

## Fawn Lake

### Location

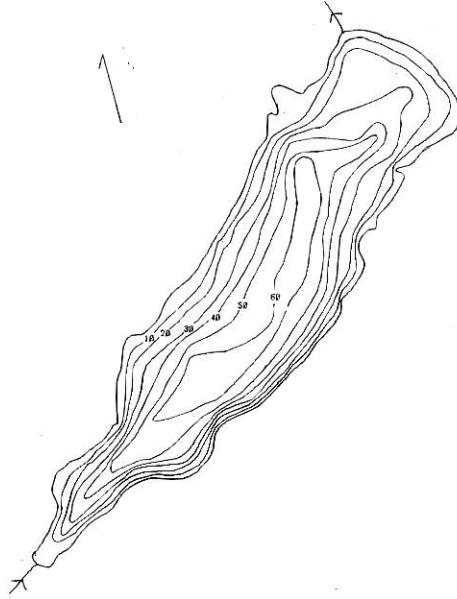
Pond Number: 050247  
Watershed: Upper Hudson River  
County: Hamilton  
Topographic Quadrangle: Lake Pleasant

### Sample Site

Latitude: 43° 29.274'  
Longitude: 74° 27.249'

### Morphometry

Surface Area: 289 Ac.  
Mean Depth: 34 Ft.  
Maximum Depth: 62 Ft.  
Volume: 8,314 Ac./Ft.  
Watershed Area: 1115 Ac.  
Hydraulic Retention Time: 2.3 Yr.  
Shoreline Length: 3.5 Mi.  
Elevation: 1701 Ft.  
Water Quality Classification: N  
Trophic State: Mesotrophic



## Temperature and Dissolved Oxygen

Fawn Lake had a minimum DO of 0.5 mg/L (September 2000), with a minimum temperature of 4.9°C and a maximum temperature of 25.8 °C. In general, the lowest DO values occurred during the months of July through September.

## pH

Figure 34 presents the seasonal mean pH trend in Fawn Lake, while Table 25 presents descriptive statistics for pH in Fawn Lake. The pH in Fawn Lake exhibited no distinct trend. The pH in Fawn Lake was generally slightly higher than the county average, though this difference was not statistically significant.

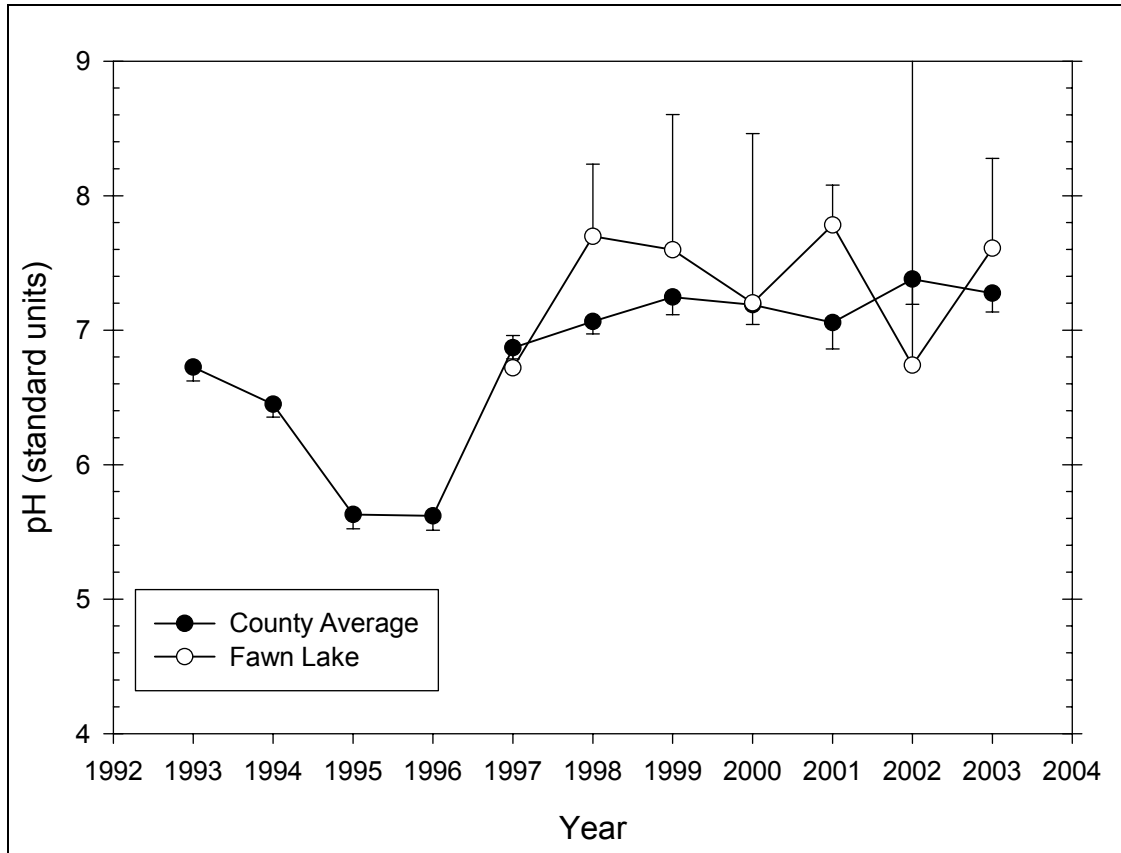


Figure 34 Seasonal mean pH trend in Fawn Lake

Table 25 – Descriptive Statistics for pH in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	0	6.720	0.229	0.0935	0.240
1998	5	1	7.697	0.338	0.169	0.538
1999	4	0	7.598	0.632	0.316	1.006
2000	4	0	7.202	0.792	0.396	1.260
2001	5	0	7.782	0.240	0.107	0.298
2002	2	0	6.740	1.739	1.230	15.629
2003	5	0	7.610	0.537	0.240	0.667
Year	Range	Max	Min	Median	25%	75%
1997	0.640	6.970	6.330	6.795	6.580	6.850
1998	0.720	7.920	7.200	7.835	7.485	7.910
1999	1.480	8.180	6.700	7.755	7.205	7.990
2000	1.830	8.020	6.190	7.300	6.600	7.805
2001	0.600	7.980	7.380	7.800	7.695	7.958
2002	2.460	7.970	5.510	6.740	5.510	7.970
2003	1.430	8.250	6.820	7.610	7.293	8.002
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	-1.083	0.809	0.287	0.129	40.320	271.213
1998	-1.782	3.155	0.335	0.123	30.790	237.349
1999	-1.361	2.495	0.321	0.160	30.390	232.087
2000	-0.592	-0.595	0.188	0.667	28.810	209.385

2001	-1.588	2.786	0.330	0.079	38.910	303.027
2002	--	--	0.260	0.481	13.480	93.881
2003	-0.551	0.497	0.183	0.666	38.050	290.716

### Alkalinity

Figure 35 presents the seasonal mean alkalinity trend in Fawn Lake, while Table 26 presents descriptive statistics for alkalinity in Fawn Lake. The alkalinity in Fawn Lake exhibited no distinct trend. The alkalinity in Fawn Lake was significantly lower than the county average, though this difference may not be statistically significant for all years.

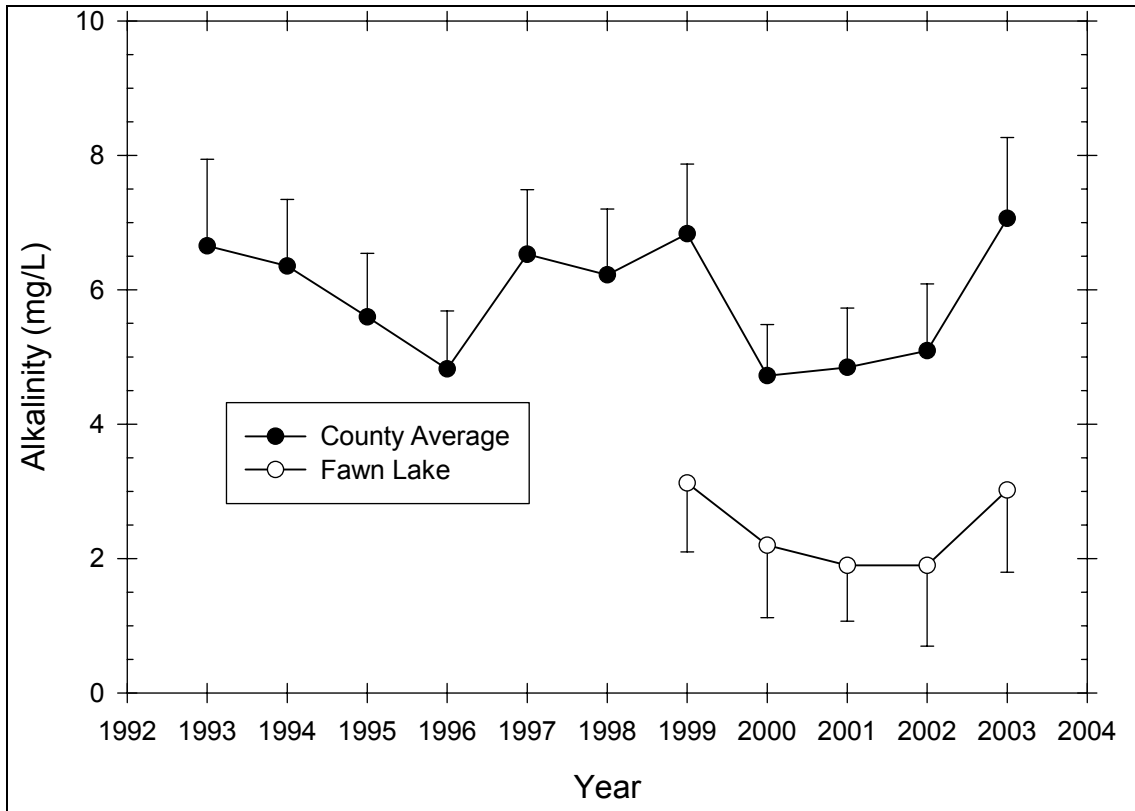


Figure 35 Seasonal mean alkalinity trend in Fawn Lake

Table 26 – Descriptive Statistics for Alkalinity in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1993	5	3	12.450	1.626	1.150	14.612
1997	5	0	2.840	0.336	0.150	0.417
1998	5	1	2.175	0.602	0.301	0.958
1999	6	2	3.125	0.645	0.322	1.026
2000	6	2	2.200	0.678	0.339	1.079
2001	6	2	1.900	0.523	0.261	0.832
2002	6	4	1.900	0.141	0.100	1.271
2003	6	1	3.020	0.986	0.441	1.224
Year	Range	Max	Min	Median	25%	75%
1993	2.300	13.600	11.300	12.450	11.300	13.600

1997	0.900	3.200	2.300	2.900	2.675	3.050
1998	1.400	3.000	1.600	2.050	1.750	2.600
1999	1.500	3.700	2.200	3.300	2.750	3.500
2000	1.500	3.000	1.500	2.150	1.650	2.750
2001	1.100	2.600	1.500	1.750	1.500	2.300
2002	0.200	2.000	1.800	1.900	1.800	2.000
2003	2.600	4.100	1.500	3.300	2.400	3.650
<b>Year</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>K-S Dist.</b>	<b>K-S Prob.</b>	<b>Sum</b>	<b>Sum of Squares</b>
1993	--	--	0.260	0.481	24.900	312.650
1997	-1.169	2.034	0.253	0.337	14.200	40.780
1998	1.071	1.169	0.233	0.505	8.700	20.010
1999	-1.468	2.756	0.357	0.083	12.500	40.310
2000	0.282	-2.734	0.222	0.552	8.800	20.740
2001	1.008	-0.499	0.278	0.311	7.600	15.260
2002	--	--	0.260	0.481	3.800	7.240
2003	-0.936	0.955	0.212	0.542	15.100	49.490

### Total Phosphorus

Figure 36 presents the seasonal mean total phosphorus trend in Fawn Lake, while Table 27 presents descriptive statistics for total phosphorus in Fawn Lake. The total phosphorus in Fawn Lake exhibited a trend of decreasing concentrations from 2000 to 2003. The total phosphorus in Fawn Lake was similar to the county average.

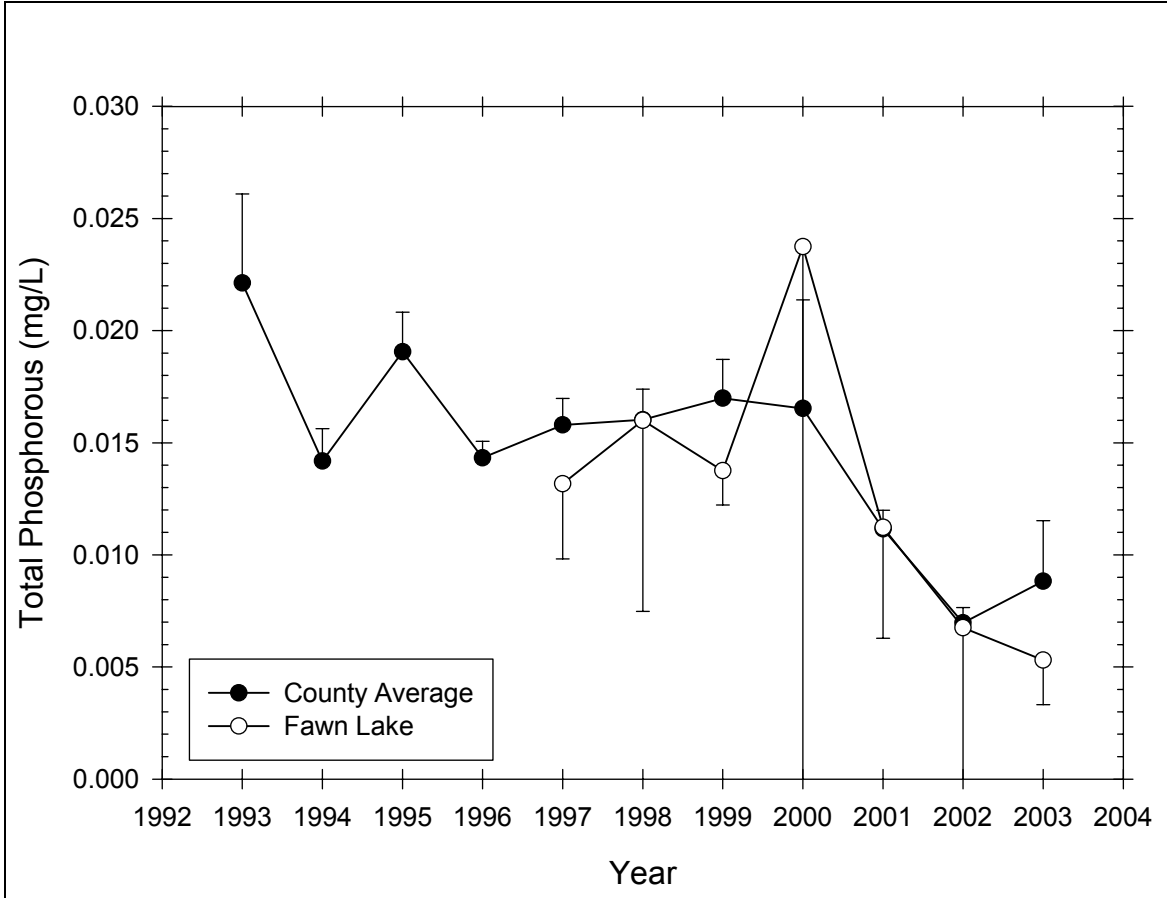


Figure 36 Seasonal mean total phosphorus trend in Fawn Lake

Table 27 – Descriptive Statistics for Total Phosphorus in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	0	0.0132	0.00319	0.00130	0.00335
1998	5	1	0.0160	0.00535	0.00268	0.00852
1999	6	2	0.0137	0.000957	0.000479	0.00152
2000	6	2	0.0238	0.0233	0.0116	0.0370
2001	6	2	0.0112	0.00311	0.00155	0.00495
2002	6	4	0.00675	0.00332	0.00235	0.0299
2003	6	1	0.00530	0.00159	0.000711	0.00197
Year	Range	Max	Min	Median	25%	75%
1997	0.00900	0.0190	0.01000	0.0125	0.0110	0.0140
1998	0.0110	0.0210	0.01000	0.0165	0.0115	0.0205
1999	0.00200	0.0150	0.0130	0.0135	0.0130	0.0145
2000	0.0530	0.0540	0.001000	0.0200	0.00600	0.0415
2001	0.00700	0.0150	0.00800	0.0110	0.00875	0.0137
2002	0.00470	0.00910	0.00440	0.00675	0.00440	0.00910
2003	0.00420	0.00720	0.00300	0.00560	0.00420	0.00638
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	1.440	2.438	0.230	0.372	0.0790	0.00109
1998	-0.235	-4.341	0.272	0.334	0.0640	0.00111
1999	0.855	-1.289	0.283	0.289	0.0550	0.000759

2000	0.741	-0.599	0.208	0.605	0.0950	0.00388
2001	0.371	-2.019	0.210	0.597	0.0449	0.000533
2002	--	--	0.260	0.481	0.0135	0.000102
2003	-0.529	0.138	0.175	0.693	0.0265	0.000151

## Nitrate

Figure 37 presents the seasonal mean nitrate trend in Fawn Lake, while Table 28 presents descriptive statistics for nitrate in Fawn Lake. The nitrate in Fawn Lake exhibited a significant trend of decreasing concentration. The nitrate in Fawn Lake was significantly lower than the county average, though this difference may not be statistically significant for all years.

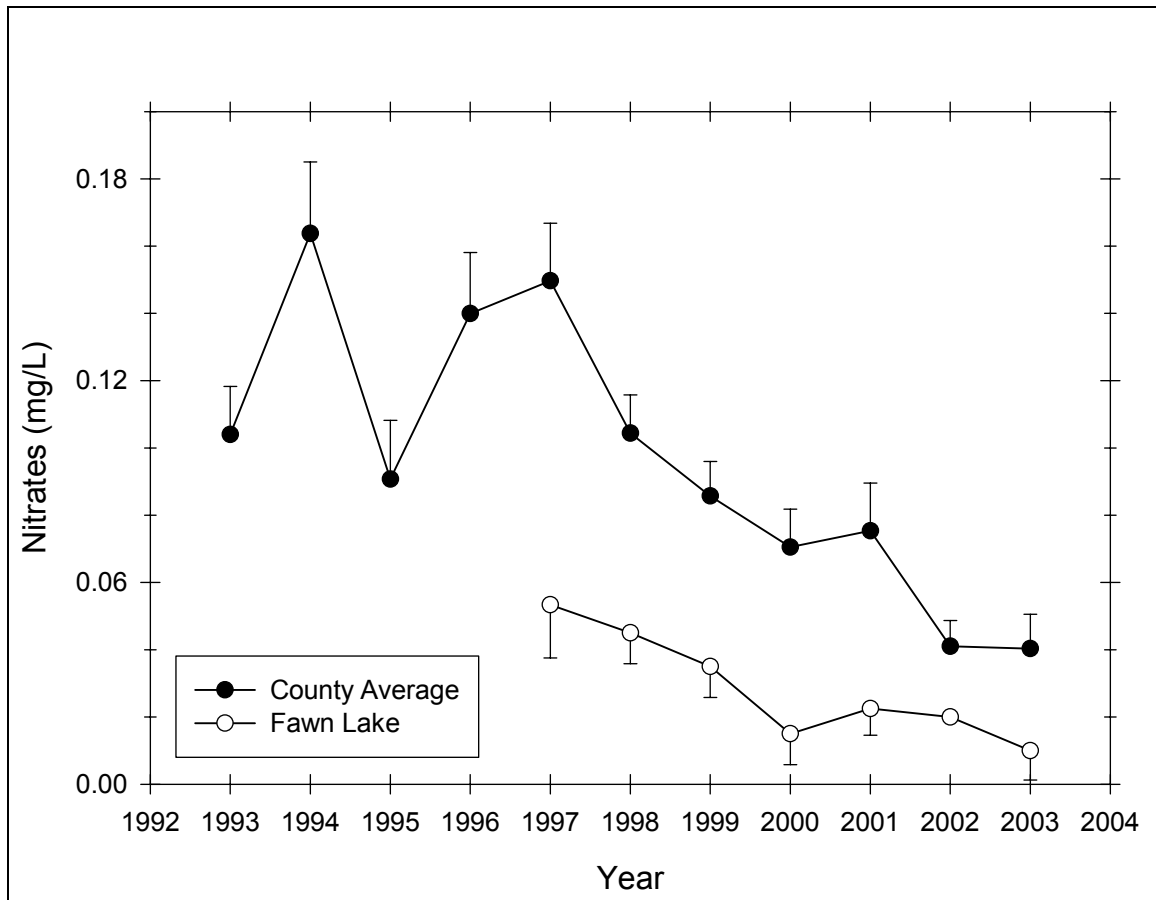


Figure 37 Seasonal mean nitrate trend in Fawn Lake

Table 28 – Descriptive Statistics for Nitrate in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	0	0.0533	0.0151	0.00615	0.0158
1998	5	1	0.0450	0.00577	0.00289	0.00919
1999	6	2	0.0350	0.00577	0.00289	0.00919
2000	6	2	0.0150	0.00577	0.00289	0.00919
2001	6	2	0.0225	0.00500	0.00250	0.00796
2002	6	4	0.0200	0.000	0.000	0.000

2003	6	1	0.01000	0.00707	0.00316	0.00878
<b>Year</b>	<b>Range</b>	<b>Max</b>	<b>Min</b>	<b>Median</b>	<b>25%</b>	<b>75%</b>
1997	0.0400	0.0800	0.0400	0.0500	0.0400	0.0600
1998	0.01000	0.0500	0.0400	0.0450	0.0400	0.0500
1999	0.01000	0.0400	0.0300	0.0350	0.0300	0.0400
2000	0.01000	0.0200	0.01000	0.0150	0.01000	0.0200
2001	0.01000	0.0300	0.0200	0.0200	0.0200	0.0250
2002	0.000	0.0200	0.0200	0.0200	0.0200	0.0200
2003	0.0200	0.0200	0.000	0.01000	0.00750	0.0125
<b>Year</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>K-S Dist.</b>	<b>K-S Prob.</b>	<b>Sum</b>	<b>Sum of Squares</b>
1997	1.270	1.531	0.254	0.251	0.320	0.0182
1998	3.701E-015	-6.000	0.307	0.203	0.180	0.00820
1999	-3.701E-015	-6.000	0.307	0.203	0.140	0.00500
2000	5.921E-016	-6.000	0.307	0.203	0.0600	0.001000
2001	2.000	4.000	0.441	0.006	0.0900	0.00210
2002	--	--	0.000	<0.001	0.0400	0.000800
2003	0.000	2.000	0.300	0.149	0.0500	0.000700

## Chlorophyll a

Figure 38 presents the seasonal mean chlorophyll *a* trend in Fawn Lake, while Table 29 presents descriptive statistics for chlorophyll *a* in Fawn Lake. The chlorophyll *a* in Fawn Lake exhibited no distinct trend. The chlorophyll *a* in Fawn Lake was generally slightly higher than the county average, though this difference was not statistically significant.

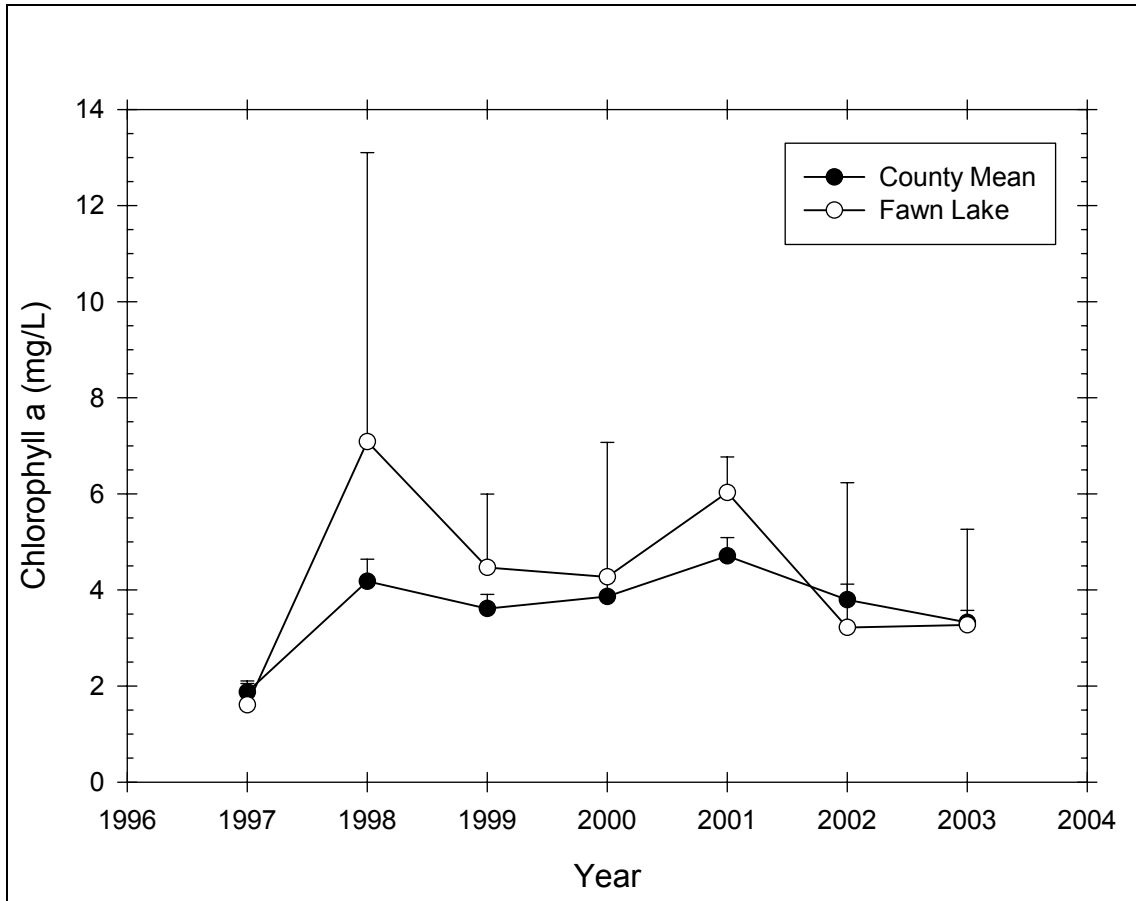


Figure 38 Seasonal mean chlorophyll a trend in Fawn Lake

**Table 29 – Descriptive Statistics for Chlorophyll a in Fawn Lake**

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	1	1.606	0.359	0.160	0.445
1998	5	1	7.085	3.783	1.891	6.020
1999	6	2	4.468	0.959	0.480	1.527
2000	6	2	4.270	1.759	0.879	2.799
2001	6	2	6.025	0.466	0.233	0.742
2002	6	4	3.220	0.354	0.250	3.177
2003	6	2	3.270	1.252	0.626	1.993
Year	Range	Max	Min	Median	25%	75%
1997	0.940	1.940	1.000	1.700	1.465	1.813
1998	9.080	11.690	2.610	7.020	4.355	9.815
1999	2.060	5.270	3.210	4.695	3.720	5.215
2000	3.810	6.000	2.190	4.445	2.830	5.710
2001	1.030	6.370	5.340	6.195	5.740	6.310
2002	0.500	3.470	2.970	3.220	2.970	3.470
2003	2.660	4.780	2.120	3.090	2.245	4.295
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	-1.625	3.181	0.316	0.107	8.030	13.411
1998	0.0949	0.370	0.161	0.709	28.340	243.722
1999	-0.870	-1.112	0.265	0.367	17.870	82.596
2000	-0.345	-3.111	0.243	0.461	17.080	82.213
2001	-1.759	3.226	0.347	0.095	24.100	145.855
2002	--	--	0.260	0.481	6.440	20.862
2003	0.459	-3.076	0.264	0.371	13.080	47.476

## Transparency

Figure 39 presents the seasonal mean transparency trend in Fawn Lake, while Table 30 presents descriptive statistics for transparency in Fawn Lake. The transparency in Fawn Lake exhibited a slight decreasing trend from 1999 to 2002/2003. The transparency in Fawn Lake was slightly higher than the county average prior to 2000 and slightly lower than the county average after 2000, though these differences were not statistically significant.

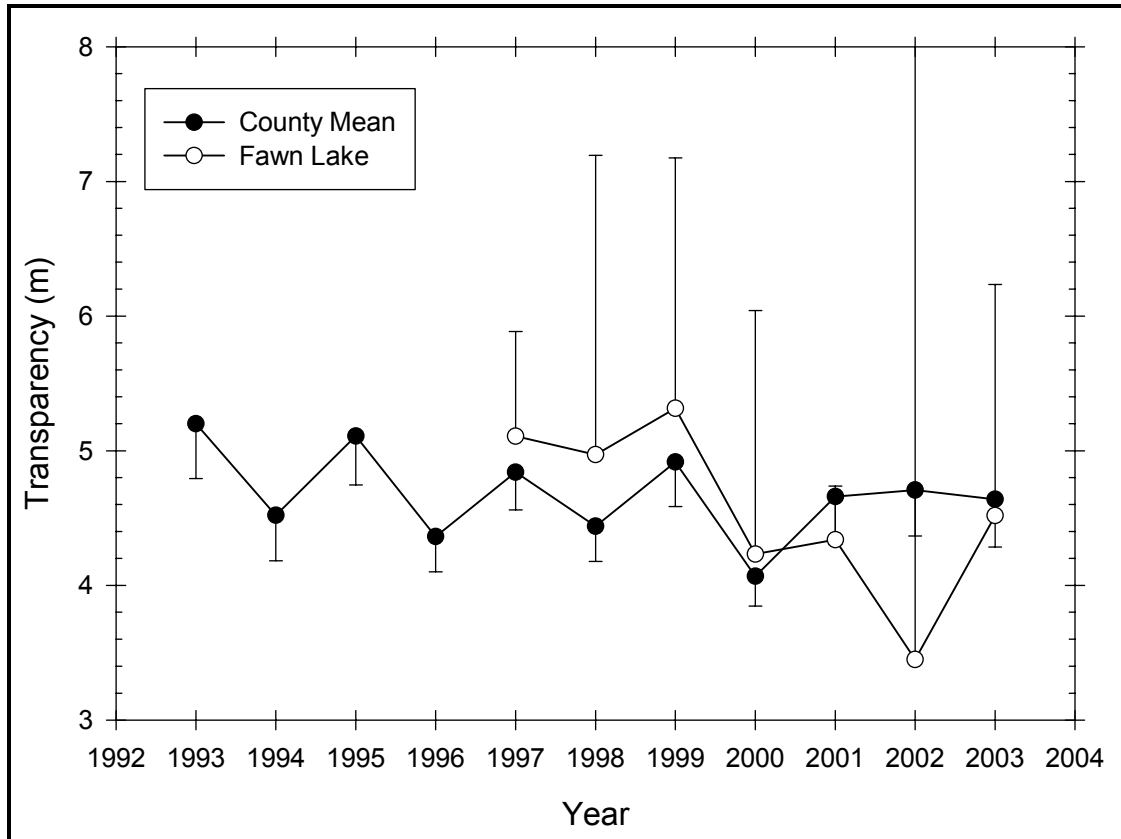


Figure 39 Seasonal mean transparency trend in Fawn Lake

Table 30 – Descriptive Statistics for Transparency in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	0	5.108	0.741	0.302	0.777
1998	5	1	4.970	1.398	0.699	2.225
1999	4	0	5.315	1.169	0.585	1.861
2000	4	0	4.232	1.136	0.568	1.808
2001	5	0	4.340	0.321	0.144	0.398
2002	2	0	3.450	1.202	0.850	10.800
2003	4	0	4.518	1.080	0.540	1.718
Year	Range	Max	Min	Median	25%	75%
1997	2.150	6.000	3.850	5.300	4.750	5.450
1998	2.970	6.900	3.930	4.525	3.940	6.000
1999	2.740	6.600	3.860	5.400	4.430	6.200
2000	2.620	5.400	2.780	4.375	3.365	5.100
2001	0.700	4.700	4.000	4.500	4.000	4.550
2002	1.700	4.300	2.600	3.450	2.600	4.300
2003	2.250	5.700	3.450	4.460	3.610	5.425
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	-0.923	1.158	0.189	0.600	30.650	159.313
1998	1.221	0.571	0.267	0.356	19.880	104.667
1999	-0.365	-0.536	0.161	0.708	21.260	117.100
2000	-0.596	-0.673	0.191	0.658	16.930	75.531
2001	-0.299	-2.718	0.291	0.178	21.700	94.590

2002	--	--	0.260	0.481	6.900	25.250
2003	0.144	-4.357	0.256	0.407	18.070	85.128

## TSI

Figure 40 presents the Carlson trophic state index trend in Fawn Lake. Total phosphorus TSI was in the mesotrophic range from 1997 to 2000 and then decreased each year after that, entering the oligotrophic range in 2002. Chlorophyll *a* TSI was in the eutrophic range most of the study period, while transparency TSI was in the oligotrophic to mesotrophic range.

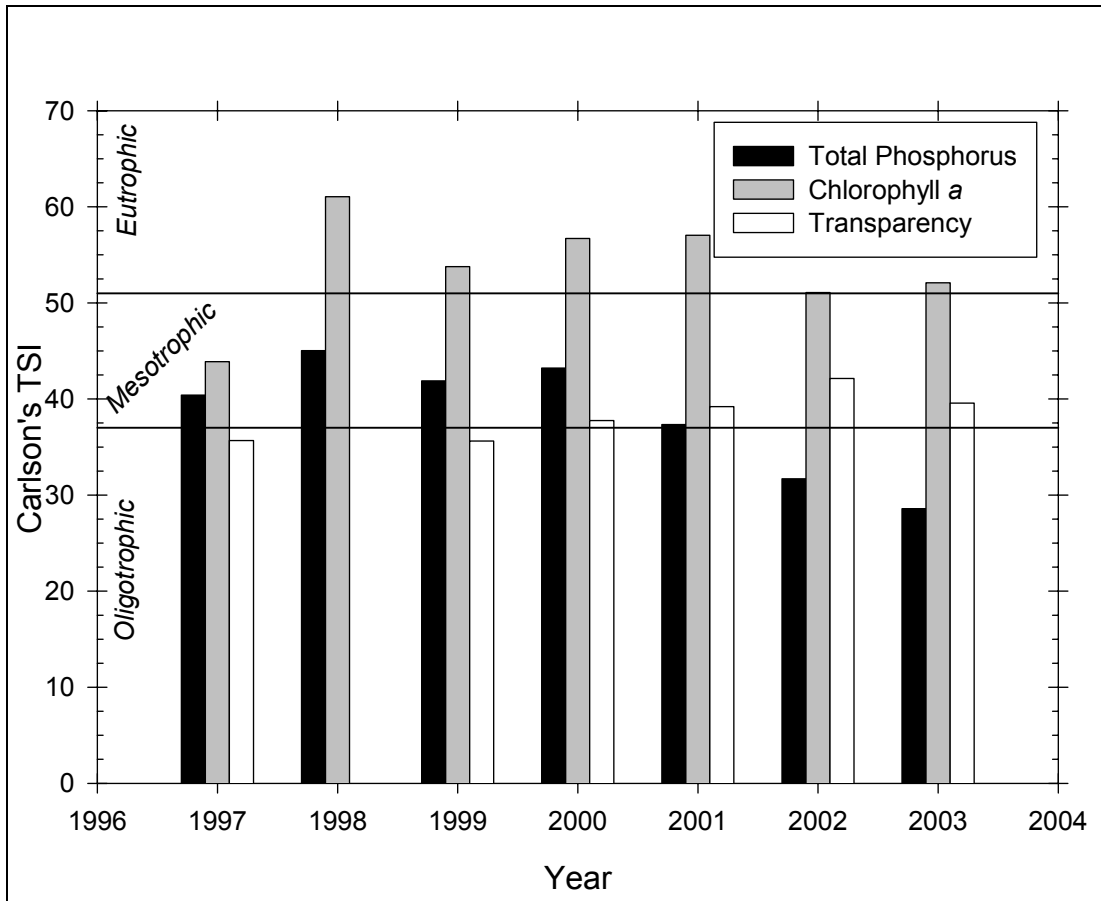


Figure 40 Carlson TSI trend in Fawn Lake

## Aluminum

Figure 41 presents the seasonal mean aluminum trend in Fawn Lake, while Table 31 presents descriptive statistics for aluminum in Fawn Lake. The aluminum in Fawn Lake exhibited a relatively stable trend except for a high value in 1997. The aluminum in Fawn Lake was slightly lower than the county average, though this difference was not statistically significant.

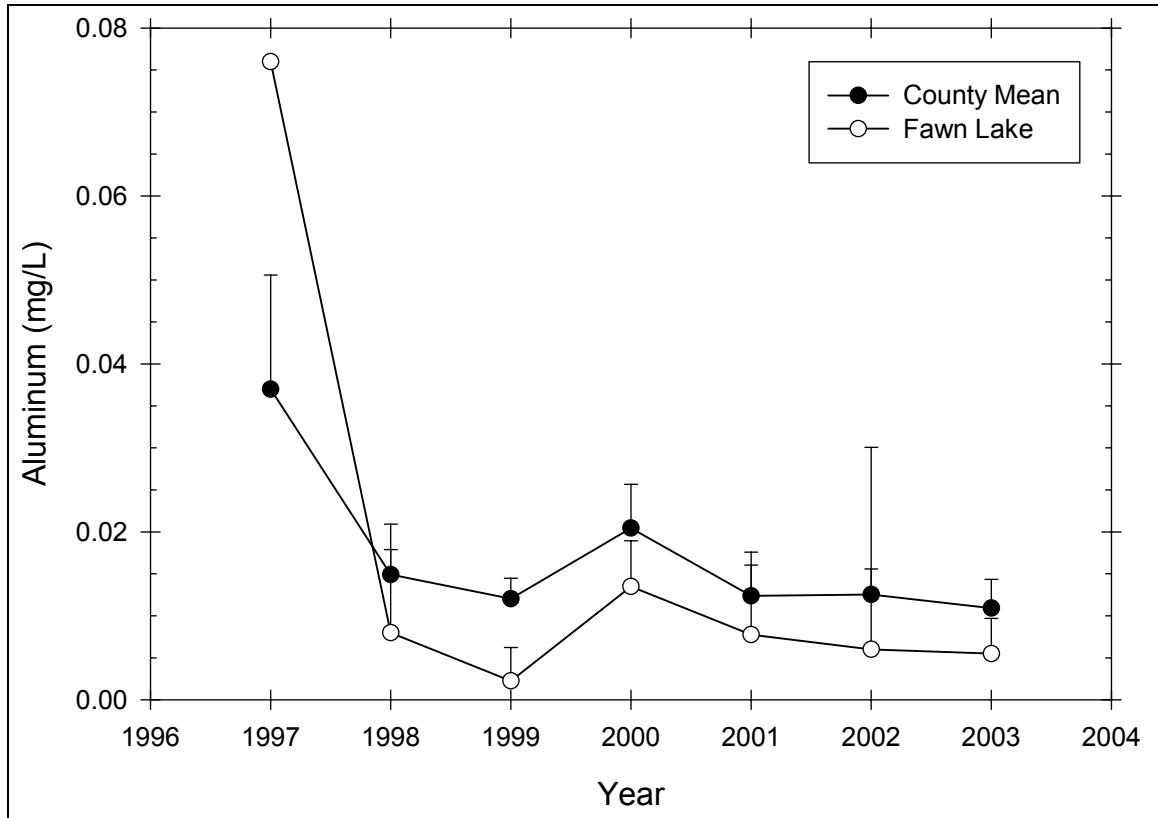


Figure 41 Seasonal mean aluminum trend in Fawn Lake

Table 31 – Descriptive Statistics for Aluminum in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	5	0.0760	--	--	--
1998	5	1	0.00800	0.00812	0.00406	0.0129
1999	6	2	0.00225	0.00250	0.00125	0.00398
2000	6	2	0.0135	0.00342	0.00171	0.00544
2001	6	2	0.00775	0.00618	0.00309	0.00984
2002	6	4	0.00600	0.00283	0.00200	0.0254
2003	6	2	0.00550	0.00265	0.00132	0.00421
Year	Range	Max	Min	Median	25%	75%
z1997	0.000	0.0760	0.0760	0.0760	0.0760	0.0760
1998	0.0150	0.0150	0.000	0.00850	0.001000	0.0150
1999	0.00500	0.00600	0.001000	0.001000	0.001000	0.00350
2000	0.00800	0.0170	0.00900	0.0140	0.0110	0.0160
2001	0.0120	0.0130	0.001000	0.00850	0.00250	0.0130
2002	0.00400	0.00800	0.00400	0.00600	0.00400	0.00800
2003	0.00600	0.00900	0.00300	0.00500	0.00350	0.00750
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	0.0760	0.00578
1998	-0.0522	-5.699	0.306	0.207	0.0320	0.000454
1999	2.000	4.000	0.441	0.006	0.00900	0.0000390
2000	-0.753	0.343	0.192	0.657	0.0540	0.000764
2001	-0.200	-4.858	0.302	0.219	0.0310	0.000355
2002	--	--	0.260	0.481	0.0120	0.0000800

2003	0.864	-0.286	0.215	0.582	0.0220	0.000142
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### Calcium

Figure 42 presents the seasonal mean calcium trend in Fawn Lake, while Table 32 presents descriptive statistics for calcium in Fawn Lake. The calcium in Fawn Lake exhibited a relatively stable trend throughout the study period. The calcium in Fawn Lake was significantly lower than the county average, though this difference may not be statistically significant for all years.

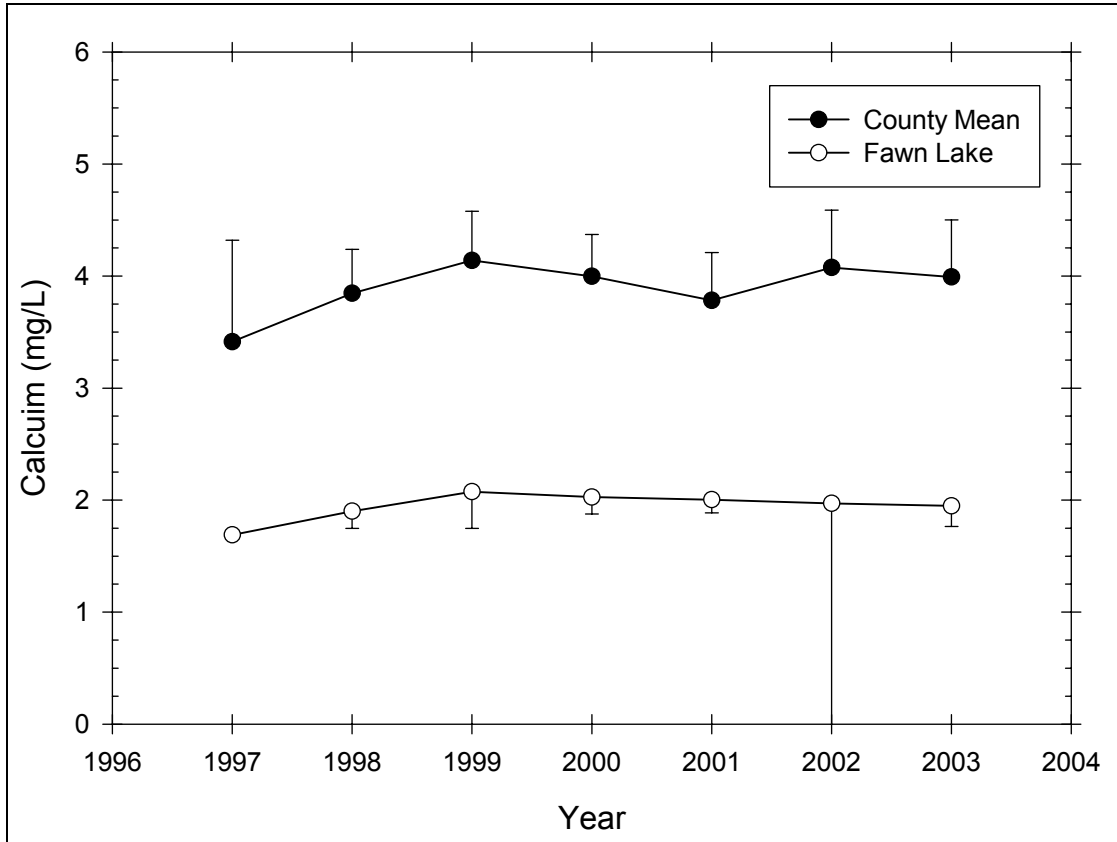


Figure 42 Seasonal mean calcium trend in Fawn Lake

Table 32 – Descriptive Statistics for Calcium in Fawn Lake

Year	Size	Missing	Mean	Std Dev	Std. Error	C.I. of Mean
1997	6	5	1.690	--	--	--
1998	5	1	1.900	0.0952	0.0476	0.152
1999	6	2	2.075	0.205	0.103	0.327
2000	6	2	2.027	0.0946	0.0473	0.151
2001	6	2	2.002	0.0727	0.0364	0.116
2002	6	4	1.970	0.438	0.310	3.939
2003	6	2	1.948	0.114	0.0572	0.182
Year	Range	Max	Min	Median	25%	75%
1997	0.000	1.690	1.690	1.690	1.690	1.690
1998	0.200	1.960	1.760	1.940	1.840	1.960
1999	0.440	2.210	1.770	2.160	1.955	2.195

2000	0.200	2.090	1.890	2.065	1.965	2.090
2001	0.160	2.110	1.950	1.975	1.960	2.045
2002	0.620	2.280	1.660	1.970	1.660	2.280
2003	0.260	2.050	1.790	1.975	1.865	2.030
Year	Skewness	Kurtosis	K-S Dist.	K-S Prob.	Sum	Sum of Squares
1997	--	--	--	--	1.690	2.856
1998	-1.779	3.135	0.333	0.127	7.600	14.467
1999	-1.885	3.607	0.374	0.052	8.300	17.349
2000	-1.659	2.615	0.303	0.217	8.110	16.470
2001	1.822	3.465	0.371	0.056	8.010	16.056
2002	--	--	0.260	0.481	3.940	7.954
2003	-1.151	0.911	0.224	0.545	7.790	15.210

### Calcite Saturation Index

Figure 43 presents the calcite saturation index trend in Fawn Lake. Based upon CSI, Fawn Lake was moderately to very vulnerable to acid deposition throughout the study period. Fawn Lake CSI was higher than the county mean, though this difference may not be statistically significant in all years.

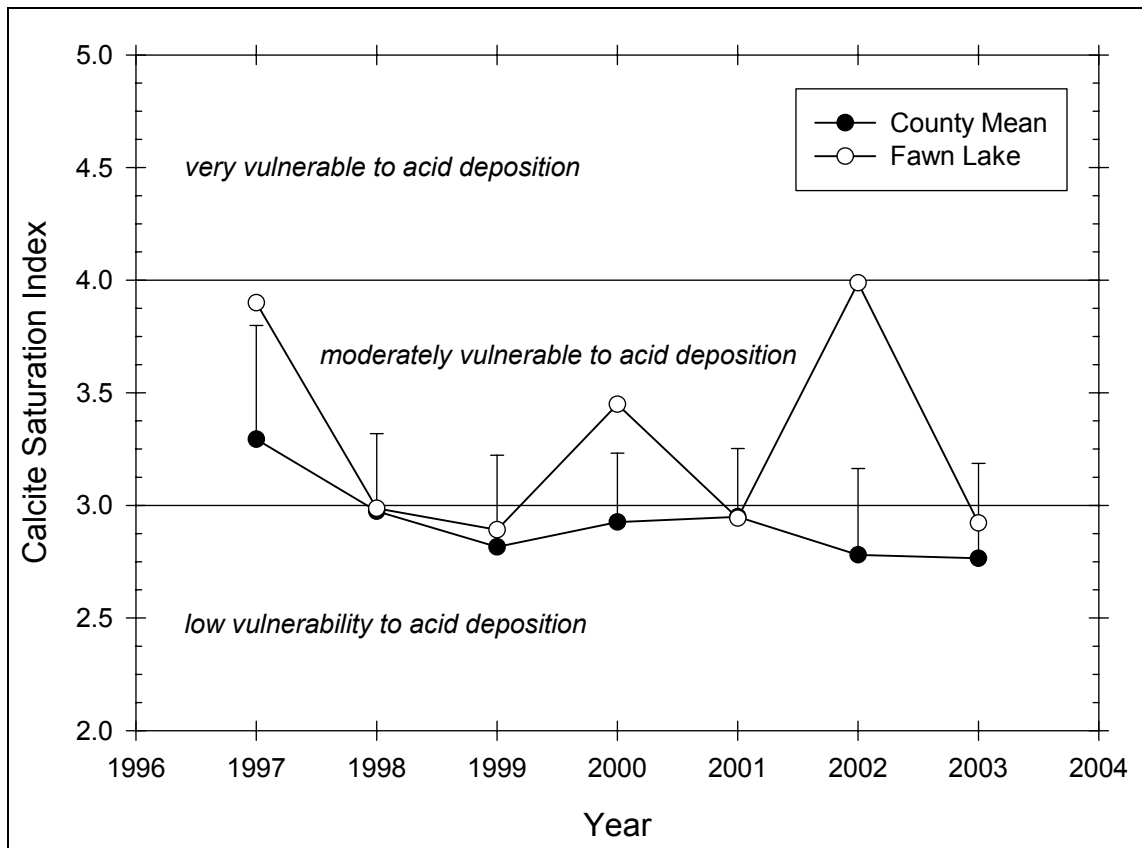


Figure 43 Seasonal mean CSI trend in Fawn Lake