

Sixth Lake

Location

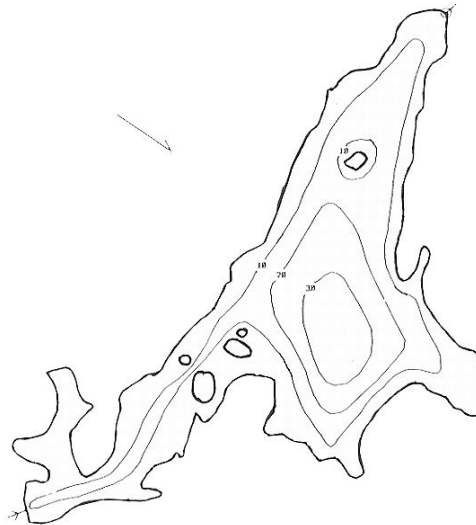
Pond Number: 040787A
Watershed: Black River
County: Hamilton
Topographic Quadrangle: Old Forge

Sample Site

Latitude: 43° 44.920'
Longitude: 74° 46.431'

Morphometry

Surface Area: 108 Ac.
Mean Depth: 12 Ft.
Maximum Depth: 43 Ft.
Volume: 1,296 Ac./Ft.
Watershed Area: 11,953 Ac.
Hydraulic Retention Time: 0.04 Yr.
Shoreline Length: 3.8 Mi.
Elevation: 1,785 Ft.
Water Quality Classification: A
Trophic State: Mesotrophic



Temperature and Dissolved Oxygen

Sixth Lake had a minimum DO of 0.2 mg/L (September 1996), with a minimum temperature of 5.0°C and a maximum temperature of 24.4°C. In general, the lowest DO values occurred during the months of July through September.

pH

Figure 204 presents the seasonal mean pH trend in Sixth Lake, while Table 161 presents descriptive statistics for pH in Sixth Lake. The pH in Sixth Lake exhibited an increasing trend from 1996 to 1998 followed by a relatively stable period from 1998 to 2003. The pH in Sixth Lake was slightly higher than the county average from 1993 through 1998, though this difference was not statistically significant.

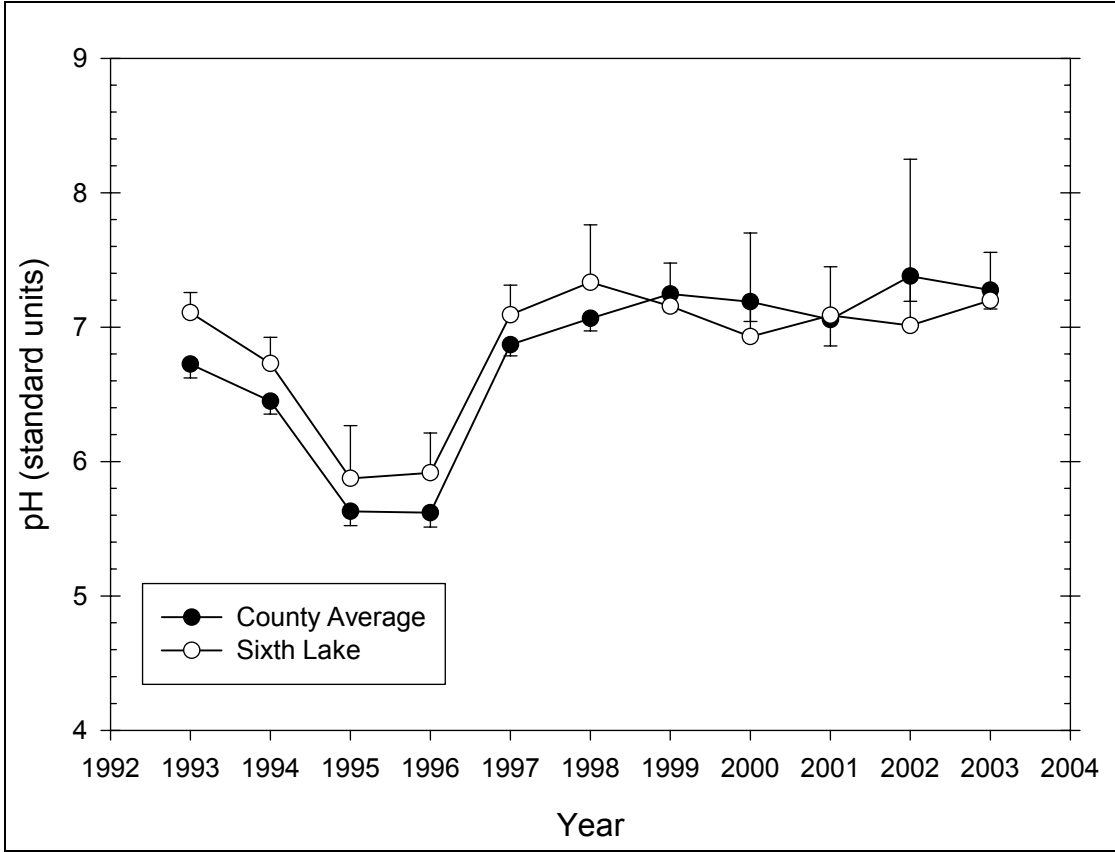


Figure 204 Seasonal mean pH trend in Sixth Lake

Table 161 – Descriptive Statistics for pH in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	7.108	0.121	0.0540	0.150
1994	6	0	6.730	0.186	0.0759	0.195
1995	6	0	5.875	0.374	0.153	0.393
1996	6	0	5.917	0.281	0.115	0.295
1997	6	0	7.092	0.210	0.0859	0.221
1998	6	0	7.333	0.407	0.166	0.427
1999	5	0	7.156	0.259	0.116	0.321
2000	6	0	6.930	0.734	0.300	0.771
2001	4	0	7.088	0.227	0.114	0.362
2002	4	0	7.013	0.778	0.389	1.238
2003	4	0	7.200	0.224	0.112	0.357
Year	Range	Max	Min	Median	25%	75%
1993	0.290	7.220	6.930	7.100	7.035	7.220
1994	0.470	6.970	6.500	6.755	6.550	6.850
1995	0.960	6.330	5.370	5.960	5.490	6.140
1996	0.770	6.280	5.510	5.890	5.780	6.150
1997	0.570	7.500	6.930	7.040	6.940	7.100
1998	1.150	7.940	6.790	7.330	7.020	7.590
1999	0.610	7.510	6.900	7.180	6.908	7.338
2000	2.180	8.000	5.820	6.910	6.640	7.300
2001	0.540	7.370	6.830	7.075	6.920	7.255

2002	1.740	7.610	5.870	7.285	6.555	7.470
2003	0.480	7.510	7.030	7.130	7.035	7.365
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	-0.684	-0.223	0.223	0.484	35.540	252.677
1994	-0.0621	-1.846	0.223	0.413	40.380	271.930
1995	-0.404	-1.423	0.204	0.520	35.250	207.794
1996	-0.149	-0.843	0.186	0.614	35.500	210.438
1997	1.936	4.124	0.318	0.059	42.550	301.972
1998	0.219	-0.201	0.170	0.689	44.000	323.494
1999	0.353	-1.311	0.229	0.453	35.780	256.309
2000	-0.0926	0.637	0.180	0.646	41.580	290.845
2001	0.293	0.0193	0.159	0.709	28.350	201.086
2002	-1.749	3.296	0.365	0.067	28.050	198.516
2003	1.227	0.612	0.262	0.378	28.800	207.511

Alkalinity

Figure 205 presents the seasonal mean alkalinity trend in Sixth Lake, while Table 162 presents descriptive statistics for alkalinity in Sixth Lake. The alkalinity in Sixth Lake exhibited no discernible trend. The alkalinity in Sixth Lake was slightly higher than the county average, though this difference was not statistically significant.

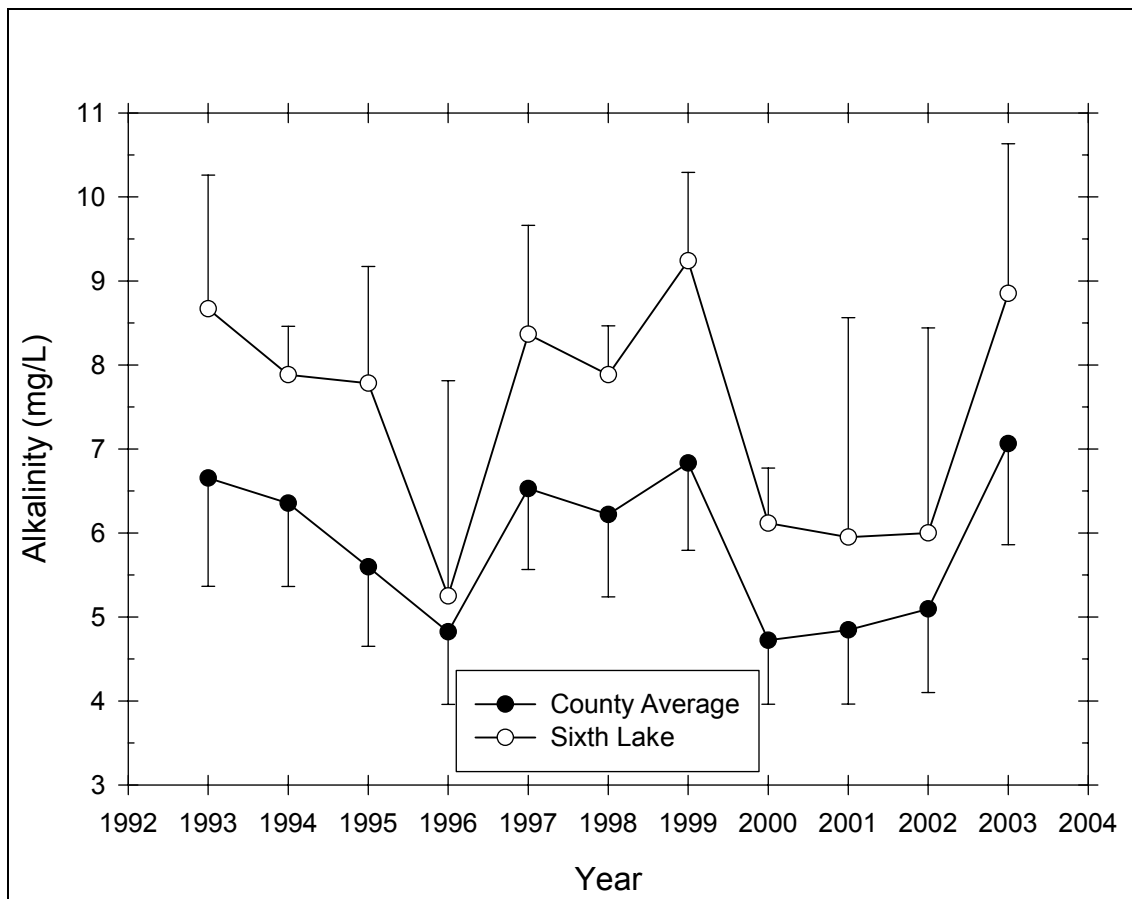


Figure 205 Seasonal mean alkalinity trend in Sixth Lake

Table 162 – Descriptive Statistics for Alkalinity in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	5	2	8.667	0.643	0.371	1.597
1994	6	0	7.883	0.549	0.224	0.576
1995	6	0	7.783	1.323	0.540	1.388
1996	6	0	5.250	2.442	0.997	2.563
1997	6	0	8.367	1.234	0.504	1.295
1998	6	0	7.883	0.556	0.227	0.584
1999	6	1	9.240	0.847	0.379	1.052
2000	6	0	6.117	0.624	0.255	0.655
2001	6	2	5.950	1.642	0.821	2.613
2002	6	2	6.000	1.534	0.767	2.441
2003	6	2	8.850	1.121	0.561	1.784
Year	Range	Max	Min	Median	25%	75%
1993	1.200	9.400	8.200	8.400	8.250	9.150
1994	1.500	8.600	7.100	8.000	7.400	8.200
1995	3.000	9.500	6.500	7.200	6.900	9.400
1996	6.400	6.700	0.300	6.100	5.900	6.400
1997	3.000	9.600	6.600	8.650	7.300	9.400
1998	1.500	8.800	7.300	7.800	7.400	8.200
1999	2.200	10.100	7.900	9.500	8.725	9.800
2000	1.700	6.800	5.100	6.250	5.700	6.600
2001	4.000	8.000	4.000	5.900	4.850	7.050
2002	3.400	7.700	4.300	6.000	4.750	7.250
2003	2.700	10.200	7.500	8.850	8.050	9.650
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	1.545	--	0.328	0.225	26.000	226.160
1994	-0.332	-0.811	0.179	0.651	47.300	374.390
1995	0.771	-1.852	0.281	0.148	46.700	372.230
1996	-2.373	5.716	0.438	<0.001	31.500	195.190
1997	-0.509	-1.728	0.250	0.270	50.200	427.620
1998	0.843	0.229	0.155	0.739	47.300	374.430
1999	-1.143	1.272	0.221	0.498	46.200	429.760
2000	-0.844	0.0764	0.220	0.431	36.700	226.430
2001	0.179	1.225	0.214	0.586	23.800	149.700
2002	5.551E-017	-2.953	0.199	0.636	24.000	151.060
2003	-9.918E-015	0.538	0.162	0.708	35.400	317.060

Total Phosphorus

Figure 206 presents the seasonal mean total phosphorus trend in Sixth Lake, while Table 163 presents descriptive statistics for total phosphorus in Sixth Lake. The total phosphorus in Sixth Lake exhibited a stable trend from 1994 to 2000, followed by a decreasing trend from 2000 to 2002. The total phosphorus in Sixth Lake was similar to but more variable than the county average. Any difference between the two was not statistically significant.

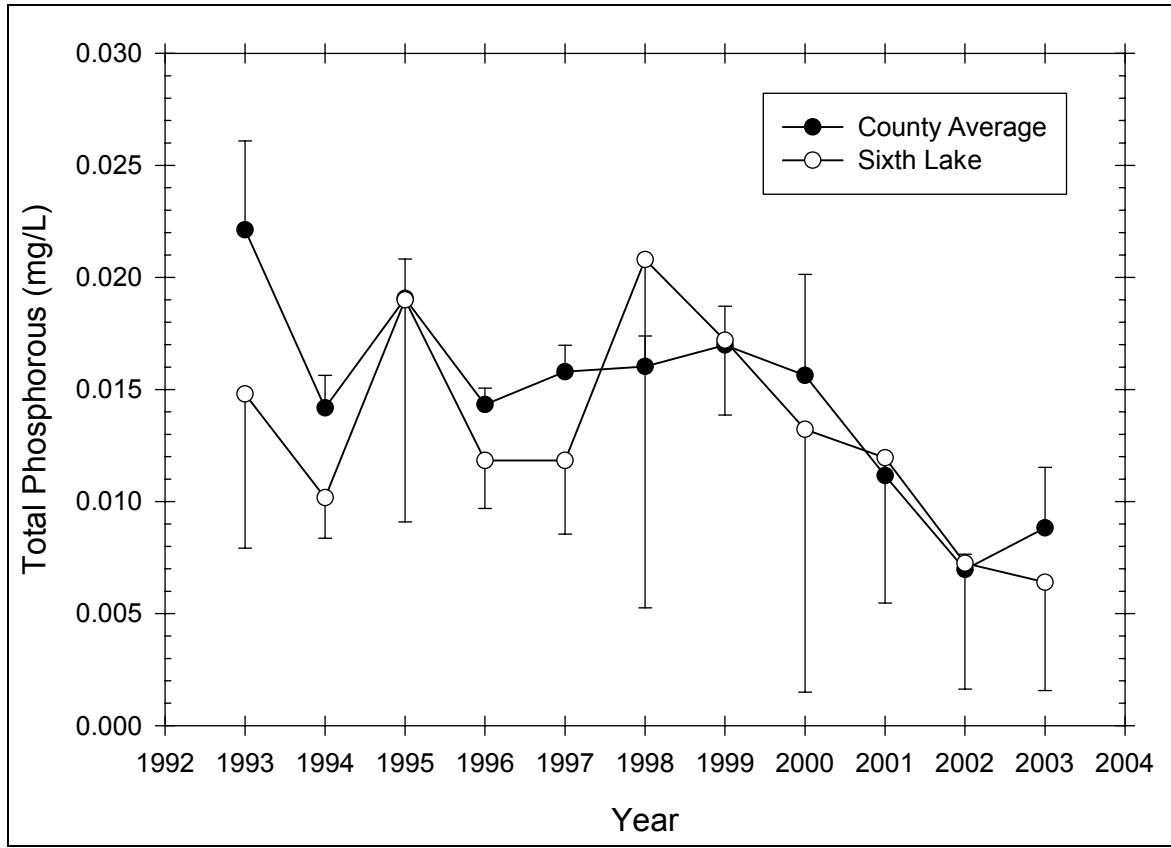


Figure 206 Seasonal mean total phosphorus trend in Sixth Lake

Table 163 – Descriptive Statistics for Total Phosphorus in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	0.0148	0.00554	0.00248	0.00688
1994	6	0	0.0102	0.00172	0.000703	0.00181
1995	6	0	0.0190	0.00944	0.00386	0.00991
1996	6	0	0.0118	0.00204	0.000833	0.00214
1997	6	0	0.0118	0.00313	0.00128	0.00328
1998	6	1	0.0208	0.0125	0.00560	0.0155
1999	6	1	0.0172	0.00268	0.00120	0.00333
2000	6	1	0.0132	0.00944	0.00422	0.0117
2001	6	2	0.0120	0.00407	0.00204	0.00648
2002	6	2	0.00725	0.00353	0.00177	0.00562
2003	6	2	0.00640	0.00304	0.00152	0.00484
Year	Range	Max	Min	Median	25%	75%
1993	0.0150	0.0210	0.00600	0.0160	0.0120	0.0180
1994	0.00400	0.0120	0.00800	0.01000	0.00900	0.0120
1995	0.0240	0.0320	0.00800	0.0200	0.00900	0.0250
1996	0.00600	0.0140	0.00800	0.0120	0.0120	0.0130
1997	0.00800	0.0150	0.00700	0.0120	0.01000	0.0150
1998	0.0310	0.0420	0.0110	0.0190	0.0118	0.0255
1999	0.00600	0.0200	0.0140	0.0160	0.0155	0.0200
2000	0.0211	0.0231	0.00200	0.01000	0.00650	0.0230
2001	0.00940	0.0176	0.00820	0.0110	0.00910	0.0148
2002	0.00690	0.0111	0.00420	0.00685	0.00425	0.0103

2003	0.00630	0.00980	0.00350	0.00615	0.00385	0.00895
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	-1.056	1.948	0.243	0.386	0.0740	0.00122
1994	-0.0261	-2.367	0.251	0.267	0.0610	0.000635
1995	0.0491	-1.432	0.188	0.603	0.114	0.00261
1996	-1.572	3.420	0.366	0.012	0.0710	0.000861
1997	-0.536	-0.669	0.178	0.655	0.0710	0.000889
1998	1.678	3.058	0.325	0.090	0.104	0.00279
1999	0.166	-2.407	0.273	0.247	0.0860	0.00151
2000	0.154	-2.442	0.250	0.351	0.0661	0.00123
2001	1.185	1.400	0.245	0.454	0.0478	0.000621
2002	0.196	-4.872	0.298	0.233	0.0290	0.000248
2003	0.218	-4.267	0.265	0.364	0.0256	0.000192

Nitrate

Figure 207 presents the seasonal mean nitrate trend in Sixth Lake, while Table 164 presents descriptive statistics for nitrate in Sixth Lake. The nitrate in Sixth Lake exhibited a decreasing trend from 1997 to 2003. The nitrate in Sixth Lake was slightly higher than the county average, though this difference was not statistically significant.

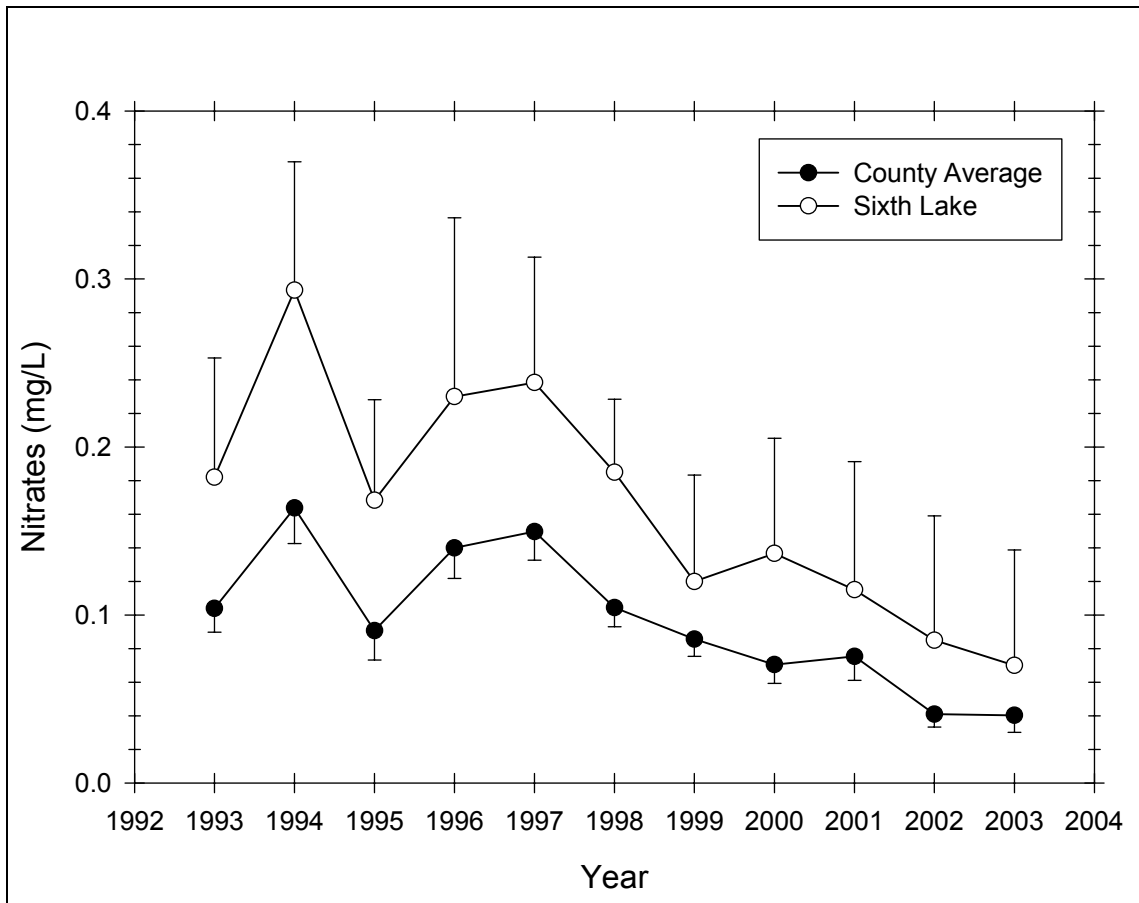


Figure 207 Seasonal mean nitrate trend in Sixth Lake

Table 164 – Descriptive Statistics for X in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	0.182	0.0572	0.0256	0.0710
1994	6	0	0.293	0.0728	0.0297	0.0764
1995	6	0	0.168	0.0571	0.0233	0.0599
1996	6	0	0.230	0.101	0.0414	0.106
1997	6	0	0.238	0.0711	0.0290	0.0746
1998	6	0	0.185	0.0414	0.0169	0.0434
1999	6	1	0.120	0.0510	0.0228	0.0633
2000	6	0	0.137	0.0653	0.0267	0.0685
2001	6	2	0.115	0.0480	0.0240	0.0763
2002	6	2	0.0850	0.0465	0.0233	0.0741
2003	6	2	0.0700	0.0432	0.0216	0.0687
Year	Range	Max	Min	Median	25%	75%
1993	0.130	0.240	0.110	0.170	0.140	0.240
1994	0.190	0.400	0.210	0.270	0.250	0.360
1995	0.160	0.250	0.0900	0.160	0.140	0.210
1996	0.260	0.380	0.120	0.210	0.150	0.310
1997	0.180	0.330	0.150	0.225	0.190	0.310
1998	0.110	0.240	0.130	0.185	0.160	0.210
1999	0.120	0.180	0.0600	0.120	0.0750	0.165
2000	0.180	0.250	0.0700	0.120	0.0900	0.170
2001	0.1000	0.160	0.0600	0.120	0.0750	0.155
2002	0.110	0.150	0.0400	0.0750	0.0550	0.115
2003	0.1000	0.130	0.0300	0.0600	0.0400	0.1000
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	-0.0390	-2.088	0.245	0.376	0.910	0.179
1994	0.596	-1.167	0.224	0.407	1.760	0.543
1995	0.149	-0.544	0.190	0.594	1.010	0.186
1996	0.528	-1.297	0.223	0.412	1.380	0.369
1997	0.235	-1.719	0.205	0.514	1.430	0.366
1998	2.956E-015	-1.495	0.227	0.389	1.110	0.214
1999	2.776E-015	-2.260	0.184	0.664	0.600	0.0824
2000	1.158	1.103	0.207	0.501	0.820	0.133
2001	-0.290	-3.958	0.267	0.356	0.460	0.0598
2002	1.190	2.123	0.293	0.252	0.340	0.0354
2003	1.190	1.500	0.250	0.432	0.280	0.0252

Chlorophyll a

Figure 208 presents the seasonal mean chlorophyll *a* trend in Sixth Lake, while Table 165 presents descriptive statistics for chlorophyll *a* in Sixth Lake. The chlorophyll *a* in Sixth Lake exhibited no discernible trend. The chlorophyll *a* in Sixth Lake was slightly lower than the county average, though this difference was not statistically significant.

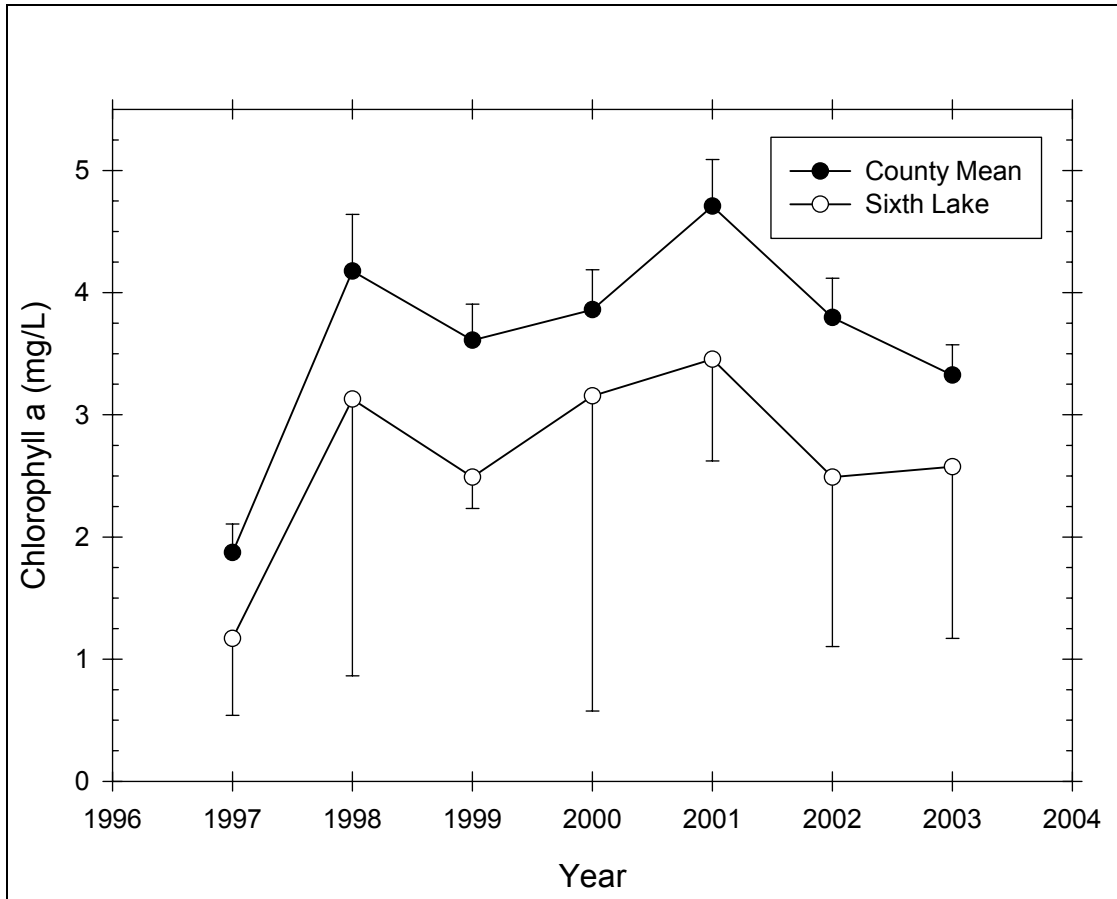


Figure 208 Seasonal mean chlorophyll a trend in Sixth Lake

Table 165 – Descriptive Statistics for Chlorophyll a in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	0	1.170	0.600	0.245	0.629
1998	6	0	3.128	2.158	0.881	2.265
1999	6	1	2.490	0.207	0.0925	0.257
2000	6	1	3.154	2.076	0.929	2.578
2001	6	2	3.455	0.523	0.262	0.833
2002	6	2	2.490	0.871	0.435	1.386
2003	6	2	2.575	0.883	0.442	1.405
Year	Range	Max	Min	Median	25%	75%
1997	1.650	2.220	0.570	1.065	0.710	1.390
1998	5.730	6.600	0.870	2.935	1.090	4.340
1999	0.540	2.730	2.190	2.470	2.370	2.655
2000	4.830	6.850	2.020	2.190	2.110	3.640
2001	1.090	3.970	2.880	3.485	3.015	3.895
2002	1.880	3.760	1.880	2.160	1.925	3.055
2003	1.950	3.880	1.930	2.245	2.070	3.080
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	1.161	1.307	0.190	0.594	7.020	10.012
1998	0.698	-0.0877	0.161	0.721	18.770	82.001
1999	-0.501	0.0623	0.186	0.656	12.450	31.172

2000	2.183	4.798	0.411	0.006	15.770	66.983
2001	-0.155	-4.353	0.257	0.400	13.820	48.570
2002	1.694	2.808	0.314	0.180	9.960	27.075
2003	1.820	3.487	0.381	0.043	10.300	28.862

Transparency

Figure 209 presents the seasonal mean transparency trend in Sixth Lake, while Table 166 presents descriptive statistics for transparency in Sixth Lake. The transparency in Sixth Lake exhibited a decreasing trend from 1993 to about 2001. The transparency in Sixth Lake was slightly higher than the county average, though this difference was not statistically significant.

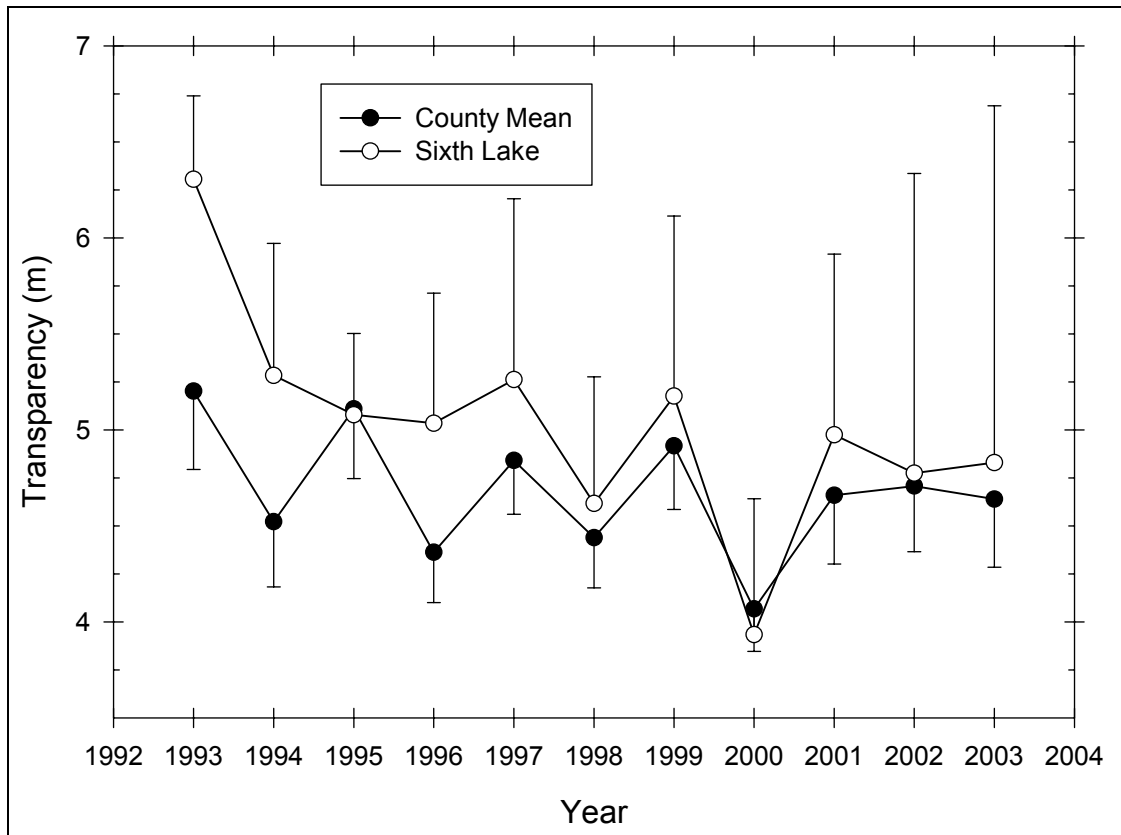


Figure 209 Seasonal mean transparency trend in Sixth Lake

Table 166 – Descriptive Statistics for Transparency in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	6.304	0.351	0.157	0.435
1994	6	0	5.283	0.655	0.268	0.688
1995	6	0	5.078	0.404	0.165	0.424
1996	6	0	5.035	0.646	0.264	0.678
1997	6	0	5.262	0.898	0.366	0.942
1998	6	0	4.617	0.629	0.257	0.660
1999	5	0	5.176	0.755	0.338	0.938
2000	6	0	3.933	0.675	0.276	0.708

2001	4	0	4.975	0.591	0.295	0.940
2002	4	0	4.775	0.981	0.491	1.561
2003	4	0	4.830	1.168	0.584	1.858
Year	Range	Max	Min	Median	25%	75%
1993	0.760	6.670	5.910	6.210	6.023	6.670
1994	1.700	6.000	4.300	5.450	4.700	5.800
1995	1.200	5.700	4.500	5.150	4.800	5.170
1996	1.600	5.700	4.100	5.300	4.360	5.450
1997	2.010	6.410	4.400	4.955	4.500	6.350
1998	1.570	5.520	3.950	4.415	4.150	5.250
1999	2.000	5.950	3.950	5.310	4.813	5.665
2000	1.900	5.000	3.100	3.775	3.550	4.400
2001	1.400	5.600	4.200	5.050	4.550	5.400
2002	2.200	6.000	3.800	4.650	4.000	5.550
2003	2.830	6.100	3.270	4.975	4.110	5.550
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	0.208	-2.734	0.252	0.341	31.520	199.194
1994	-0.673	-0.986	0.237	0.335	31.700	169.630
1995	0.122	0.758	0.244	0.302	30.470	155.554
1996	-0.805	-1.390	0.326	0.045	30.210	154.192
1997	0.685	-1.876	0.264	0.208	31.570	170.139
1998	0.686	-1.411	0.240	0.319	27.700	129.857
1999	-1.273	2.157	0.260	0.303	25.880	136.236
2000	0.641	-0.00540	0.186	0.614	23.600	95.105
2001	-0.680	0.606	0.200	0.634	19.900	100.050
2002	0.533	-1.712	0.221	0.557	19.100	94.090
2003	-0.729	1.790	0.291	0.259	19.320	97.405

TSI

Figure 210 presents the Carlson trophic state index trend in Sixth Lake. Transparency TSI was generally at the upper oligotrophic range or oligotrophic-mesotrophic boundary, while chlorophyll *a* TSI was generally at the upper mesotrophic range or lower eutrophic range.

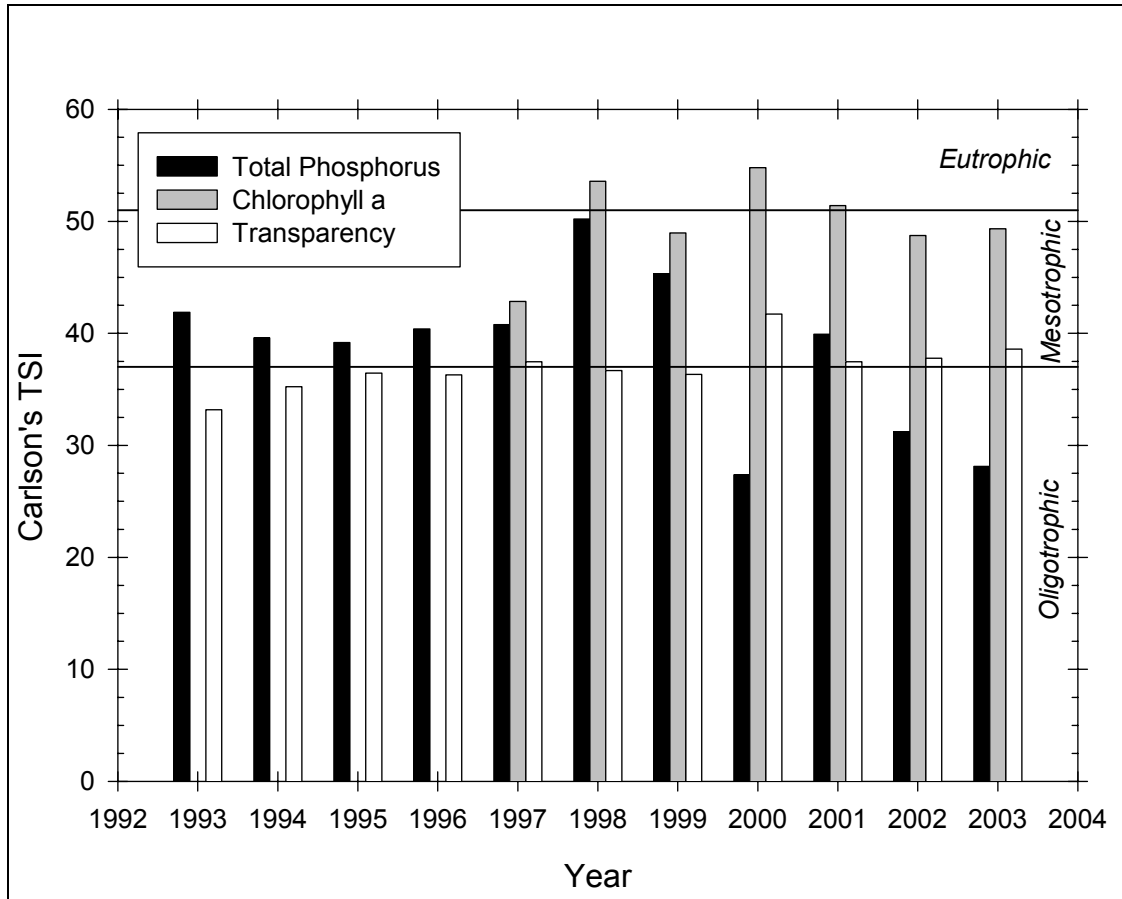


Figure 210 Carlson TSI trend in Sixth Lake

Aluminum

Figure 211 presents the seasonal mean aluminum trend in Sixth Lake, while Table 167 presents descriptive statistics for aluminum in Sixth Lake. The aluminum in Sixth Lake was generally variable from year to year and exhibited no discernible trend other than a higher value in 1997. The aluminum in Sixth Lake was slightly lower than the county average, though this difference was not statistically significant.

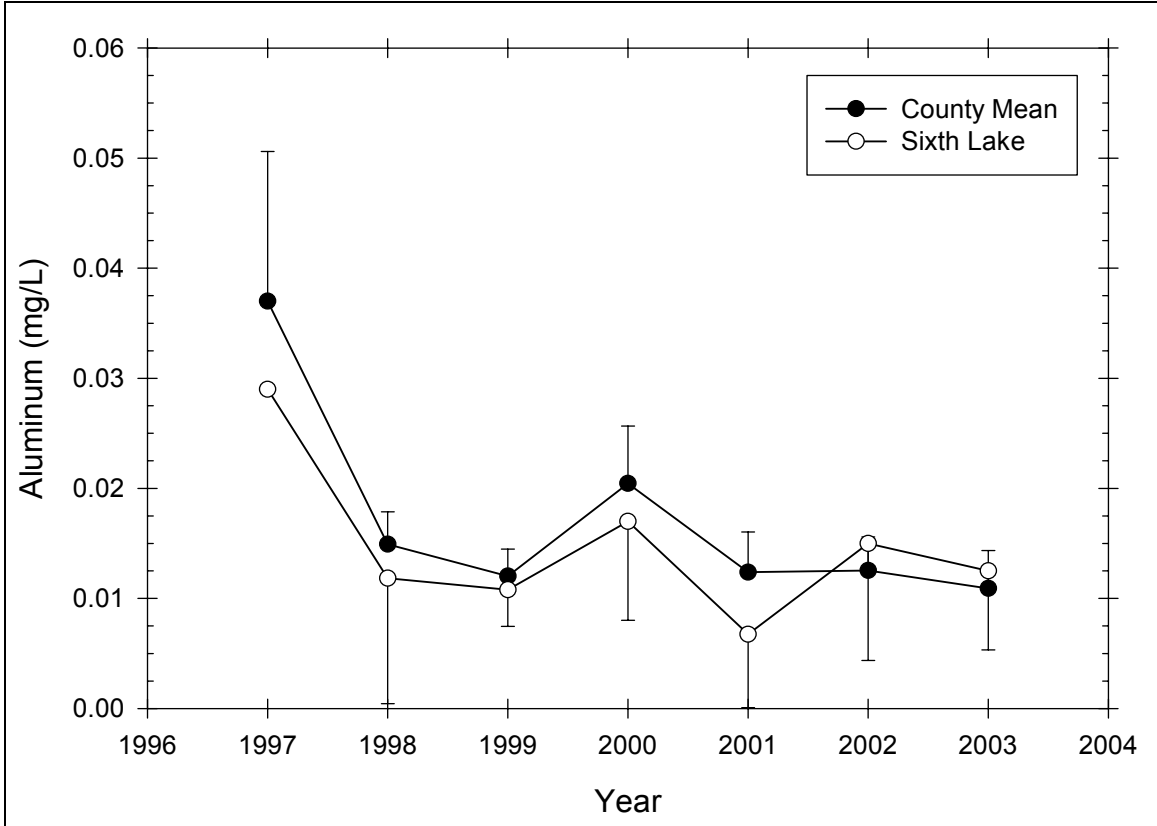


Figure 211 Seasonal mean aluminum trend in Sixth Lake

Table 167 – Descriptive Statistics for Aluminum in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	5	0.0290	--	--	--
1998	6	0	0.0118	0.0109	0.00443	0.0114
1999	6	1	0.0108	0.00268	0.00120	0.00333
2000	6	0	0.0170	0.00856	0.00349	0.00898
2001	6	2	0.00675	0.00419	0.00210	0.00667
2002	6	2	0.0150	0.00668	0.00334	0.0106
2003	6	2	0.0125	0.00451	0.00225	0.00718
Year	Range	Max	Min	Median	25%	75%
1997	0.000	0.0290	0.0290	0.0290	0.0290	0.0290
1998	0.0280	0.0280	0.000	0.0120	0.001000	0.0180
1999	0.00600	0.0150	0.00900	0.00900	0.00900	0.0128
2000	0.0220	0.0310	0.00900	0.0155	0.00900	0.0220
2001	0.01000	0.0110	0.001000	0.00750	0.00400	0.00950
2002	0.0140	0.0250	0.0110	0.0120	0.0115	0.0185
2003	0.01000	0.0190	0.00900	0.0110	0.00950	0.0155
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	0.0290	0.000841
1998	0.363	-1.018	0.174	0.671	0.0710	0.00143
1999	1.258	0.313	0.349	0.046	0.0540	0.000612
2000	0.854	-0.0459	0.180	0.645	0.102	0.00210
2001	-1.007	1.829	0.274	0.328	0.0270	0.000235

2002	1.970	3.906	0.423	0.012	0.0600	0.00103
2003	1.571	2.417	0.294	0.247	0.0500	0.000686

Calcium

Figure 212 presents the seasonal mean calcium trend in Sixth Lake, while Table 168 presents descriptive statistics for calcium in Sixth Lake. The calcium in Sixth Lake exhibited an increasing trend from 1997 to 2000 with stable values from 2000 to 2003. The calcium in Sixth Lake was higher than the county average, though this difference may not be statistically significant for all years.

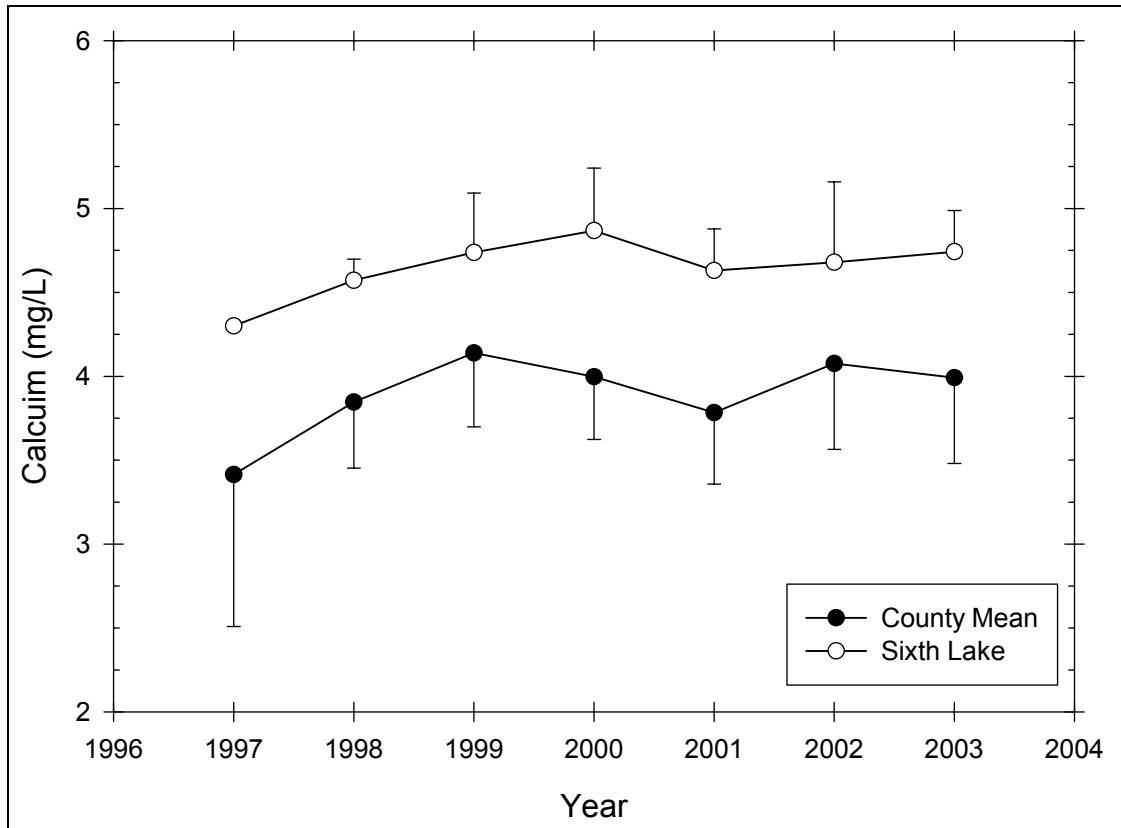


Figure 212 Seasonal mean calcium trend in Sixth Lake

Table 168 – Descriptive Statistics for Calcium in Sixth Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	5	4.300	--	--	--
1998	6	0	4.572	0.120	0.0492	0.126
1999	6	1	4.738	0.285	0.127	0.354
2000	6	0	4.868	0.354	0.145	0.372
2001	6	2	4.630	0.156	0.0782	0.249
2002	6	2	4.680	0.301	0.150	0.479
2003	6	2	4.742	0.154	0.0772	0.246
Year	Range	Max	Min	Median	25%	75%
1997	0.000	4.300	4.300	4.300	4.300	4.300
1998	0.280	4.690	4.410	4.580	4.480	4.690

1999	0.760	5.120	4.360	4.670	4.578	4.947
2000	0.940	5.520	4.580	4.720	4.650	5.020
2001	0.360	4.780	4.420	4.660	4.515	4.745
2002	0.730	5.010	4.280	4.715	4.495	4.865
2003	0.330	4.940	4.610	4.710	4.620	4.865
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	4.300	18.490
1998	-0.247	-2.260	0.242	0.309	27.430	125.473
1999	0.0767	0.0498	0.194	0.622	23.690	112.568
2000	1.600	2.270	0.276	0.163	29.210	142.831
2001	-0.938	0.377	0.199	0.636	18.520	85.821
2002	-0.685	1.758	0.290	0.264	18.720	87.881
2003	0.736	-1.785	0.267	0.357	18.970	90.037

Calcite Saturation Index

Figure 212 presents the calcite saturation index trend in Sixth Lake. The CSI in Sixth Lake exhibited no consistent trend for the period of record. The CSI in Sixth Lake was slightly lower than the county average, though this difference was not statistically significant.

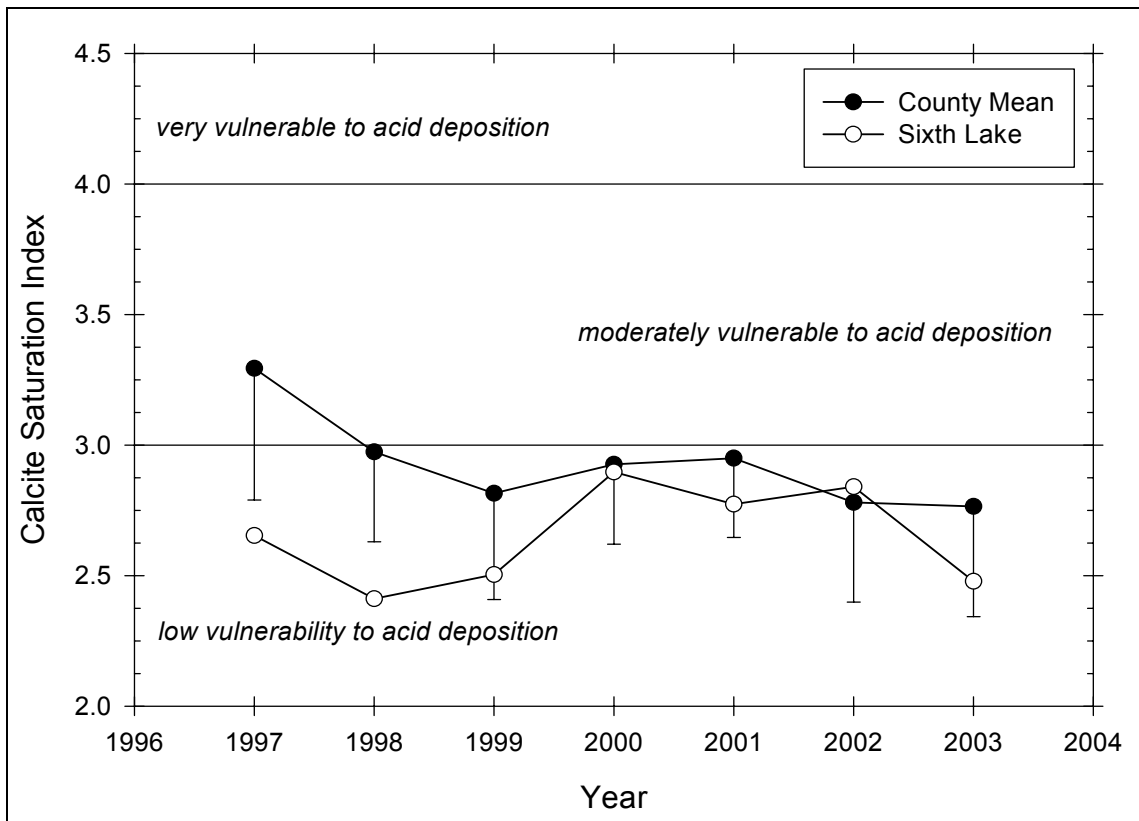


Figure 213 Seasonal mean CSI trend in Sixth Lake