

Lake Abanakee

Location

Pond Number: 1104-0027

Watershed: Upper Hudson River

County: Hamilton

Topographic Quadrangle: Blue Mountain

Sample Site

Latitude: 43o 46.340'

Longitude: 74o 15.007'

Morphometry

Surface Area: 1017 Ac.

Mean Depth: 12.3 Ft.

Maximum Depth: 26.6 Ft.

Volume: 147596 Ac/F

Watershed Area: 20197 Ac.

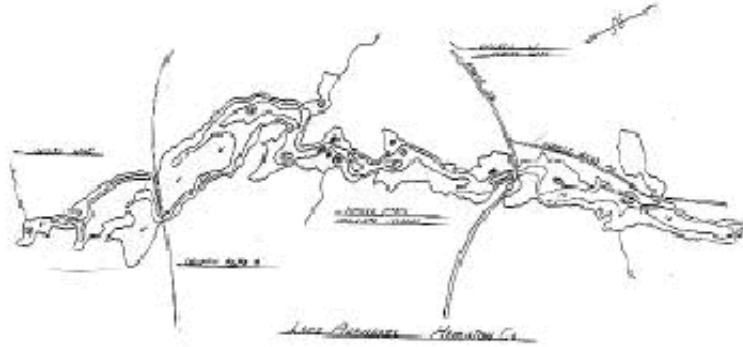
Hydraulic Retention Time: .12 Yr.

Shoreline Length: 16.9 Mi.

Elevation: 1598 Ft.

Water Quality Classification: B

Trophic State: Mesotrophic



Temperature and Dissolved Oxygen

Lake Abanakee had a minimum DO of 5.5 mg/L (August 2002), with a minimum temperature of 11.5°C and a maximum temperature of 24.4°C. In general, the lowest DO values occurred during the month of August.

pH

Figure 74 presents the seasonal mean pH trend in Lake Abanakee, while Table 57 presents descriptive statistics for pH in Lake Abanakee. The pH in Lake Abanakee exhibited no discernable trend. The pH in Lake Abanakee was similar to the county average.

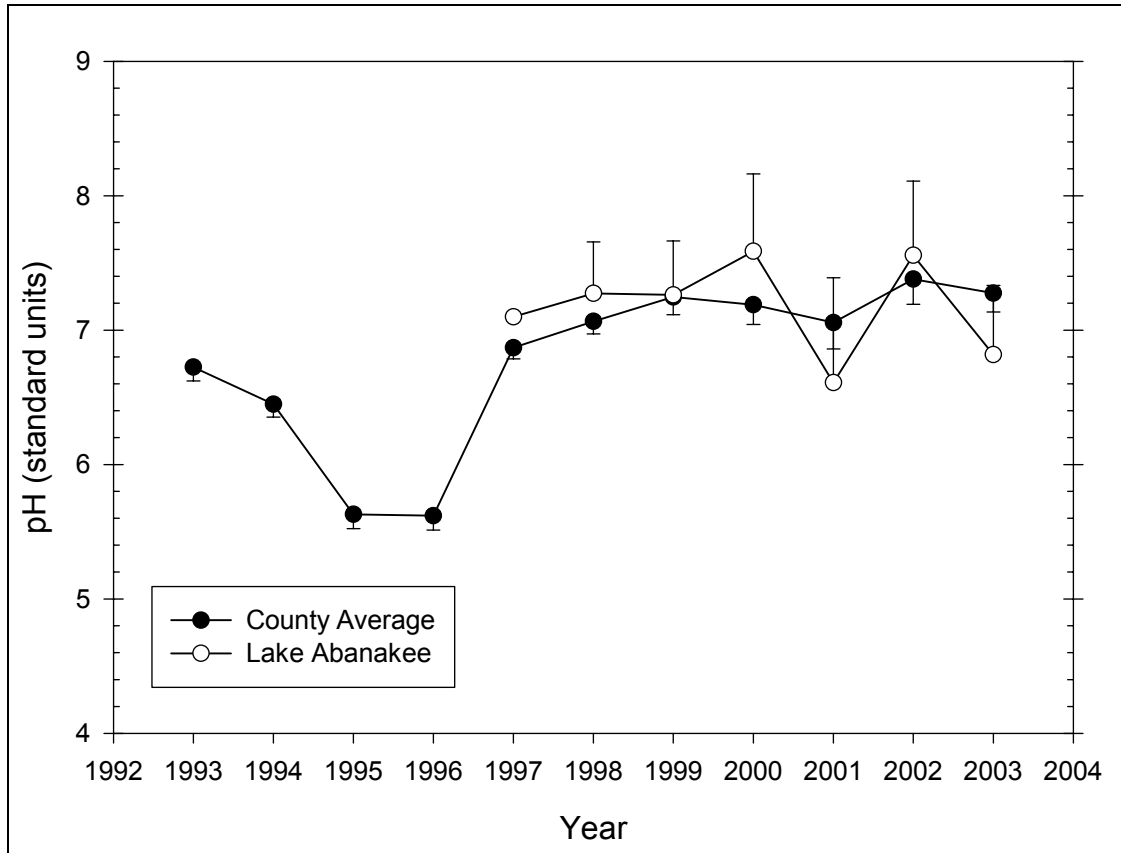


Figure 74 Seasonal mean pH trend in Lake Abanakee

Table 57 – Descriptive Statistics for pH in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	4	3	7.100	--	--	--
1998	6	0	7.273	0.365	0.149	0.383
1999	5	0	7.262	0.324	0.145	0.402
2000	6	0	7.587	0.548	0.224	0.575
2001	5	0	6.610	0.628	0.281	0.779
2002	5	0	7.556	0.445	0.199	0.553
2003	4	0	6.817	0.324	0.162	0.515
Year	Range	Max	Min	Median	25%	75%
1997	0.000	7.100	7.100	7.100	7.100	7.100
1998	0.850	7.790	6.940	7.175	6.970	7.590
1999	0.900	7.710	6.810	7.230	7.103	7.448
2000	1.680	8.340	6.660	7.615	7.500	7.790
2001	1.530	7.600	6.070	6.590	6.070	6.940
2002	1.070	8.030	6.960	7.720	7.163	7.887
2003	0.620	7.150	6.530	6.795	6.540	7.095
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	7.100	50.410
1998	0.496	-1.922	0.289	0.122	43.640	318.074
1999	-0.0216	1.335	0.224	0.480	36.310	264.103
2000	-0.652	1.973	0.271	0.183	45.520	346.848

2001	1.107	1.108	0.230	0.448	33.050	220.036
2002	-0.531	-1.804	0.244	0.381	37.780	286.259
2003	0.0958	-5.413	0.296	0.241	27.270	186.227

Alkalinity

Figure 75 presents the seasonal mean alkalinity trend in Lake Abanakee, while Table 58 presents descriptive statistics for alkalinity in Lake Abanakee. The alkalinity in Lake Abanakee exhibited a decreasing trend from 1999 to 2002, with an increase to 1999 levels in 2003. The alkalinity in Lake Abanakee was lower than the county average, though this difference may not be statistically significant for all years.

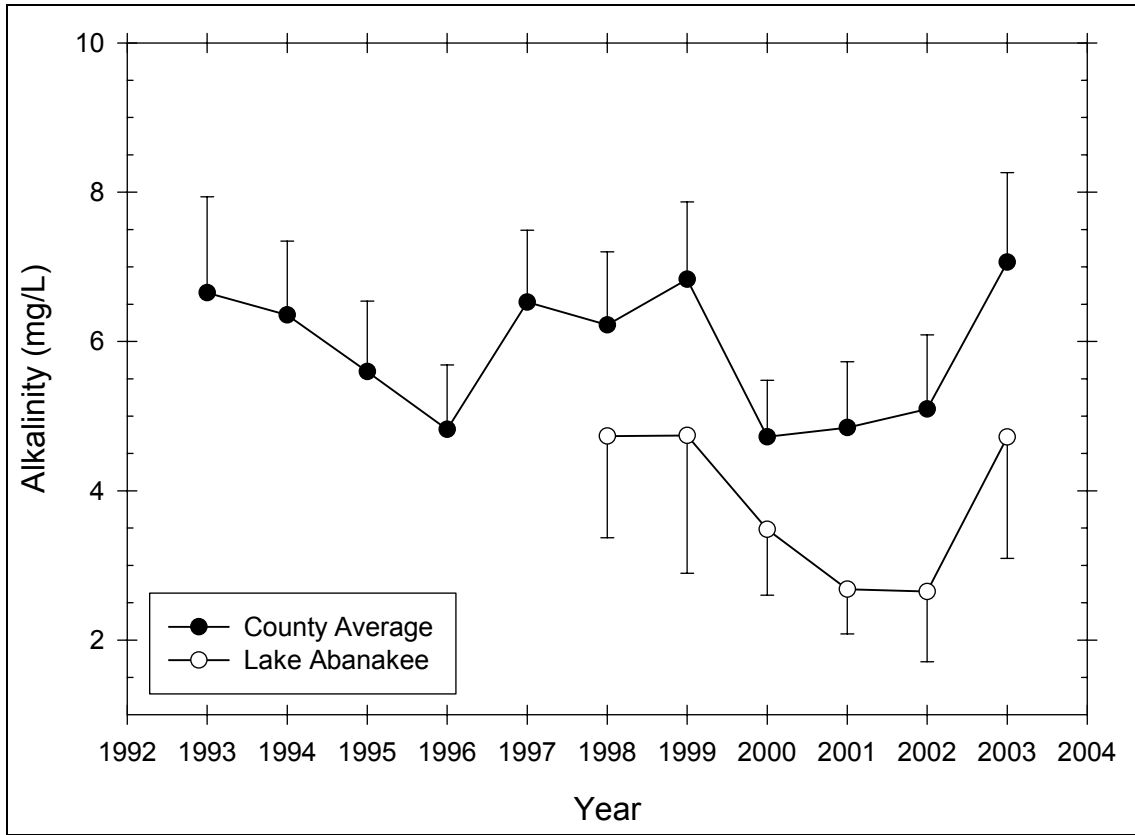


Figure 75 Seasonal mean alkalinity trend in Lake Abanakee

Table 58 – Descriptive Statistics for Alkalinity in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1998	6	0	4.733	1.299	0.530	1.363
1999	6	1	4.740	1.488	0.665	1.847
2000	6	0	3.483	0.840	0.343	0.882
2001	6	1	2.680	0.482	0.215	0.598
2002	6	2	2.650	0.592	0.296	0.941
2003	6	1	4.720	1.308	0.585	1.625
Year	Range	Max	Min	Median	25%	75%
1998	3.500	6.600	3.100	4.750	3.600	5.600

1999	4.100	6.900	2.800	4.700	3.850	5.550
2000	2.500	4.700	2.200	3.500	3.100	3.900
2001	1.100	3.200	2.100	2.700	2.250	3.125
2002	1.200	3.300	2.100	2.600	2.150	3.150
2003	3.300	6.700	3.400	4.700	3.625	5.500
	1.100	25.700	24.600	25.050	24.700	25.500
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1998	0.185	-0.959	0.142	0.764	28.400	142.860
1999	0.337	1.197	0.204	0.577	23.700	121.190
2000	-0.148	0.721	0.157	0.732	20.900	76.330
2001	-0.132	-2.467	0.208	0.558	13.400	36.840
2002	0.193	-4.629	0.277	0.316	10.600	29.140
2003	0.829	0.320	0.186	0.656	23.600	118.240

Total Phosphorus

Figure 76 presents the seasonal mean total phosphorus trend in Lake Abanakee, while Table 59 presents descriptive statistics for total phosphorus in Lake Abanakee. The total phosphorus in Lake Abanakee exhibited a decreasing trend from 1999 to 2002. The total phosphorus in Lake Abanakee was slightly higher than or similar to the county average, though this difference was not statistically significant.

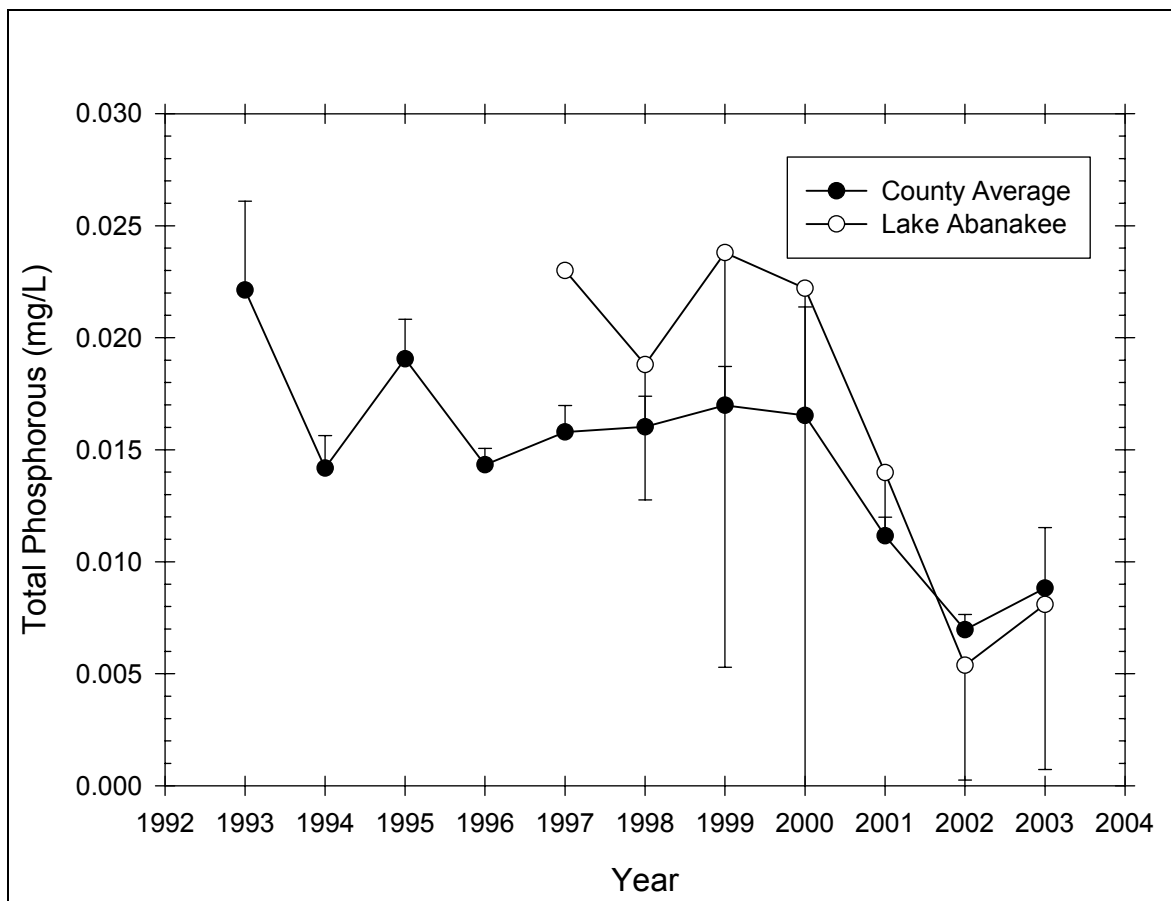


Figure 76 Seasonal mean total phosphorus trend in Lake Abanakee

Table 59 – Descriptive Statistics for Total Phosphorus in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	4	3	0.0230	--	--	--
1998	6	1	0.0188	0.00487	0.00218	0.00604
1999	6	1	0.0238	0.0149	0.00667	0.0185
2000	6	0	0.0222	0.0222	0.00904	0.0232
2001	6	1	0.0140	0.00239	0.00107	0.00297
2002	6	2	0.00538	0.00322	0.00161	0.00512
2003	6	1	0.00810	0.00594	0.00266	0.00737
Year	Range	Max	Min	Median	25%	75%
1997	0.000	0.0230	0.0230	0.0230	0.0230	0.0230
1998	0.0120	0.0260	0.0140	0.0180	0.0147	0.0222
1999	0.0350	0.0500	0.0150	0.0160	0.0158	0.0290
2000	0.0590	0.0650	0.00600	0.0135	0.00920	0.0260
2001	0.00590	0.0169	0.0110	0.0149	0.0118	0.0155
2002	0.00740	0.00920	0.00180	0.00525	0.00285	0.00790
2003	0.0137	0.0151	0.00140	0.00830	0.00260	0.0133
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	0.0230	0.000529
1998	0.787	-0.321	0.182	0.668	0.0940	0.00186
1999	2.057	4.269	0.348	0.047	0.119	0.00372
2000	1.933	3.855	0.265	0.204	0.133	0.00541
2001	-0.195	-1.635	0.250	0.350	0.0699	0.00100
2002	0.178	-1.568	0.177	0.690	0.0215	0.000147
2003	0.0138	-2.434	0.205	0.575	0.0405	0.000469

Nitrate

Figure 77 presents the seasonal mean nitrate trend in Lake Abanakee, while Table 60 presents descriptive statistics for nitrate in Lake Abanakee. The nitrate in Lake Abanakee exhibited a decreasing trend from 1998 to 2003. The nitrate in Lake Abanakee was generally similar to the county average.

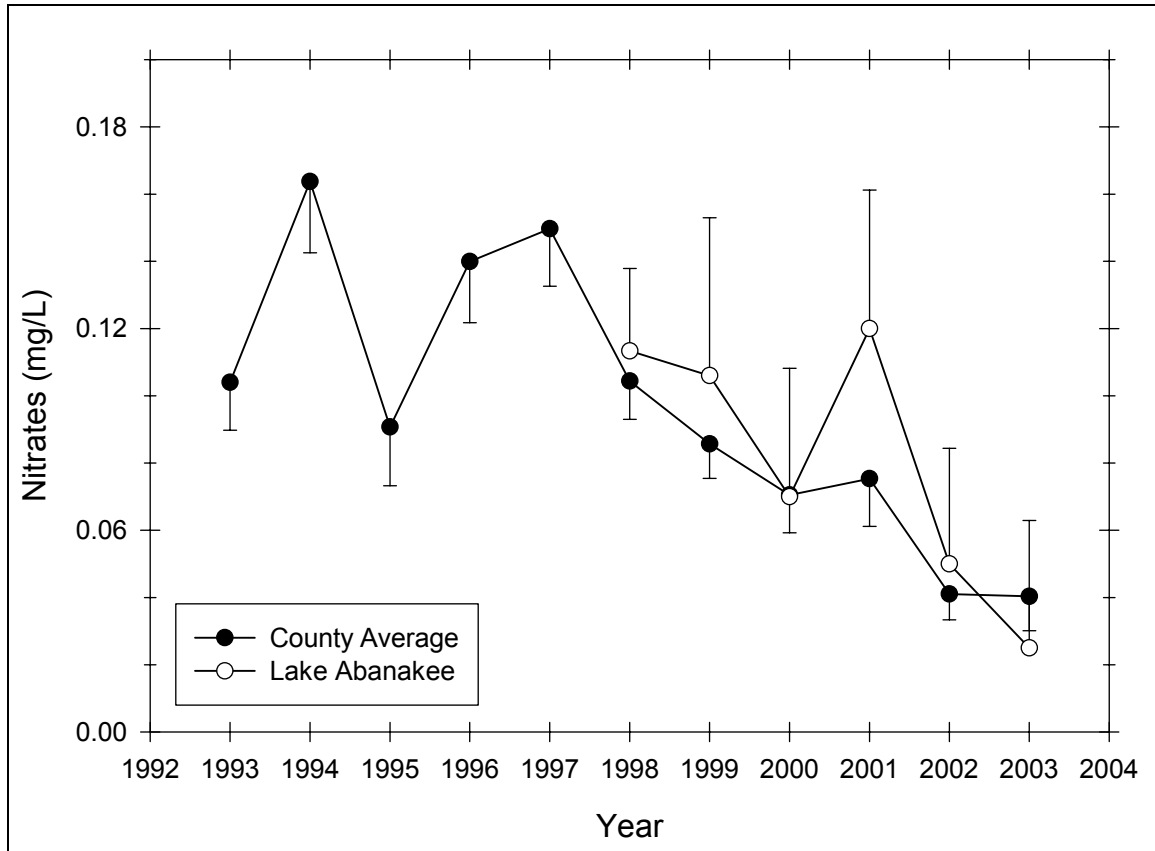


Figure 77 Seasonal mean nitrate trend in Lake Abanakee

Table 60 – Descriptive Statistics for Nitrate in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1998	6	0	0.113	0.0234	0.00955	0.0245
1999	6	1	0.106	0.0378	0.0169	0.0470
2000	6	0	0.0700	0.0363	0.0148	0.0381
2001	6	1	0.120	0.0332	0.0148	0.0412
2002	6	2	0.0500	0.0216	0.0108	0.0344
2003	6	2	0.0250	0.0238	0.0119	0.0379
Year	Range	Max	Min	Median	25%	75%
1998	0.0600	0.140	0.0800	0.120	0.0900	0.130
1999	0.0900	0.160	0.0700	0.0900	0.0775	0.138
2000	0.1000	0.120	0.0200	0.0700	0.0500	0.0900
2001	0.0700	0.150	0.0800	0.130	0.0875	0.150
2002	0.0500	0.0800	0.0300	0.0450	0.0350	0.0650
2003	0.0500	0.0500	0.000	0.0250	0.00500	0.0450
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1998	-0.600	-1.289	0.279	0.154	0.680	0.0798
1999	0.793	-1.253	0.264	0.285	0.530	0.0619
2000	6.328E-016	-0.971	0.209	0.492	0.420	0.0360
2001	-0.411	-2.835	0.218	0.509	0.600	0.0764
2002	1.190	1.500	0.250	0.432	0.200	0.0114
2003	5.921E-016	-4.339	0.236	0.495	0.1000	0.00420

Chlorophyll a

Figure 78 presents the seasonal mean chlorophyll *a* trend in Lake Abanakee, while Table 61 presents descriptive statistics for chlorophyll *a* in Lake Abanakee. The chlorophyll *a* in Lake Abanakee exhibited no specific trend. The chlorophyll *a* in Lake Abanakee was slightly higher than the county average, though this difference was not statistically significant.

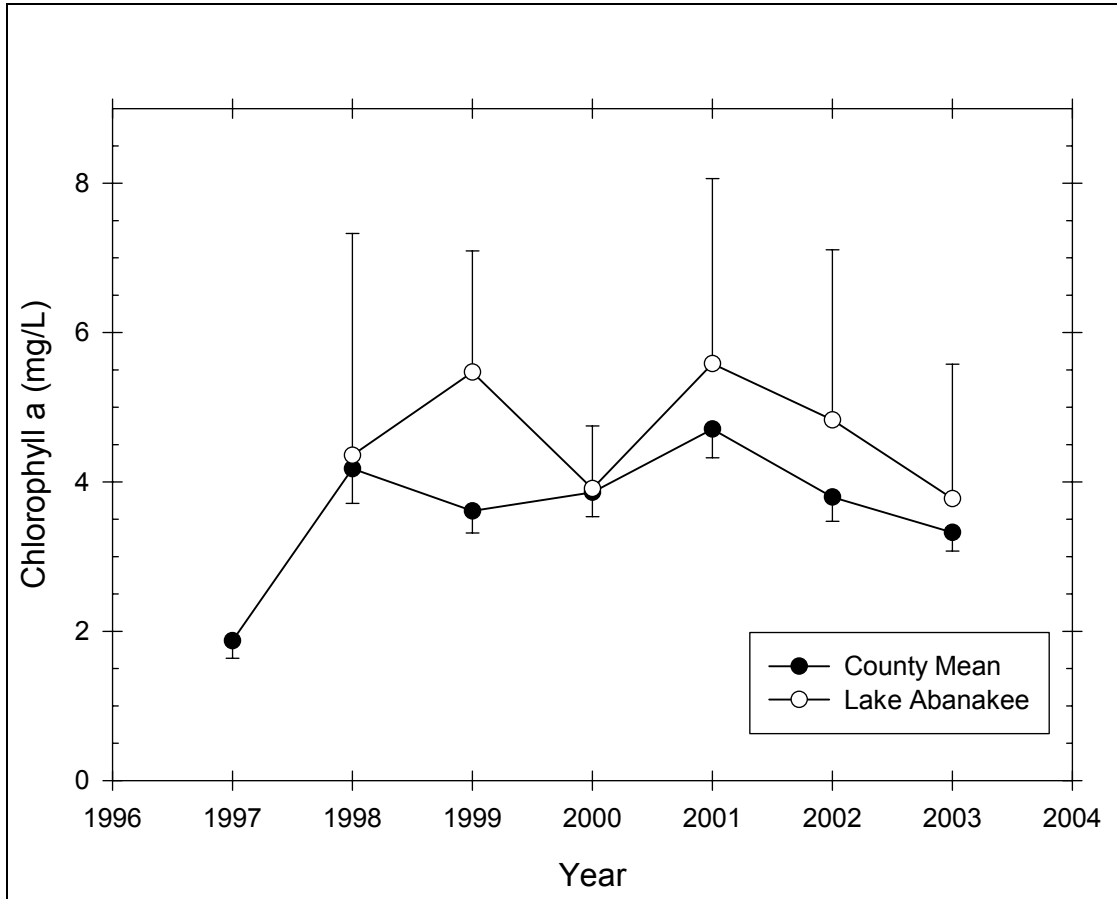


Figure 78 Seasonal mean chlorophyll a trend in Lake Abanakee

Table 61 – Descriptive Statistics for Chlorophyll a in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1998	6	0	4.357	2.831	1.156	2.971
1999	6	1	5.470	1.307	0.584	1.622
2000	6	1	3.910	0.678	0.303	0.842
2001	6	1	5.584	1.997	0.893	2.479
2002	6	2	4.830	1.433	0.716	2.279
2003	6	2	3.775	1.131	0.566	1.800
Year	Range	Max	Min	Median	25%	75%
1998	7.070	8.800	1.730	3.475	2.110	6.550
1999	3.040	7.080	4.040	5.670	4.205	6.495
2000	1.530	4.710	3.180	3.980	3.248	4.485
2001	5.070	8.790	3.720	4.790	4.282	6.810

2002	3.060	6.780	3.720	4.410	3.755	5.905
2003	2.520	4.780	2.260	4.030	2.920	4.630
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1998	0.821	-0.816	0.247	0.283	26.140	153.959
1999	0.0107	-2.203	0.223	0.487	27.350	156.434
2000	-0.0185	-2.527	0.227	0.463	19.550	78.278
2001	1.297	1.421	0.255	0.328	27.920	171.850
2002	1.118	0.0745	0.266	0.361	19.320	99.472
2003	-0.975	-0.203	0.233	0.505	15.100	60.843

Transparency

Figure 79 presents the seasonal mean transparency trend in Lake Abanakee, while Table 62 presents descriptive statistics for transparency in Lake Abanakee. The transparency in Lake Abanakee exhibited a decreasing trend from 1998 to 2001, followed by somewhat higher values in 2002 and 2003. The transparency in Lake Abanakee was significantly lower than the county average, though this difference may not be statistically significant for all years.

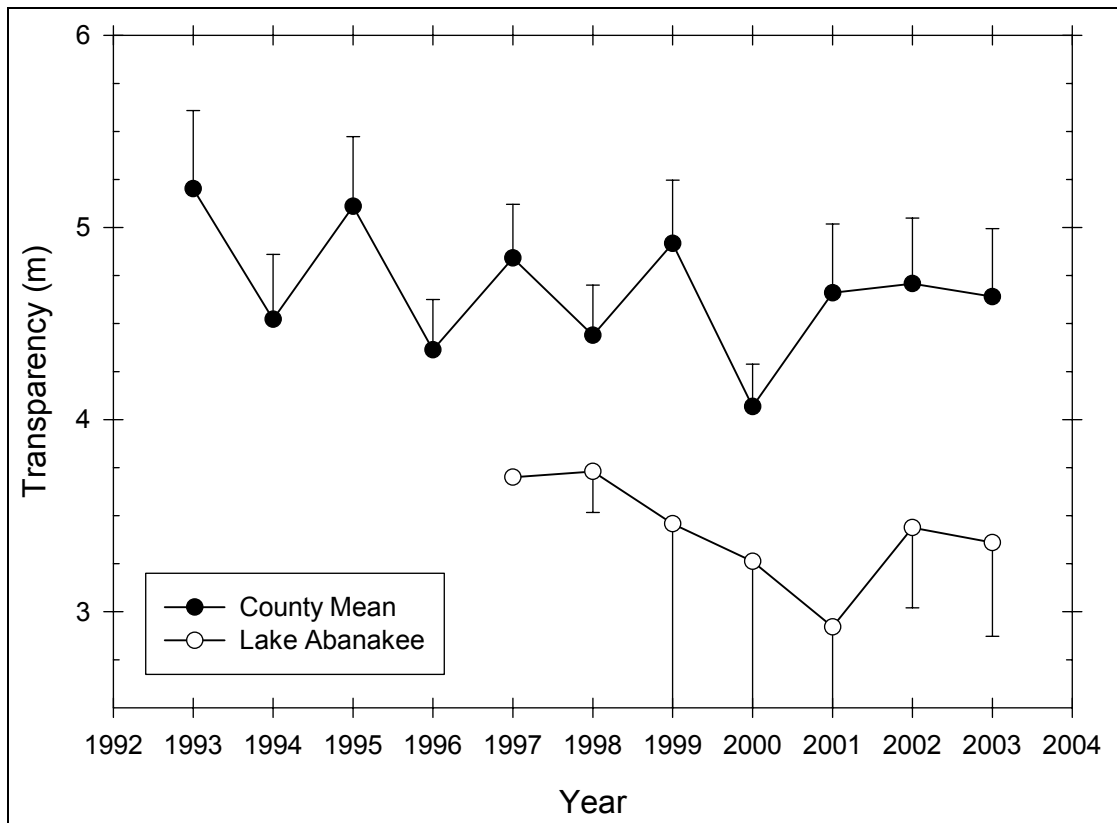


Figure 79 Seasonal mean transparency trend in Lake Abanakee

Table 62 – Descriptive Statistics for Transparency in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	4	3	3.700	--	--	--
1998	6	1	3.730	0.172	0.0767	0.213
1999	5	0	3.458	0.863	0.386	1.072
2000	6	0	3.262	0.730	0.298	0.767
2001	5	0	2.920	0.867	0.388	1.077
2002	4	0	3.438	0.263	0.131	0.418
2003	4	0	3.360	0.307	0.153	0.488
Year	Range	Max	Min	Median	25%	75%
1997	0.000	3.700	3.700	3.700	3.700	3.700
1998	0.430	3.900	3.470	3.800	3.605	3.848
1999	1.980	4.500	2.520	3.200	2.768	4.290
2000	2.150	4.300	2.150	3.210	3.000	3.700
2001	1.800	3.800	2.000	3.200	2.000	3.650
2002	0.600	3.800	3.200	3.375	3.250	3.625
2003	0.700	3.620	2.920	3.450	3.160	3.560
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	3.700	13.690
1998	-0.975	0.0277	0.258	0.310	18.650	69.682
1999	0.328	-2.534	0.217	0.514	17.290	62.771
2000	-0.155	0.477	0.193	0.578	19.570	66.499
2001	-0.345	-3.021	0.256	0.323	14.600	45.640
2002	1.165	1.085	0.231	0.515	13.750	47.473
2003	-1.496	2.464	0.302	0.219	13.440	45.441

TSI

Figure 80 presents the Carlson trophic state index trend in Lake Abanakee. For the period of record, chlorophyll a TSI was in the eutrophic range, transparency TSI was in the mesotrophic range, and total phosphorus TSI was generally mesotrophic from 1997 to 2001, and oligotrophic in 2002 and 2003.

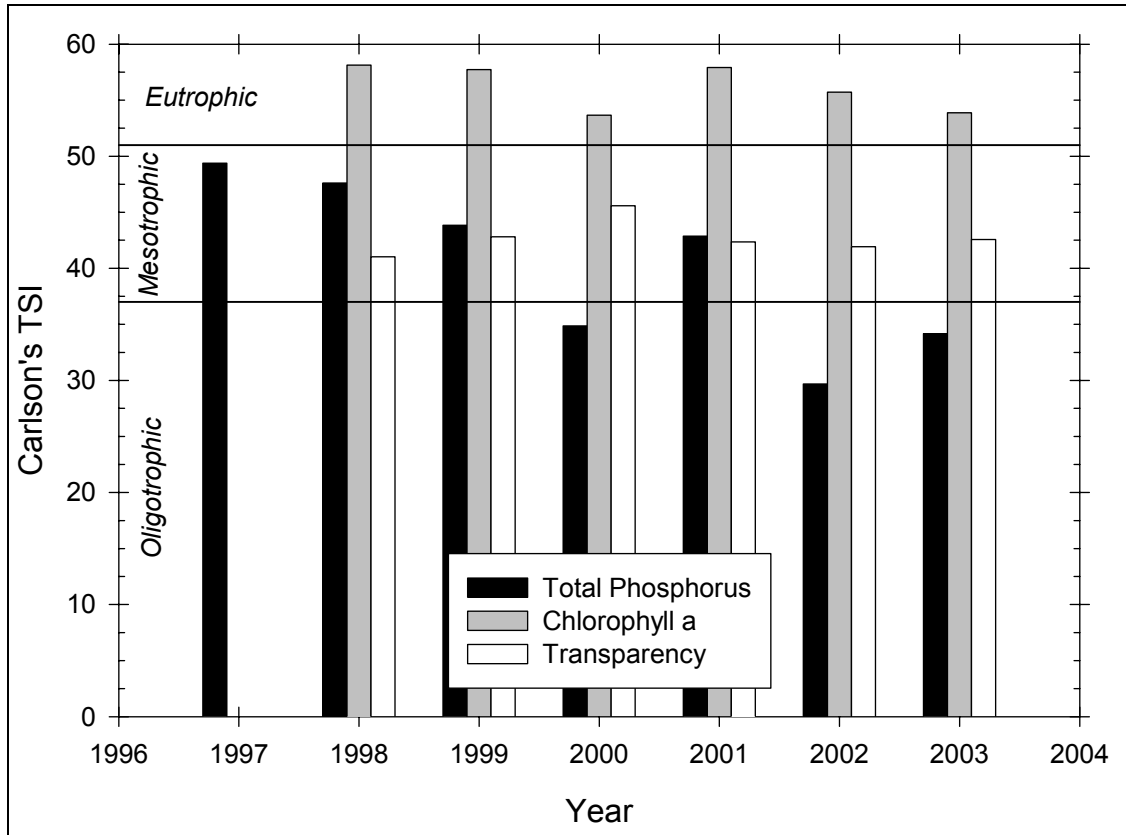


Figure 80 Carlson TSI trend in Lake Abanakee

Aluminum

Figure 81 presents the seasonal mean aluminum trend in Lake Abanakee, while Table 63 presents descriptive statistics for aluminum in Lake Abanakee. The aluminum in Lake Abanakee exhibited a decreasing trend from 2001 to 2003. The aluminum in Lake Abanakee was similar to the county average.

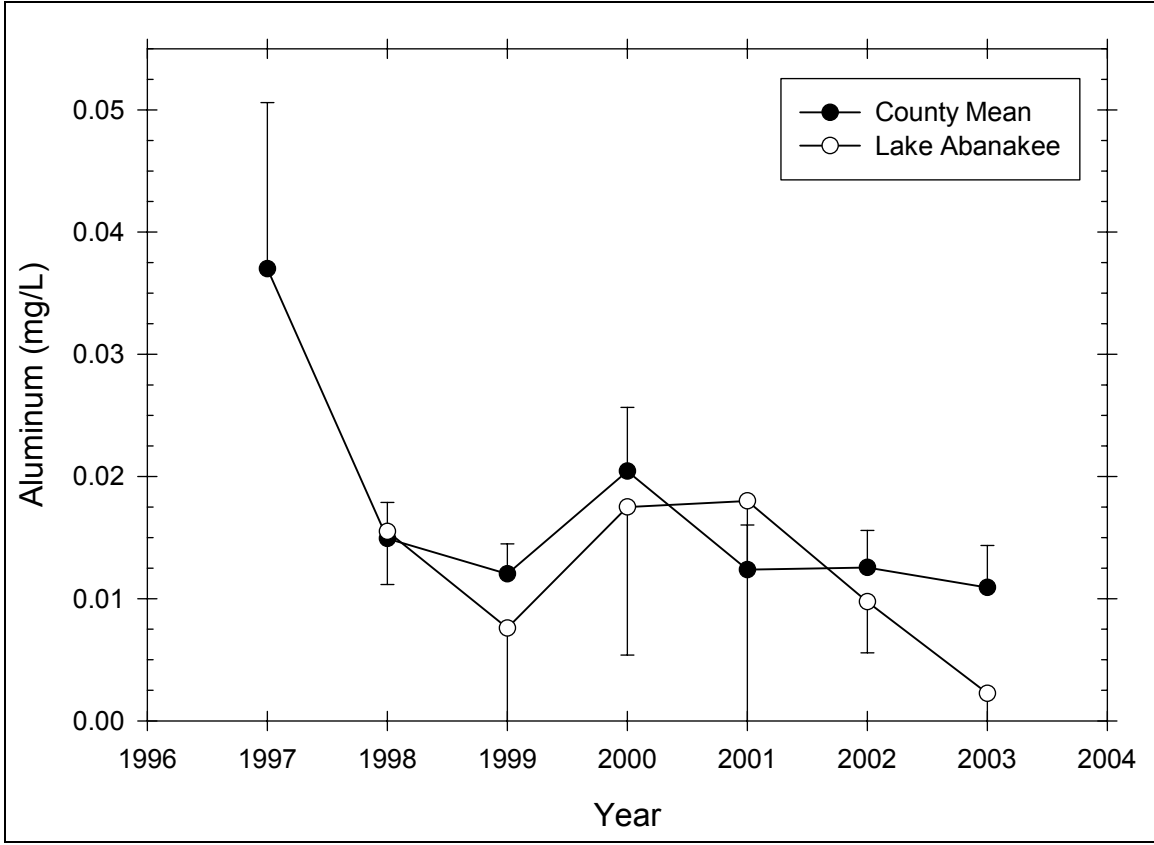


Figure 81 Seasonal mean aluminum trend in Lake Abanakee

Table 63 – Descriptive Statistics for Aluminum in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1998	6	0	0.0155	0.00414	0.00169	0.00434
1999	6	1	0.00760	0.00615	0.00275	0.00763
2000	6	0	0.0175	0.0116	0.00472	0.0121
2001	6	1	0.0180	0.0155	0.00691	0.0192
2002	6	2	0.00975	0.00263	0.00131	0.00418
2003	6	2	0.00225	0.00263	0.00131	0.00418
Year	Range	Max	Min	Median	25%	75%
1998	0.0120	0.0200	0.00800	0.0160	0.0150	0.0180
1999	0.0150	0.0180	0.00300	0.00700	0.00300	0.00975
2000	0.0360	0.0370	0.001000	0.0170	0.0140	0.0190
2001	0.0370	0.0420	0.00500	0.00900	0.00800	0.0293
2002	0.00600	0.0120	0.00600	0.0105	0.00800	0.0115
2003	0.00500	0.00500	0.000	0.00200	0.000	0.00450
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1998	-1.324	2.412	0.285	0.133	0.0930	0.00153
1999	1.667	3.018	0.339	0.062	0.0380	0.000440
2000	0.561	2.346	0.282	0.144	0.105	0.00250
2001	1.185	0.225	0.320	0.098	0.0900	0.00258
2002	-1.443	2.235	0.288	0.271	0.0390	0.000401
2003	0.124	-5.290	0.304	0.212	0.00900	0.0000410

Calcium

Figure 82 presents the seasonal mean calcium trend in Lake Abanakee, while Table 64 presents descriptive statistics for calcium in Lake Abanakee. The calcium in Lake Abanakee was generally stable throughout the study period. The calcium in Lake Abanakee was significantly lower than the county average, though this difference may not be statistically significant.

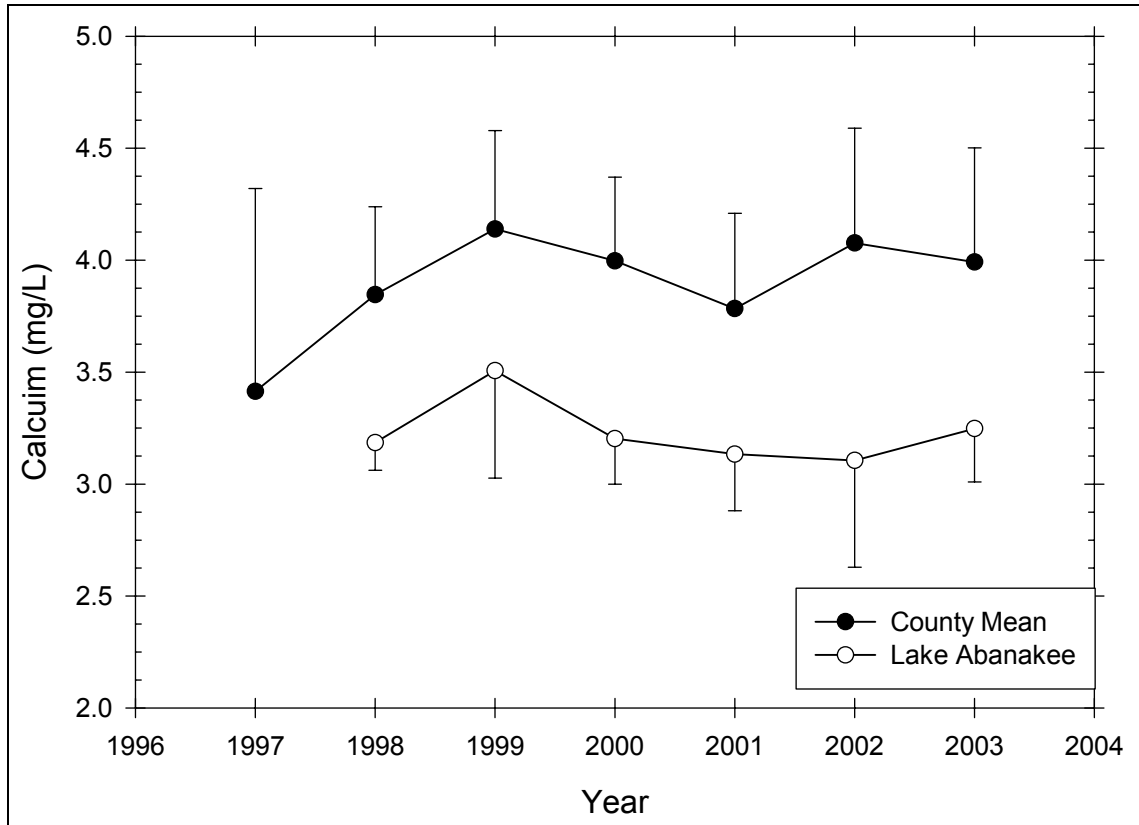


Figure 82 Seasonal mean calcium trend in Lake Abanakee

Table 64 – Descriptive Statistics for Calcium in Lake Abanakee

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1998	6	0	3.185	0.118	0.0481	0.124
1999	6	1	3.506	0.386	0.173	0.479
2000	6	0	3.203	0.194	0.0791	0.203
2001	6	1	3.134	0.204	0.0914	0.254
2002	6	2	3.105	0.300	0.150	0.477
2003	6	2	3.248	0.150	0.0750	0.239
Year	Range	Max	Min	Median	25%	75%
1998	0.310	3.420	3.110	3.140	3.120	3.180
1999	0.990	3.880	2.890	3.510	3.325	3.805
2000	0.510	3.390	2.880	3.225	3.110	3.390
2001	0.540	3.350	2.810	3.180	3.020	3.268
2002	0.700	3.380	2.680	3.180	2.915	3.295
2003	0.350	3.440	3.090	3.230	3.135	3.360

Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1998	2.217	5.066	0.350	0.020	19.110	60.935
1999	-1.167	1.535	0.263	0.290	17.530	62.056
2000	-0.878	0.416	0.168	0.697	19.220	61.756
2001	-1.111	1.569	0.215	0.527	15.670	49.277
2002	-1.356	2.414	0.310	0.193	12.420	38.833
2003	0.584	-0.253	0.174	0.695	12.990	42.252

Calcite Saturation Index

Figure 82 presents the calcite saturation index trend in Lake Abanakee. The CSI in Lake Abanakee exhibited no particular trend. The CSI trend in Lake Abanakee did not resemble the county average trend.

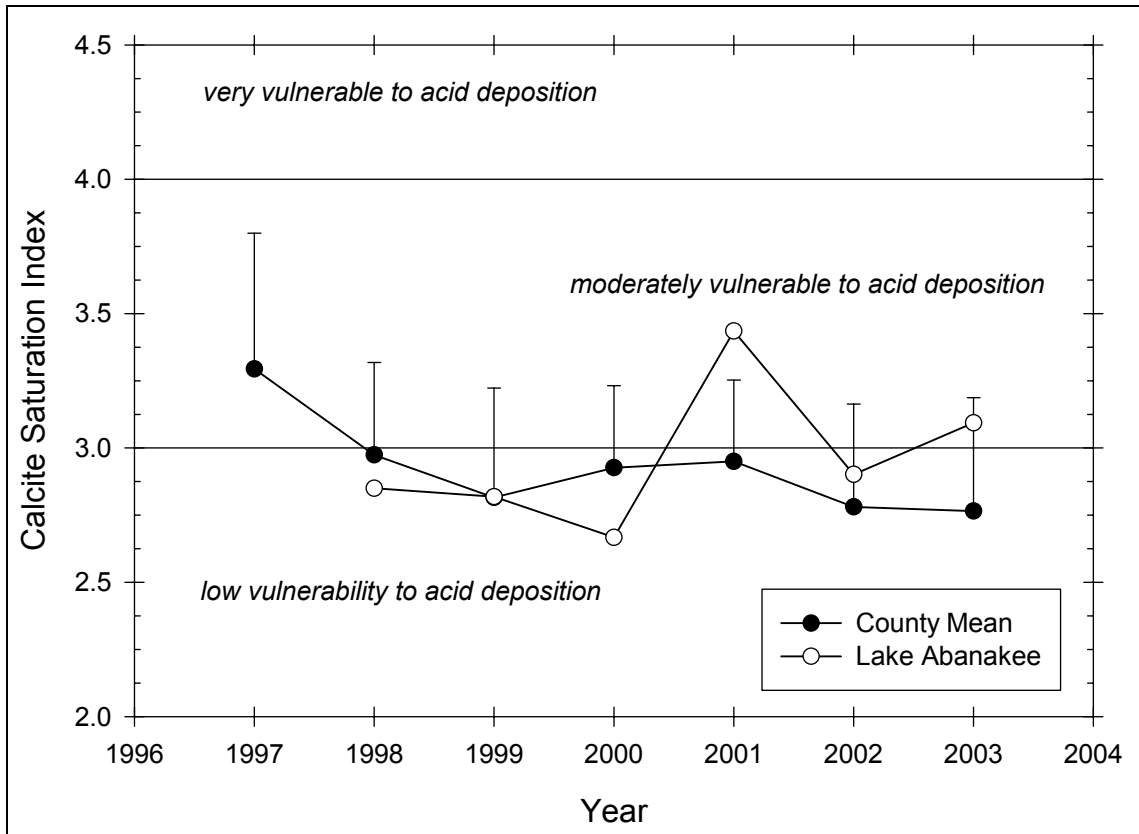


Figure 83 Seasonal mean CSI trend in Lake Abanakee