

Trout

Lake Overview

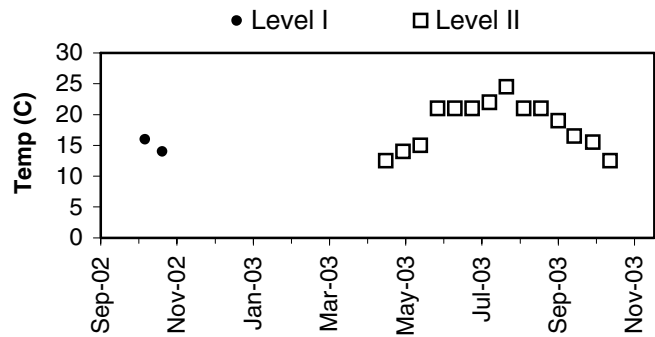
Volunteer monitoring began at Trout Lake in 1996 and has continued through 2003. The data indicate this lake is relatively high in primary productivity (borderline eutrophic) with good to fair water quality. Since the lake surface makes up less than 2% of the drainage area, direct precipitation is relatively unimportant compared to watershed inputs. Both Fivemile and Spider Lakes are upstream from Trout Lake. Land use analysis of 2002 aerial photographs showed that 63% of the surrounding watershed has been developed for uses other than agriculture or forestry.

Trout Lake has a street end public access, and residents should keep a close eye on aquatic plants growing nearshore to catch early infestations of Eurasian milfoil, Brazilian elodea, and other aquatic noxious weeds.

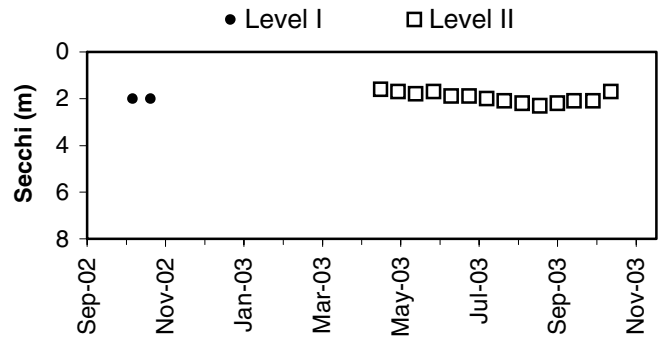
Physical Parameters

Secchi transparency ranged from 1.6 to 2.3m from April through October. Water temperatures reached 24.5 degrees Celsius over the same period. Excellent precipitation and water level records were kept, describing a winter-high stand dropping steadily after April to an autumn-low stand, similar to many lakes in the region.

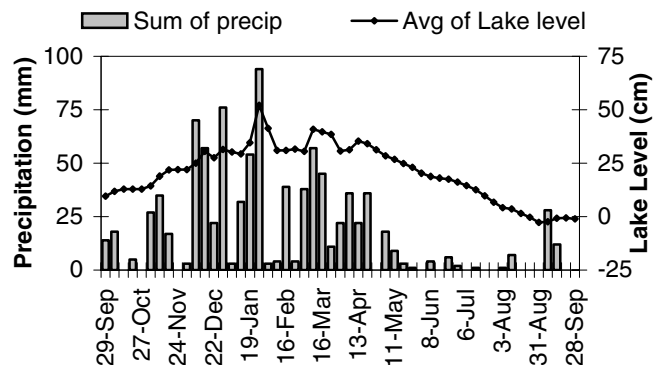
Lake Temperature



Secchi Depth

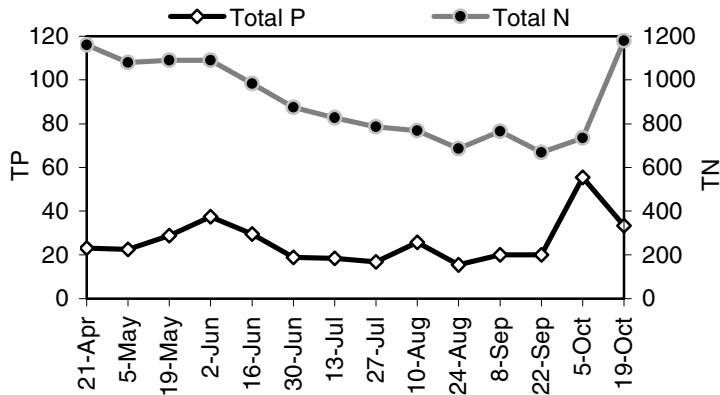


Lake Level and Precipitation

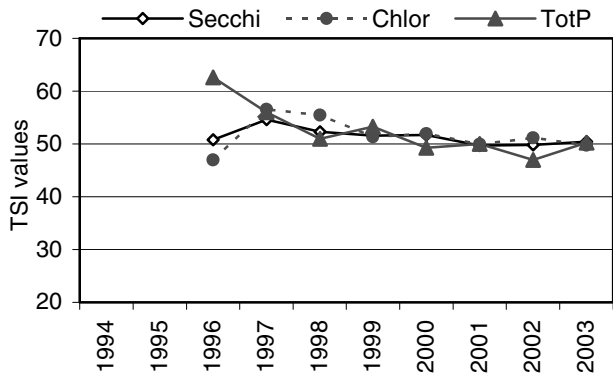


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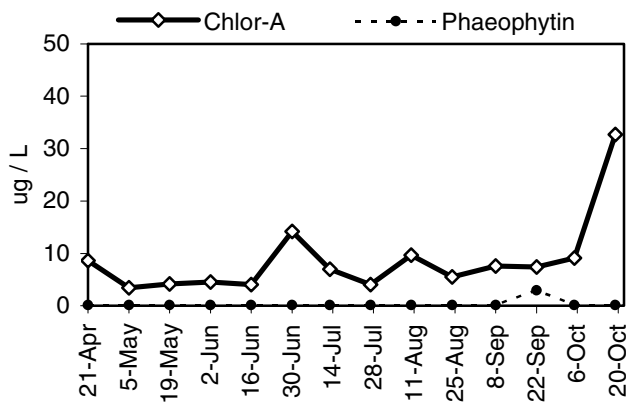
Nutrient Analysis



TSI Ratings



Chlorophyll a Concentrations (ug/L)



Nutrient Analysis and TSI Ratings

Total nitrogen decreased steadily until the end of September, while total phosphorus remained relatively stable. Both parameters increased in autumn. The N:P ratio ranged from 13 to 50. In 2003, the averages of the three TSI indicators were very close together, on the borderline between mesotrophy and eutrophy.

Chlorophyll and Algae

Chlorophyll concentrations remained moderate from late April through early October, with small peaks at the end of June and mid-August. In late October, chlorophyll rose dramatically. This was caused by a bloom of the bluegreen *Aphanizomenon flos-aquae*, which made a major peak in biovolume on the last sample date. Other important algae through the season included the cryptophyte *Cryptomonas*, the chrysophyte *Dinobryon*, and the euglenophyte *Trachelomonas volvocina*.

Common algae	Group
<i>Aphanizomenon flos-aquae</i>	bluegreen
<i>Cryptomonas</i> spp.	cryptophyte
<i>Dinobryon</i> spp.	chrysophyte

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2003 Level I Data

Daily Data Summary

Week of	Sum of precip. (mm)	# of days	Avg of lake level (cm)	# of days
29-Sep-02	14.0	5	9.6	5
6-Oct-02	18.0	7	11.9	7
13-Oct-02	0.0	7	13.0	7
20-Oct-02	5.0	7	13.0	7
27-Oct-02	0.0	7	13.0	7
3-Nov-02	27.0	7	14.4	7
10-Nov-02	35.0	7	18.9	7
17-Nov-02	17.0	7	21.7	7
24-Nov-02	0.0	7	22.0	7
1-Dec-02	3.0	7	22.0	7
8-Dec-02	70.0	7	25.0	7
15-Dec-02	57.0	7	30.4	7
22-Dec-02	22.0	7	27.4	7
29-Dec-02	76.0	7	31.3	6
5-Jan-03	3.0	7	30.1	7
12-Jan-03	32.0	7	29.3	7
19-Jan-03	54.0	7	34.6	7
26-Jan-03	94.0	7	52.0	7
2-Feb-03	3.0	7	41.3	7
9-Feb-03	4.0	7	30.9	7
16-Feb-03	39.0	7	30.9	7
23-Feb-03	4.0	7	31.6	7
2-Mar-03	38.0	7	30.4	7
9-Mar-03	57.0	7	40.9	7
16-Mar-03	45.0	7	39.6	7
23-Mar-03	11.0	7	38.4	7
30-Mar-03	22.0	7	30.7	6
6-Apr-03	36.0	7	31.3	7
13-Apr-03	22.0	7	35.3	7
20-Apr-03	36.0	7	34.0	7
27-Apr-03	0.0	7	31.3	7
4-May-03	18.0	7	28.4	7
11-May-03	9.0	7	26.7	7
18-May-03	3.0	7	24.7	7
25-May-03	1.0	7	23.0	7
1-Jun-03	0.0	7	20.3	7
8-Jun-03	4.0	7	18.7	7
15-Jun-03	0.0	7	18.0	7
22-Jun-03	6.0	7	17.6	7
29-Jun-03	2.0	7	16.3	7
6-Jul-03	0.0	7	14.6	7
13-Jul-03	1.0	7	12.6	7
20-Jul-03	0.0	7	9.7	7
27-Jul-03	0.0	7	6.7	7
3-Aug-03	1.0	7	4.3	7
10-Aug-03	7.0	7	3.6	7
17-Aug-03	0.0	7	1.6	7
24-Aug-03	0.0	7	-0.3	7
31-Aug-03	0.0	7	-2.7	7
7-Sep-03	28.0	7	-2.4	7
14-Sep-03	12.0	7	-0.7	7
21-Sep-03	0.0	7	-0.6	7
28-Sep-03	0.0	3	-1.0	3
Min	0.0		-2.7	
Max	94.0		52.0	
Total	936.0			

Weekly Data Summary

Sample date	Sample time	Secchi (m)	Temp (°C)	Algae (Shore)	Algae (at site)	Goose Count
7-Oct-02	16:00	2.0	16.0			
21-Oct-02	12:00	2.0	14.0			
2-Jun-03	16:00	1.7	21.0			
13-Jul-03	14:00	2.0	22.0			
1-Aug-03	15:00	2.1	24.5			
Min		1.7	21.0			
Max		2.1	24.5			

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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	
21-Apr	12.5	1.6	8.6	23.0	1160		50	53.2	51.7	49.4	
5-May	14.0	1.7	3.4	22.5	1080		48	52.3	42.7	49.1	
19-May	15.0	1.8	4.1	28.7	1090		38	51.5	44.5	52.6	
2-Jun	21.0	1.7	4.5	37.4	1090		29	52.3	45.4	56.4	
16-Jun	21.0	1.9	4.0	29.5	983		33	50.7	44.2	53.0	
30-Jun	21.0	1.9	14.2	18.8	875		47	50.7	56.6	46.5	
14-Jul	22.0	2.0	7.0	18.3	828		45	50.0	49.6	46.1	
28-Jul	24.5	2.1	4.0	16.7	786		47	49.3	44.2	44.8	
11-Aug	21.0	2.2	9.7	25.7	769		30	48.6	52.8	51.0	
25-Aug	21.0	2.3	5.5	15.4	686		45	48.0	47.3	43.6	
8-Sep	19.0	2.2	7.6	19.9	766		38	48.6	50.5	47.3	
21-Sep	16.5	2.1	7.4	20.0	669		33	49.3	50.2	47.4	
6-Oct	15.5	2.1	9.1	55.5	735	3	13	49.3	52.2	62.1	
20-Oct	12.5	1.7	32.7	33.3	1180		35	52.3	64.8	54.7	
	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	18.3	2.0	8.7	26.1	906.9	3	38	50.5	49.8	50.3	TSI Average = 50.2
Median	20.0	2.0	7.2	22.8	851.5	3	38	50.4	49.9	49.2	
Min	12.5	1.6	3.4	15.4	669.0	3	13	48.0	42.7	43.6	
Max	24.5	2.3	32.7	55.5	1180.0	3	50	53.2	64.8	62.1	
Count	14	14	14	14	14	1	14	14	14	14	