

Kathleen

Lake Overview

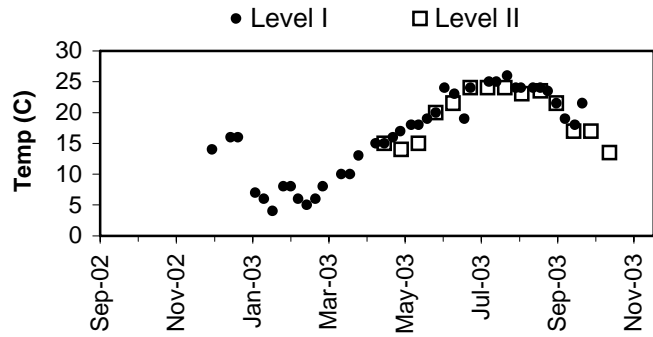
Volunteer monitoring began at Lake Kathleen in 1996 and continued through 2003. The data indicate that this lake is moderate in primary productivity (mesotrophic) with good quality. Since the lake surface makes up 12% of the drainage area, direct precipitation is less important than watershed inputs. Wetlands in the basin include a significant amount of the lake shoreline. Land use analysis of 2002 aerial photographs showed over 61% of the surrounding watershed has been developed for uses other than agriculture.

Lake Kathleen has no public boat launch, but residents should keep a watch on aquatic plants growing nearshore to catch early infestations of Eurasian milfoil, Brazilian elodea, or other noxious weeds.

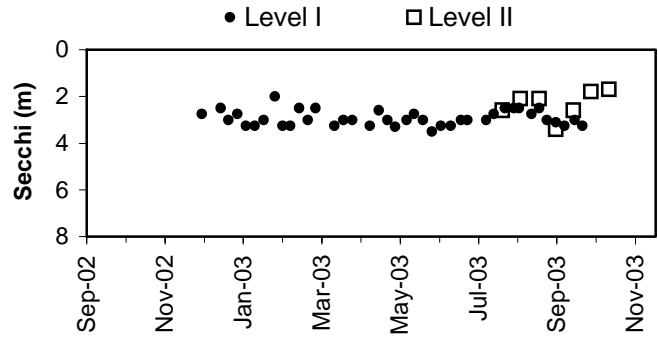
Physical Parameters

Secchi transparency measurements ranged between 1.6 and 3.5m through the year. Surface water temperature ranged between 4.0 and 26.0 degrees Celsius. Excellent precipitation and water level records were kept, showing decided responsiveness to rain events in winter. Water levels followed the regional pattern of winter high – autumn low stands.

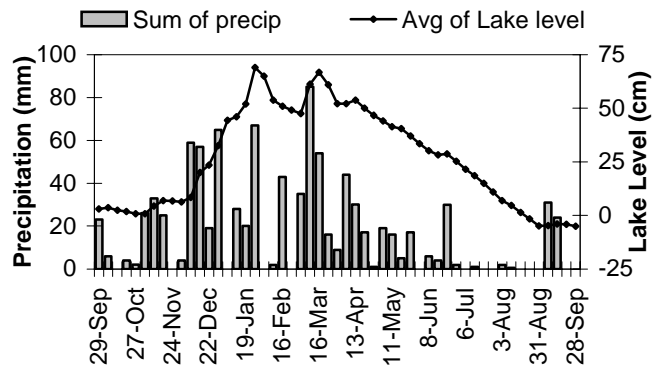
Lake Temperature



Secchi Depth

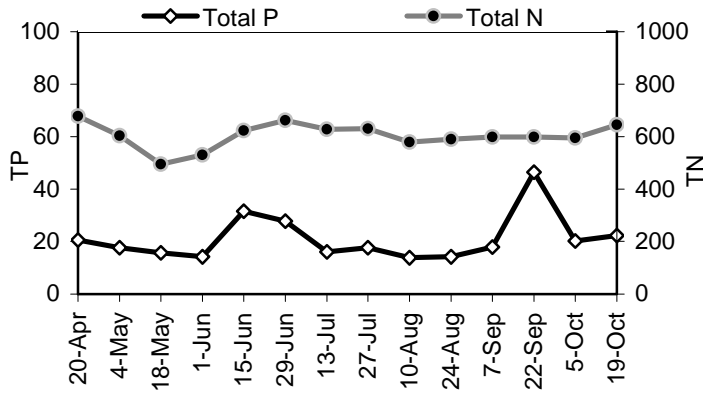


Lake Level and Precipitation

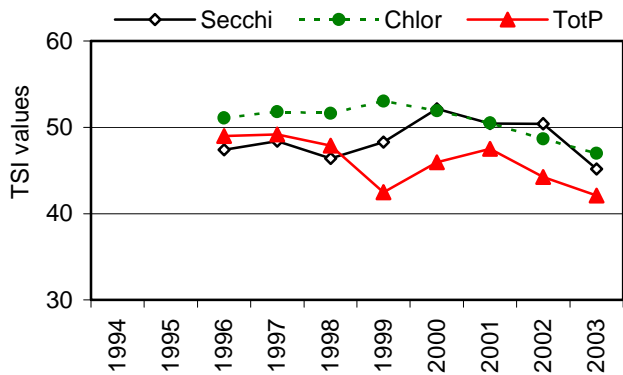


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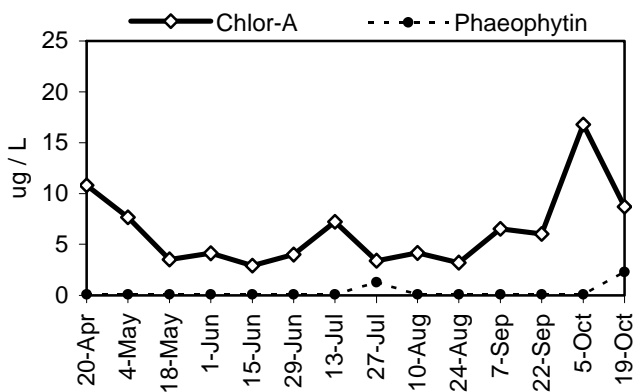
Nutrient Analysis



TSI Ratings



Chlorophyll a Concentrations (ug/L)



Nutrient Analysis and TSI Ratings

Total phosphorus and total nitrogen remained in fairly constant proportion to each other through the sampling period, with the exception of increased phosphorus values in June and one date in September. The N:P ratio ranged from 13 to 42, with the value of 13 occurring in September. The 2003 TSI-TotP value was lower than the other two, similar to the four previous years, but all three indicators were in the mesotrophic range.

Chlorophyll and Algae

Chlorophyll decreased in spring from a high value in April, remained more or less constant through summer and increased again in the autumn. Dominant algae in the phytoplankton included unidentified varieties of chrysophyte and other groups. Some other commonly appearing algae included *Cryptomonas*, *Botryococcus braunii*, and *Dinobryon* species. Bluegreen algae were very rare.

Common algae	Group
unidentified species	chrysophyte
unidentified colonial species	unidentified group
<i>Botryococcus braunii</i>	chlorophyte

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	
20-Apr	15.0	2.6	10.8	20.5	678	1	33	46.2	53.9	47.7	
4-May	14.0	2.1	7.7	17.6	604	1	34	49.3	50.6	45.5	
18-May	15.0	2.1	3.5	15.6	495	1	32	49.3	42.9	43.8	
1-Jun	20.0	3.4	4.1	14.2	531	1	37	42.3	44.5	42.4	
15-Jun	21.5	2.6	2.9	31.6	623	1	20	46.2	41.1	54.0	Algae colonies present near shore.
29-Jun	24.0	1.8	4.0	27.7	662	2	24	51.5	44.2	52.1	Algae present on lake bottom at dock.
13-Jul	24.0	1.7	7.2	16.0	628	1	39	52.3	49.9	44.1	
27-Jul	24.0	1.7	3.4	17.6	631	1	36	52.3	42.6	45.5	
10-Aug	23.0	1.6	4.2	13.8	579		42	53.2	44.6	42.0	
25-Aug	23.5	1.7	3.2	14.2	590	1	42	52.3	42.0	42.4	
7-Sep	21.5	3.1	6.5	17.8	599	1	34	43.7	49.0	45.7	
21-Sep	17.0	2.0	6.0	46.5	599	2	13	50.0	48.2	59.5	
5-Oct	17.0	2.3	16.8	20.2	595	2	29	48.0	58.2	47.5	
20-Oct	13.5	3.0	8.7	22.2	646	1	29	44.1	51.8	48.9	
	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	19.5	2.3	6.4	21.1	604.3	1.2	32	48.6	47.4	47.2	TSI Average = 47.8
Median	20.8	2.1	5.1	17.7	601.5	1	33	49.3	46.4	45.6	
Min	13.5	1.6	2.9	13.8	495.0	1	13	42.3	41.1	42.0	
Max	24.0	3.4	16.8	46.5	678.0	2	42	53.2	58.2	59.5	
Count	14	14	14	14	14	13	14	14	14	14	