

Piseco Lake

Location

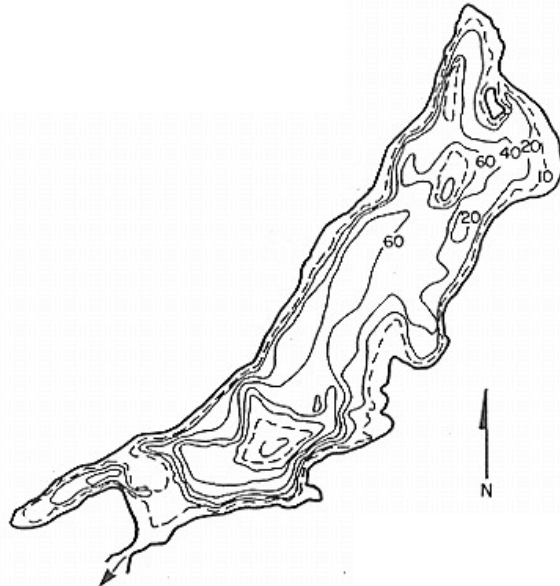
Pond Number: 050234
Watershed: Upper Hudson River
County: Hamilton
Topographic Quadrangle: Piseco Lake

Sample Site

Latitude: 43° 23.860'
Longitude: 74° 33.334'

Morphometry

Surface Area: 2,842 Ac.
Mean Depth: 58 Ft.
Maximum Depth: 125 Ft.
Volume: 164,836 Ac./Ft.
Watershed Area: 38,023 Ac.
Hydraulic Retention Time: 1.5 Yr.
Shoreline Length: 21.3 Mi.
Elevation: 1,661 Ft.
Water Quality Classification: B
Trophic State: Mesotrophic



Temperature and Dissolved Oxygen

Piseco Lake had a minimum DO of 2.7 mg/L (October 2000), with a minimum temperature of 4.8°C and a maximum temperature of 24.0°C.

pH

Figure 164 presents the seasonal mean pH trend in Piseco Lake, while Table 129 presents descriptive statistics for pH in Piseco Lake. The pH in Piseco Lake exhibited an increasing trend from 1995 to 2003, with a dip in pH between 1999 and 2002. The pH in Piseco Lake was fairly similar to the county average, with some variation.

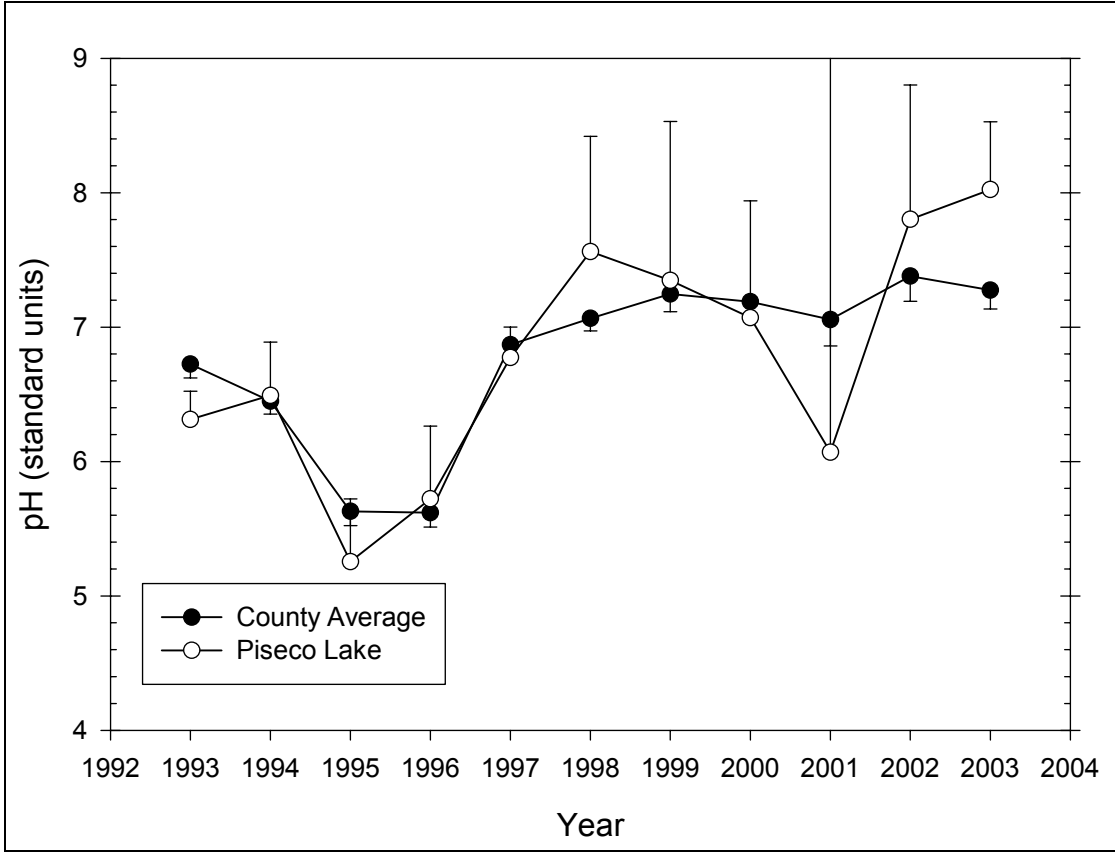


Figure 164 Seasonal mean pH trend in Piseco Lake

Table 129 – Descriptive Statistics for pH in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	6.314	0.169	0.0756	0.210
1994	6	0	6.492	0.378	0.154	0.397
1995	6	0	5.255	0.445	0.182	0.467
1996	6	0	5.722	0.516	0.211	0.542
1997	6	0	6.773	0.217	0.0887	0.228
1998	6	0	7.562	0.818	0.334	0.858
1999	5	0	7.348	0.953	0.426	1.183
2000	6	0	7.070	0.828	0.338	0.869
2001	5	0	6.070	3.438	1.538	4.269
2002	4	0	7.803	0.628	0.314	1.000
2003	5	0	8.024	0.406	0.182	0.504
Year	Range	Max	Min	Median	25%	75%
1993	0.420	6.440	6.020	6.380	6.253	6.410
1994	1.100	7.170	6.070	6.420	6.260	6.610
1995	1.270	5.700	4.430	5.400	5.120	5.480
1996	1.390	6.520	5.130	5.615	5.340	6.110
1997	0.580	6.950	6.370	6.865	6.690	6.900
1998	2.410	8.640	6.230	7.535	7.300	8.130
1999	2.190	8.680	6.490	6.860	6.640	8.185
2000	2.400	8.430	6.030	7.040	6.550	7.330
2001	8.240	8.240	0.000	7.450	5.070	7.985

2002	1.370	8.260	6.890	8.030	7.390	8.215
2003	1.130	8.640	7.510	7.990	7.810	8.213
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	-1.939	3.932	0.338	0.064	31.570	199.447
1994	1.249	2.166	0.242	0.311	38.950	253.566
1995	-1.562	2.797	0.294	0.108	31.530	166.680
1996	0.640	-0.587	0.166	0.703	34.330	197.758
1997	-1.650	2.541	0.270	0.187	40.640	275.504
1998	-0.517	0.960	0.208	0.498	45.370	346.416
1999	0.787	-1.730	0.296	0.163	36.740	273.599
2000	0.662	0.723	0.210	0.485	42.420	303.337
2001	-2.095	4.477	0.380	0.018	30.350	231.508
2002	-1.649	2.648	0.305	0.207	31.210	244.701
2003	0.600	1.826	0.255	0.326	40.120	322.583

Alkalinity

Figure 165 presents the seasonal mean alkalinity trend in Piseco Lake, while Table 130 presents descriptive statistics for alkalinity in Piseco Lake. The alkalinity in Piseco Lake was variable but relatively stable throughout the period of record. The alkalinity in Piseco Lake was significantly lower than the county average, though this difference may not be statistically significant for some years.

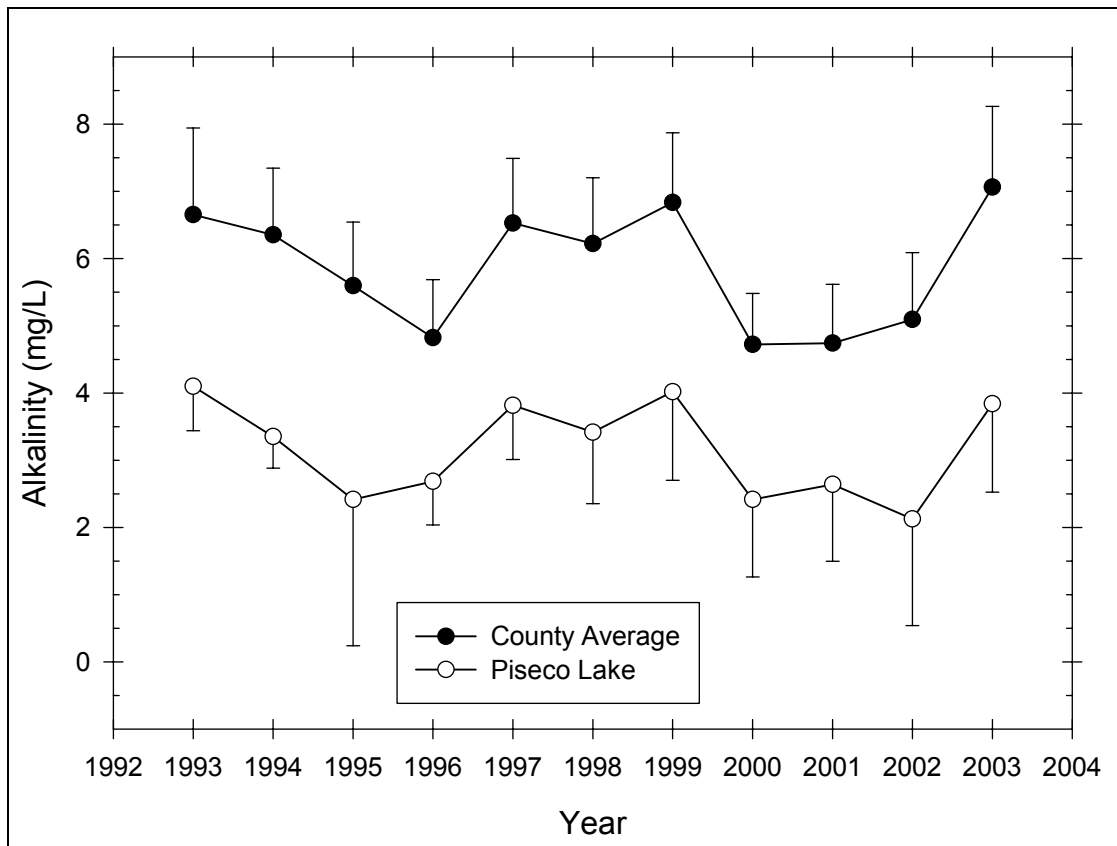


Figure 165 Seasonal alkalinity trend in Piseco Lake (outlier of 11.16 corrected to 1.6)

Table 130 – Descriptive Statistics for Alkalinity in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	4.100	0.534	0.239	0.663
1994	6	0	3.350	0.446	0.182	0.468
1995	6	0	2.417	2.076	0.848	2.179
1996	6	0	2.683	0.618	0.252	0.648
1997	6	0	3.817	0.768	0.313	0.806
1998	6	0	3.417	1.013	0.413	1.063
1999	6	1	4.020	1.062	0.475	1.318
2000	6	0	2.417	1.100	0.449	1.154
2001	6	1	2.640	0.921	0.412	1.143
2002	6	2	2.125	0.998	0.499	1.588
2003	6	1	3.840	1.060	0.474	1.316
Year	Range	Max	Min	Median	25%	75%
1993	1.300	4.800	3.500	3.900	3.725	4.575
1994	1.300	4.200	2.900	3.200	3.200	3.400
1995	4.900	4.100	-0.800	3.250	0.600	4.100
1996	1.600	3.500	1.900	2.700	2.100	3.200
1997	2.000	4.700	2.700	4.000	3.100	4.400
1998	2.500	4.700	2.200	3.100	2.800	4.600
1999	2.700	5.000	2.300	4.300	3.425	4.775
2000	2.900	3.100	0.200	2.800	2.600	3.000
2001	2.400	3.700	1.300	2.900	1.975	3.250
2002	2.400	3.200	0.800	2.250	1.450	2.800
2003	2.200	5.000	2.800	3.600	2.875	4.925
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	0.427	-1.767	0.246	0.369	20.500	85.190
1994	1.734	3.729	0.298	0.098	20.100	68.330
1995	-0.888	-1.017	0.263	0.215	14.500	56.590
1996	0.00565	-1.403	0.161	0.722	16.100	45.110
1997	-0.570	-1.125	0.261	0.221	22.900	90.350
1998	0.477	-1.565	0.251	0.265	20.500	75.170
1999	-1.331	1.740	0.218	0.511	20.100	85.310
2000	-2.312	5.481	0.400	0.003	14.500	41.090
2001	-0.632	-0.0500	0.211	0.545	13.200	38.240
2002	-0.713	1.368	0.240	0.476	8.500	21.050
2003	0.274	-3.017	0.241	0.392	19.200	78.220

Total Phosphorus

Figure 166 presents the seasonal mean total phosphorus trend in Piseco Lake, while Table 131 presents descriptive statistics for total phosphorus in Piseco Lake. The total phosphorus in Piseco Lake exhibited a general decreasing trend from 1993 to 2002, with an elevated total phosphorus in 2003. The total phosphorus in Piseco Lake was similar to the county average, except for the higher value in 2003.

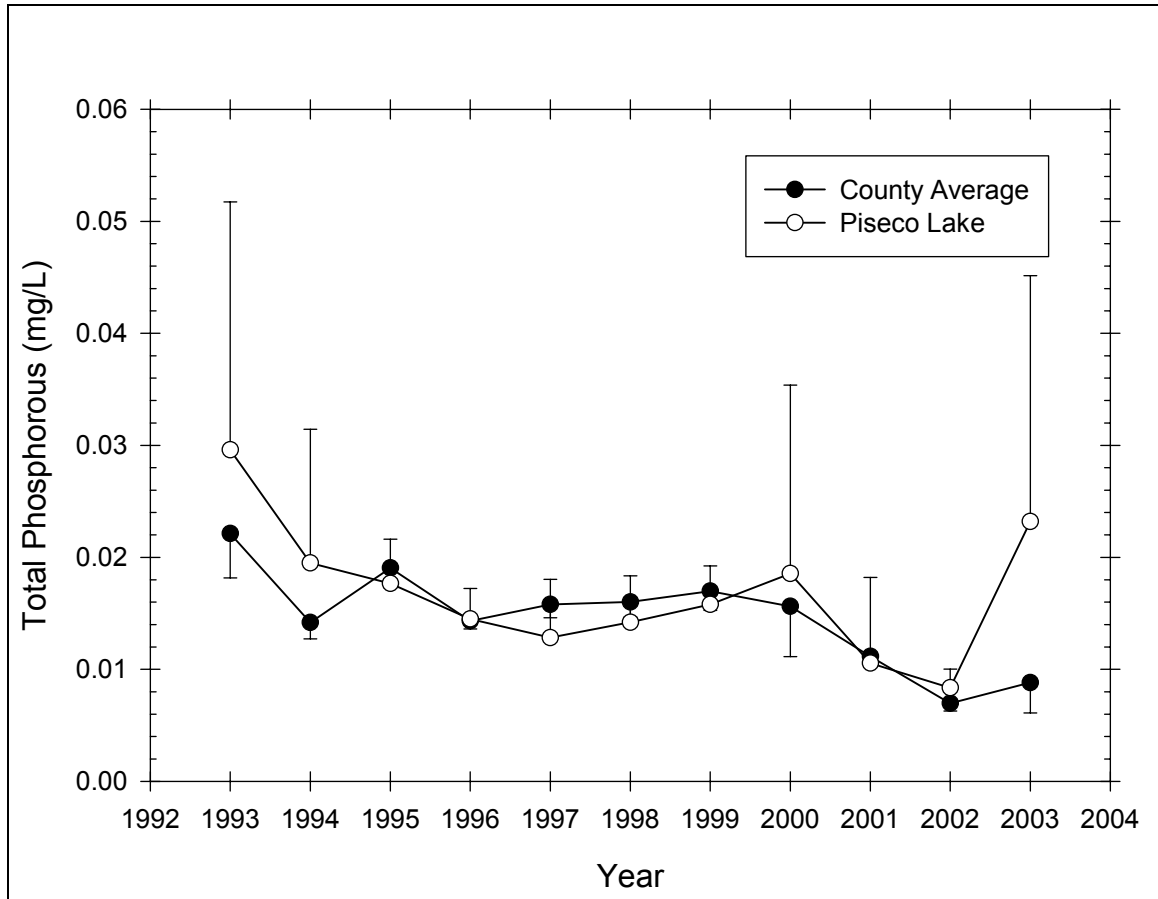


Figure 166 Seasonal mean total phosphorus trend in Piseco Lake

Table 131 – Descriptive Statistics for Total Phosphorus in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	0.0296	0.0178	0.00797	0.0221
1994	6	0	0.0195	0.0114	0.00464	0.0119
1995	6	0	0.0177	0.00378	0.00154	0.00396
1996	6	0	0.0145	0.00259	0.00106	0.00272
1997	6	0	0.0128	0.00496	0.00202	0.00520
1998	5	0	0.0142	0.00335	0.00150	0.00416
1999	6	1	0.0158	0.00277	0.00124	0.00345
2000	6	0	0.0186	0.0160	0.00655	0.0168
2001	6	1	0.0106	0.00617	0.00276	0.00766
2002	6	2	0.00835	0.00105	0.000524	0.00167
2003	6	1	0.0232	0.0177	0.00790	0.0219
Year	Range	Max	Min	Median	25%	75%
1993	0.0470	0.0590	0.0120	0.0250	0.0187	0.0380
1994	0.0300	0.0420	0.0120	0.0160	0.0120	0.0190
1995	0.0110	0.0240	0.0130	0.0175	0.0150	0.0190
1996	0.00700	0.0170	0.01000	0.0145	0.0140	0.0170
1997	0.0140	0.0170	0.00300	0.0140	0.0140	0.0150
1998	0.00800	0.0200	0.0120	0.0130	0.0120	0.0155
1999	0.00700	0.0200	0.0130	0.0150	0.0138	0.0178
2000	0.0420	0.0430	0.001000	0.0125	0.00930	0.0330

2001	0.0160	0.0210	0.00500	0.00940	0.00673	0.0128
2002	0.00240	0.00970	0.00730	0.00820	0.00755	0.00915
2003	0.0441	0.0531	0.00900	0.0163	0.0120	0.0317
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	1.414	2.508	0.269	0.264	0.148	0.00565
1994	2.135	4.799	0.351	0.020	0.117	0.00293
1995	0.755	1.100	0.195	0.567	0.106	0.00194
1996	-1.038	1.366	0.257	0.240	0.0870	0.00130
1997	-2.128	4.976	0.426	0.001	0.0770	0.00111
1998	1.913	3.764	0.324	0.094	0.0710	0.00105
1999	0.927	0.130	0.213	0.534	0.0790	0.00128
2000	0.783	-0.867	0.254	0.251	0.111	0.00335
2001	1.652	3.197	0.330	0.080	0.0528	0.000710
2002	0.669	-0.661	0.200	0.632	0.0334	0.000282
2003	1.697	2.931	0.268	0.265	0.116	0.00394

Nitrate

Figure 167 presents the seasonal mean nitrate trend in Piseco Lake, while Table 132 presents descriptive statistics for nitrate in Piseco Lake. The nitrate in Piseco Lake exhibited a decreasing trend from 1997 to 2002. The nitrate in Piseco Lake was similar to the county average.

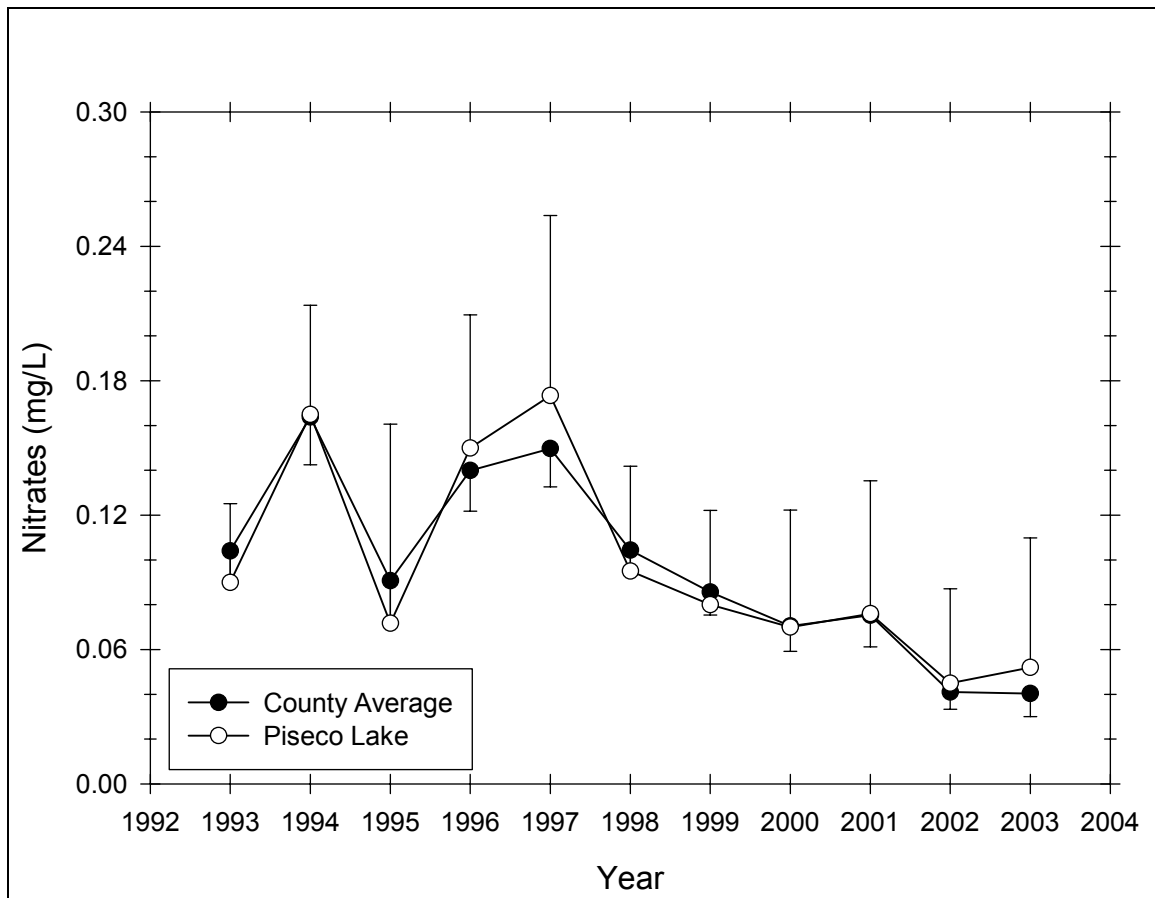


Figure 167 Seasonal mean nitrate trend in Piseco Lake

Table 132 – Descriptive Statistics for Nitrate in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	0.0900	0.0283	0.0126	0.0351
1994	6	0	0.165	0.0464	0.0189	0.0487
1995	6	0	0.0717	0.0847	0.0346	0.0889
1996	6	0	0.150	0.0566	0.0231	0.0594
1997	6	0	0.173	0.0766	0.0313	0.0804
1998	6	0	0.0950	0.0446	0.0182	0.0468
1999	6	1	0.0800	0.0339	0.0152	0.0421
2000	6	0	0.0700	0.0498	0.0203	0.0523
2001	6	1	0.0760	0.0477	0.0214	0.0593
2002	6	2	0.0450	0.0265	0.0132	0.0421
2003	6	1	0.0520	0.0466	0.0208	0.0578
Year	Range	Max	Min	Median	25%	75%
1993	0.0600	0.120	0.0600	0.0800	0.0675	0.120
1994	0.110	0.230	0.120	0.150	0.130	0.210
1995	0.210	0.210	0.000	0.0350	0.01000	0.140
1996	0.140	0.230	0.0900	0.140	0.1000	0.200
1997	0.220	0.290	0.0700	0.170	0.130	0.210
1998	0.110	0.170	0.0600	0.0700	0.0700	0.130
1999	0.0900	0.130	0.0400	0.0800	0.0550	0.1000
2000	0.130	0.170	0.0400	0.0550	0.0400	0.0600
2001	0.120	0.150	0.0300	0.0700	0.0375	0.105
2002	0.0600	0.0800	0.0200	0.0400	0.0250	0.0650
2003	0.110	0.120	0.01000	0.0300	0.0175	0.0900
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	0.331	-2.922	0.256	0.323	0.450	0.0437
1994	0.569	-1.850	0.275	0.168	0.990	0.174
1995	1.093	-0.322	0.268	0.195	0.430	0.0667
1996	0.447	-1.654	0.202	0.531	0.900	0.151
1997	0.290	-0.0193	0.168	0.695	1.040	0.210
1998	1.267	0.0806	0.379	0.007	0.570	0.0641
1999	0.577	0.488	0.184	0.663	0.400	0.0366
2000	2.274	5.336	0.413	0.002	0.420	0.0418
2001	1.009	0.701	0.185	0.660	0.380	0.0380
2002	0.864	-0.286	0.215	0.582	0.180	0.0102
2003	0.902	-0.994	0.282	0.212	0.260	0.0222

Chlorophyll *a*

Figure 168 presents the seasonal mean chlorophyll *a* trend in Piseco Lake, while Table 133 presents descriptive statistics for chlorophyll *a* in Piseco Lake. The chlorophyll *a* in Piseco Lake exhibited an increasing trend from 1997 to 2001 and a decreasing trend from 2001 to 2003. The chlorophyll *a* in Piseco Lake was generally slightly higher than the county average, though this difference was not statistically significant.

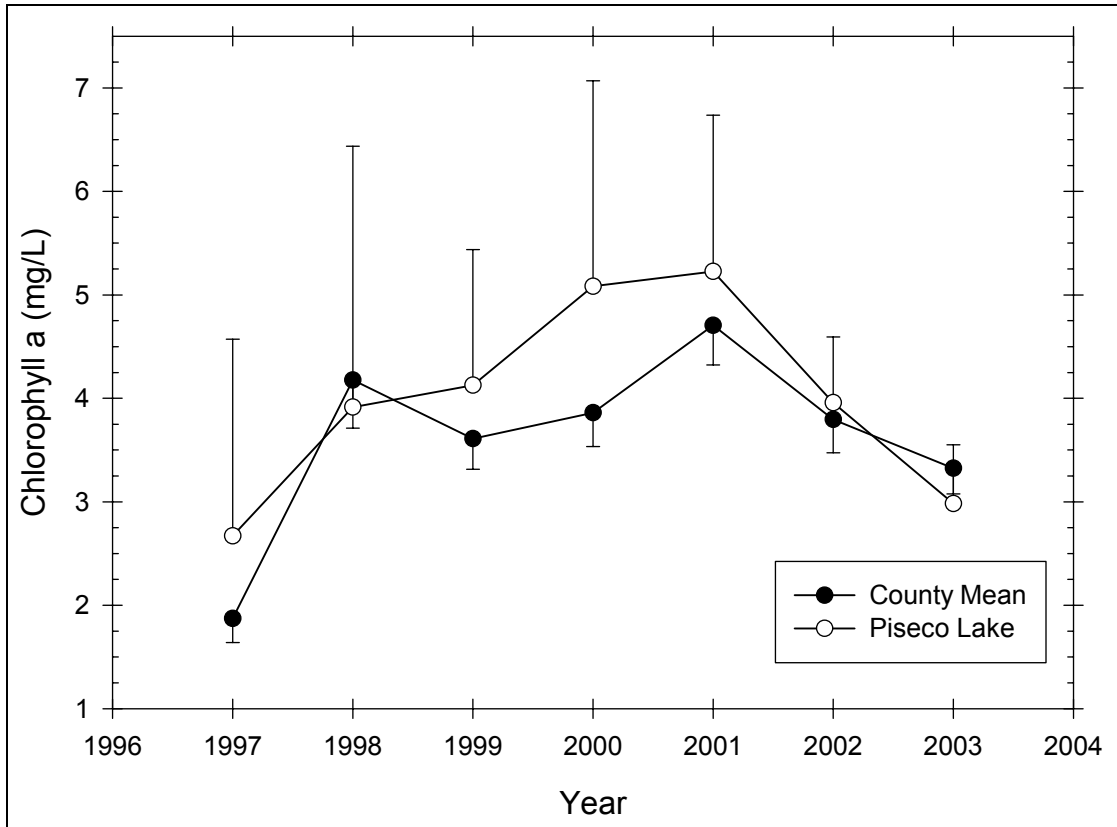


Figure 168 Seasonal mean chlorophyll a trend in Piseco Lake

Table 133 – Descriptive Statistics for Chlorophyll a in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	0	2.670	1.812	0.740	1.901
1998	6	0	3.915	2.404	0.981	2.523
1999	6	1	4.126	1.056	0.472	1.311
2000	6	0	5.083	1.893	0.773	1.986
2001	6	1	5.226	1.217	0.544	1.511
2002	6	2	3.958	0.400	0.200	0.636
2003	6	2	2.982	0.357	0.179	0.568
Year	Range	Max	Min	Median	25%	75%
1997	4.880	5.660	0.780	2.060	1.500	3.960
1998	6.000	7.190	1.190	3.320	2.040	6.430
1999	2.310	5.350	3.040	4.290	3.047	5.013
2000	4.350	7.610	3.260	4.445	3.490	7.250
2001	3.330	7.210	3.880	5.030	4.615	5.665
2002	0.920	4.320	3.400	4.055	3.680	4.235
2003	0.850	3.340	2.490	3.050	2.750	3.215
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	1.001	0.108	0.245	0.293	16.020	59.188
1998	0.506	-1.570	0.214	0.464	23.490	120.856
1999	-0.0795	-2.639	0.246	0.370	20.630	89.581
2000	0.681	-1.830	0.243	0.306	30.500	172.950
2001	1.228	2.704	0.325	0.091	26.130	142.482

2002	-1.237	1.551	0.252	0.421	15.830	63.127
2003	-1.061	1.927	0.281	0.299	11.930	35.964

Transparency

Figure 169 presents the seasonal mean transparency trend in Piseco Lake, while Table 134 presents descriptive statistics for transparency in Piseco Lake. The transparency in Piseco Lake did not exhibit any discernible trend. The transparency in Piseco Lake was generally slightly lower than the county average, though this difference was not statistically significant.

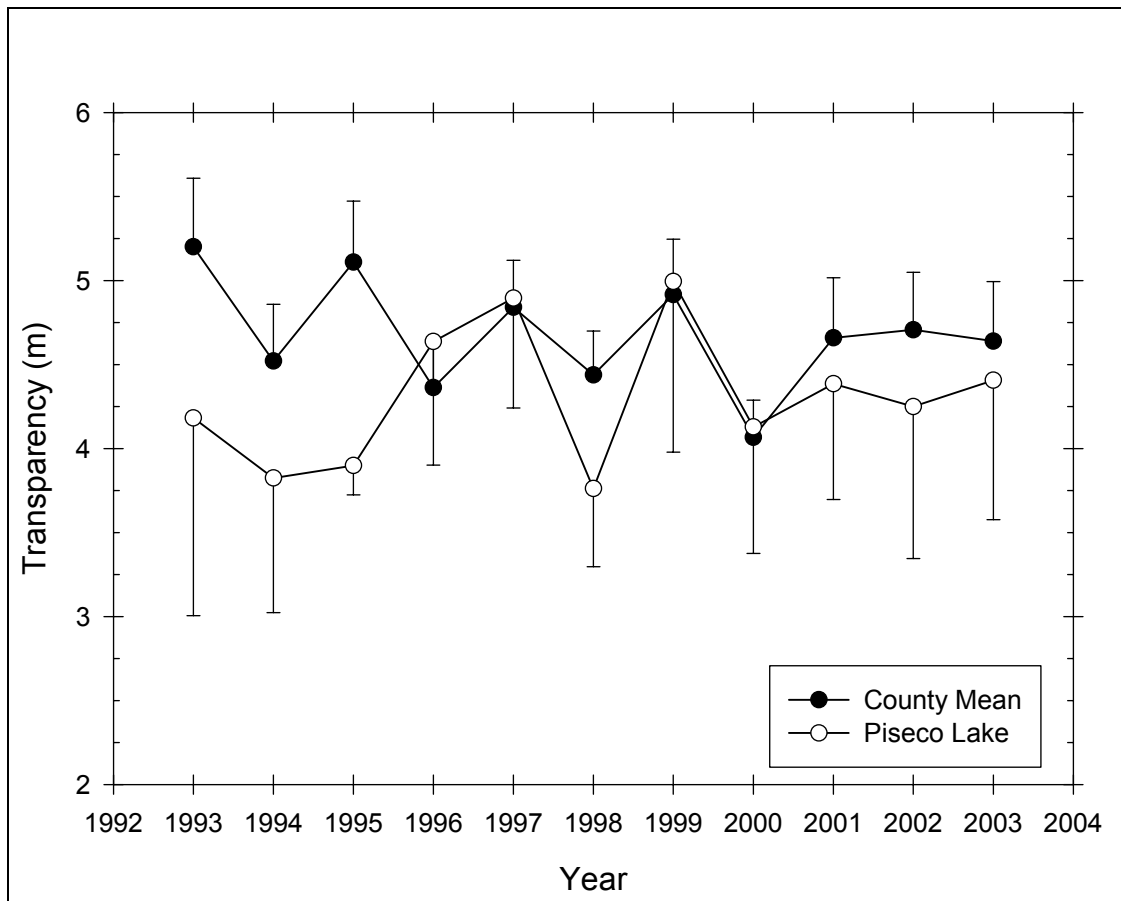


Figure 169 Seasonal mean transparency trend in Piseco Lake

Table 134 – Descriptive Statistics for Transparency in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	6	1	4.182	0.948	0.424	1.177
1994	6	0	3.825	0.764	0.312	0.802
1995	6	0	3.898	0.166	0.0678	0.174
1996	6	0	4.637	0.701	0.286	0.736
1997	6	0	4.895	0.623	0.254	0.653
1998	6	0	3.762	0.443	0.181	0.465
1999	5	0	4.994	0.817	0.365	1.015
2000	6	0	4.128	0.718	0.293	0.753

2001	5	0	4.386	0.555	0.248	0.689
2002	4	0	4.250	0.569	0.284	0.905
2003	5	0	4.406	0.668	0.299	0.830
Year	Range	Max	Min	Median	25%	75%
1993	2.420	5.150	2.730	4.540	3.525	4.813
1994	2.200	4.600	2.400	4.000	3.750	4.200
1995	0.460	4.200	3.740	3.850	3.800	3.950
1996	2.150	5.750	3.600	4.610	4.400	4.850
1997	1.750	5.810	4.060	4.810	4.560	5.320
1998	1.220	4.120	2.900	3.875	3.750	4.050
1999	1.850	5.950	4.100	5.230	4.168	5.612
2000	2.070	5.520	3.450	3.950	3.800	4.100
2001	1.430	5.130	3.700	4.500	3.925	4.732
2002	1.300	4.900	3.600	4.250	3.800	4.700
2003	1.470	5.300	3.830	4.100	3.860	5.023
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1993	-0.992	0.408	0.247	0.364	20.910	91.041
1994	-1.563	3.043	0.294	0.108	22.950	90.703
1995	1.420	2.106	0.223	0.413	23.390	91.320
1996	0.226	1.574	0.214	0.465	27.820	131.448
1997	0.245	-0.470	0.188	0.607	29.370	145.705
1998	-1.955	4.206	0.323	0.050	22.570	85.882
1999	-0.166	-2.505	0.237	0.413	24.970	127.372
2000	1.895	4.255	0.349	0.021	24.770	104.833
2001	0.104	-0.721	0.181	0.672	21.930	97.417
2002	2.517E-015	-1.868	0.170	0.700	17.000	73.220
2003	0.677	-2.263	0.276	0.232	22.030	98.851

TSI

Figure 170 presents the Carlson trophic state index trend in Piseco Lake. Transparency TSI was in the mesotrophic range close to the oligotrophic-mesotrophic boundary throughout the period of record. Chlorophyll *a* TSI was in the eutrophic range from 1998 to 2002, and in the upper mesotrophic range in 1997 and 2003. Total phosphorus TSI was mesotrophic throughout the period of record, with the exception of 2001 and 2002 that were in the upper oligotrophic range and 2003 that was at the mesotrophic-eutrophic boundary.

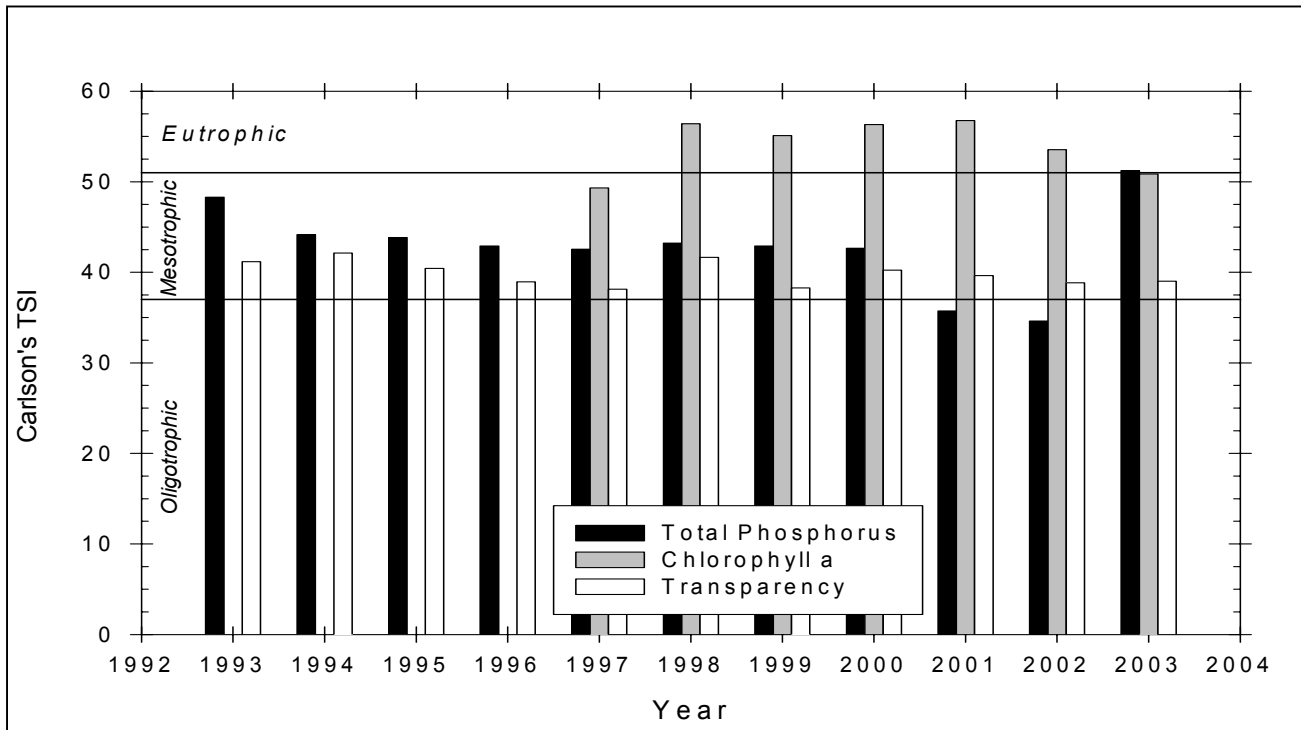


Figure 170 Carlson TSI trend in Piseco Lake

Aluminum

Figure 171 presents the seasonal mean aluminum trend in Piseco Lake, while Table 135 presents descriptive statistics for aluminum in Piseco Lake. The aluminum in Piseco Lake exhibited a slight decreasing trend from 1997 to 2003. The aluminum in Piseco Lake was similar to the county average.

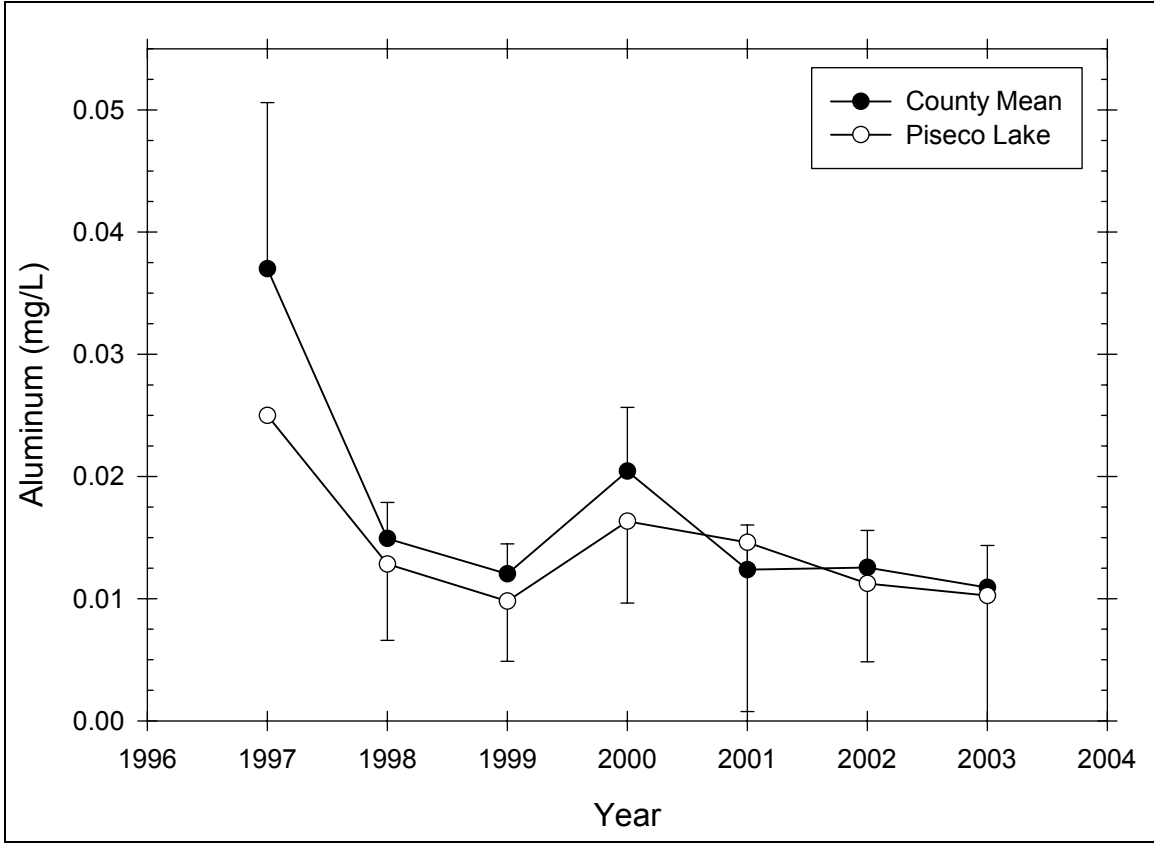


Figure 171 Seasonal mean aluminum trend in Piseco Lake

Table 135 – Descriptive Statistics for Aluminum in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	5	0.0250	--	--	--
1998	6	0	0.0128	0.00595	0.00243	0.00624
1999	6	1	0.00980	0.00396	0.00177	0.00492
2000	6	0	0.0163	0.00638	0.00260	0.00669
2001	6	1	0.0146	0.0111	0.00499	0.0138
2002	6	2	0.0113	0.00403	0.00202	0.00641
2003	6	2	0.0102	0.00785	0.00392	0.0125
Year	Range	Max	Min	Median	25%	75%
1997	0.000	0.0250	0.0250	0.0250	0.0250	0.0250
1998	0.0160	0.0180	0.00200	0.0135	0.0120	0.0180
1999	0.01000	0.0150	0.00500	0.01000	0.00650	0.0128
2000	0.0170	0.0270	0.01000	0.0155	0.0110	0.0190
2001	0.0250	0.0280	0.00300	0.00900	0.00675	0.0258
2002	0.00900	0.0160	0.00700	0.0110	0.00800	0.0145
2003	0.0150	0.0180	0.00300	0.01000	0.00350	0.0170
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	0.0250	0.000625
1998	-1.407	2.269	0.278	0.158	0.0770	0.00116
1999	0.125	-1.170	0.160	0.729	0.0490	0.000543
2000	0.919	0.330	0.199	0.545	0.0980	0.00180
2001	0.453	-2.747	0.292	0.174	0.0730	0.00156

2002	0.248	-2.514	0.212	0.593	0.0450	0.000555
2003	0.0419	-5.599	0.287	0.274	0.0410	0.000605

Calcium

Figure 172 presents the seasonal mean calcium trend in Piseco Lake, while Table 136 presents descriptive statistics for calcium in Piseco Lake. The calcium in Piseco Lake was low and exhibited no discernible trend. The calcium in Piseco Lake was significantly lower than the county average.

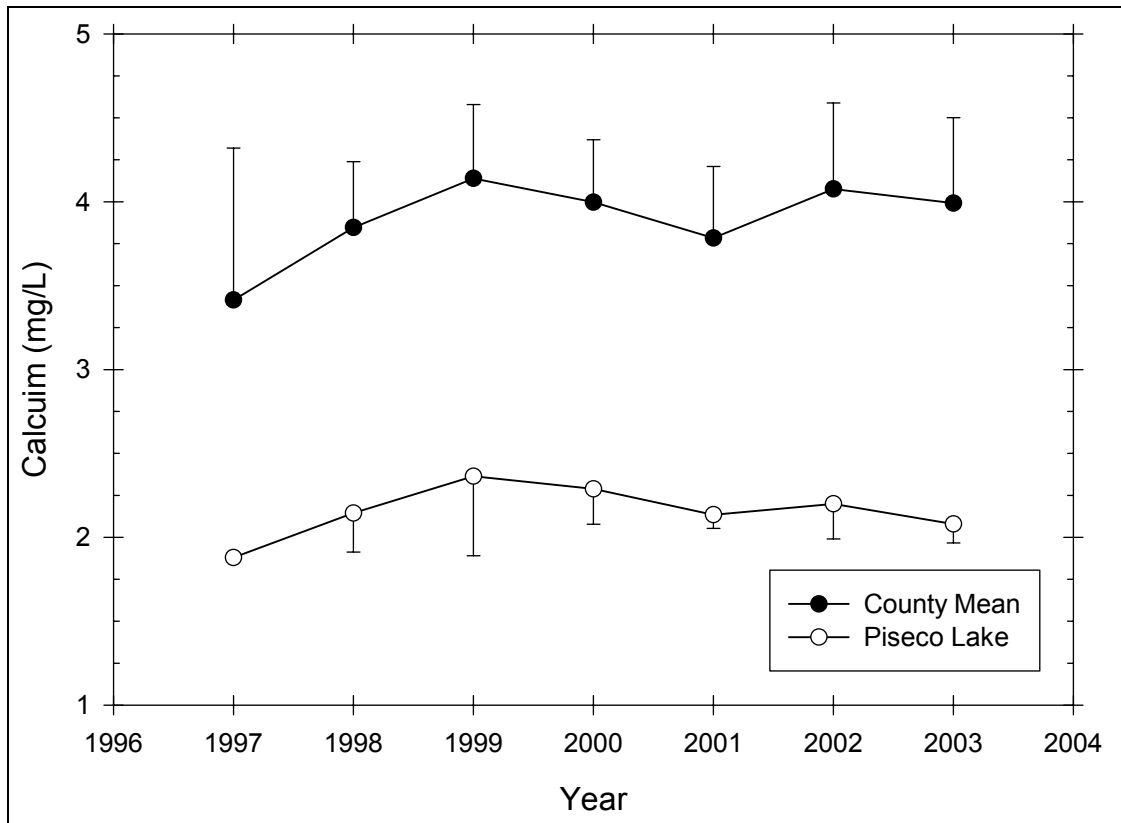


Figure 172 Seasonal mean calcium trend in Piseco Lake

Table 136 – Descriptive Statistics for Calcium in Piseco Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	5	1.880	--	--	--
1998	6	0	2.145	0.222	0.0904	0.232
1999	6	1	2.364	0.382	0.171	0.475
2000	6	0	2.288	0.201	0.0819	0.210
2001	6	1	2.134	0.0650	0.0291	0.0808
2002	6	2	2.200	0.132	0.0658	0.209
2003	6	2	2.080	0.0712	0.0356	0.113
Year	Range	Max	Min	Median	25%	75%
1997	0.000	1.880	1.880	1.880	1.880	1.880
1998	0.610	2.490	1.880	2.115	1.980	2.290
1999	0.810	2.770	1.960	2.420	1.975	2.710
2000	0.530	2.680	2.150	2.225	2.160	2.290

2001	0.160	2.240	2.080	2.110	2.087	2.172
2002	0.320	2.360	2.040	2.200	2.110	2.290
2003	0.160	2.140	1.980	2.100	2.030	2.130
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	1.880	3.534
1998	0.563	-0.339	0.149	0.752	12.870	27.851
1999	-0.155	-2.923	0.242	0.388	11.820	28.527
2000	2.010	4.270	0.330	0.040	13.730	31.620
2001	1.422	1.703	0.244	0.380	10.670	22.787
2002	-9.891E-015	1.046	0.190	0.662	8.800	19.412
2003	-1.331	1.500	0.250	0.432	8.320	17.321

Calcite Saturation Index

Figure 173 presents the calcite saturation index trend in Piseco Lake. The CSI in Piseco Lake exhibited a steady decreasing trend from 2000 to 2003, moving from moderately vulnerable to acid deposition to low vulnerability. The CSI in Piseco Lake was more variable than the county average, though this difference was not statistically significant.

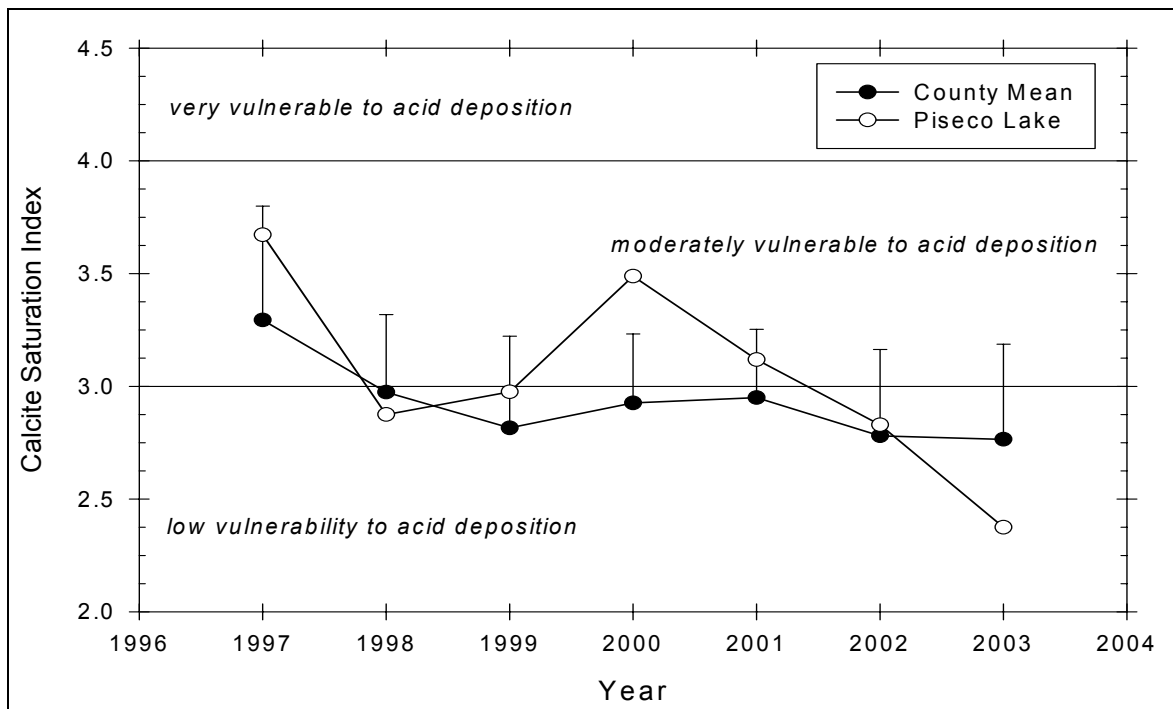


Figure 173 Seasonal mean CSI trend in Piseco Lake