep	24.0	3.8	2.8	8.1	504	2	62	40.7	40.7	34.3	
21-Sep	18.0	3.6	4.5	6.6	491	2	74	41.5	45.3	31.4	
5-Oct	18.0	2.0	8.6	11.9	532		45	50.0	51.7	39.9	
19-Oct	14.0	2.4	2.5	11.9	471	1	40	47.4	39.7	39.9	
	Temp (°C)	Secchi (m)	Chl-a (µg/l)	TP (µg/l)	TN (µg/l)	Algae Obsv.	N:P	Calculated TSI			
								Secc	chl-a	TP	
Mean	20.9	2.6	6.5	12.1	541.2	1.7	50	47.1	45.1	39.2	TSI Average = 43.8
Median	22.0	2.3	2.7	11.4	540.0	2	47	48.0	40.4	39.2	
Min	14.0	1.5	2.1	6.6	471.0	0	30	40.7	37.8	31.4	
Max	28.0	3.8	26.0	20.8	652.0	3	74	54.1	62.5	47.9	
Count	14	13	14	14	14	13	14	13	14	14	