

Diamond Lake

Diamond Lake has impaired water quality conditions that inhibit recreational use. The lake is extremely eutrophic with phosphorus concentrations consistently above 100 micrograms per liter ($\mu\text{g/L}$). The average phosphorus concentration in 2007 during the growing season was 154 $\mu\text{g/L}$ with values ranging between 60 and 211 $\mu\text{g/L}$. The excessive amount of phosphorus in the lake is conducive for severe algae blooms.

The average chlorophyll-a concentration was 46 $\mu\text{g/L}$ in 2007. Seasonal variation in chlorophyll-a concentrations ranged between 7 and 75 $\mu\text{g/L}$. Consequently, water clarity conditions were extremely poor in which Secchi depth measurements ranged between 0.3 to 1.19 m.

Although the water quality in Diamond Lake is extremely poor, 2007 had the best water quality overall compared to previous years, especially compared to 2006. Average chlorophyll-a concentrations decreased from 86 $\mu\text{g/L}$ in 2006 to 46 $\mu\text{g/L}$ in 2007. Secchi disk transparency increased from a yearly average of 0.34 m in 2006 to 0.56 m in 2007.

The severe algae blooms provides a shading effect that inhibits the development of aquatic macrophytes. The poor water quality conditions are partially due to large amounts of watershed nutrient loading from surrounding agricultural areas.

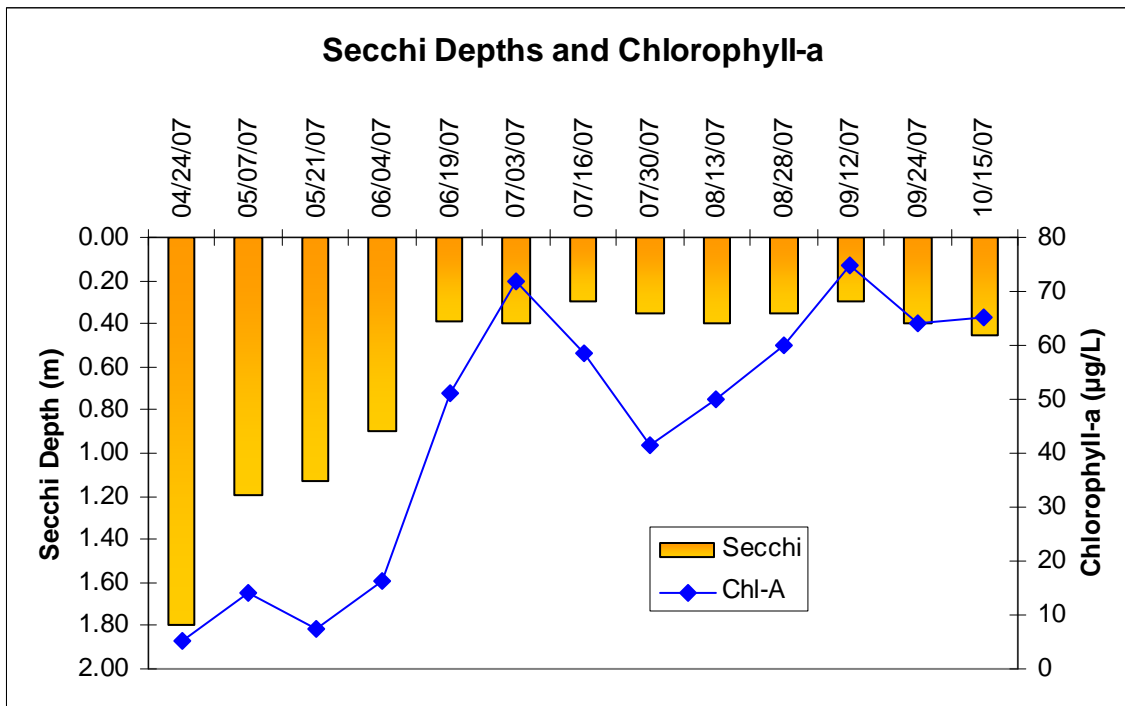
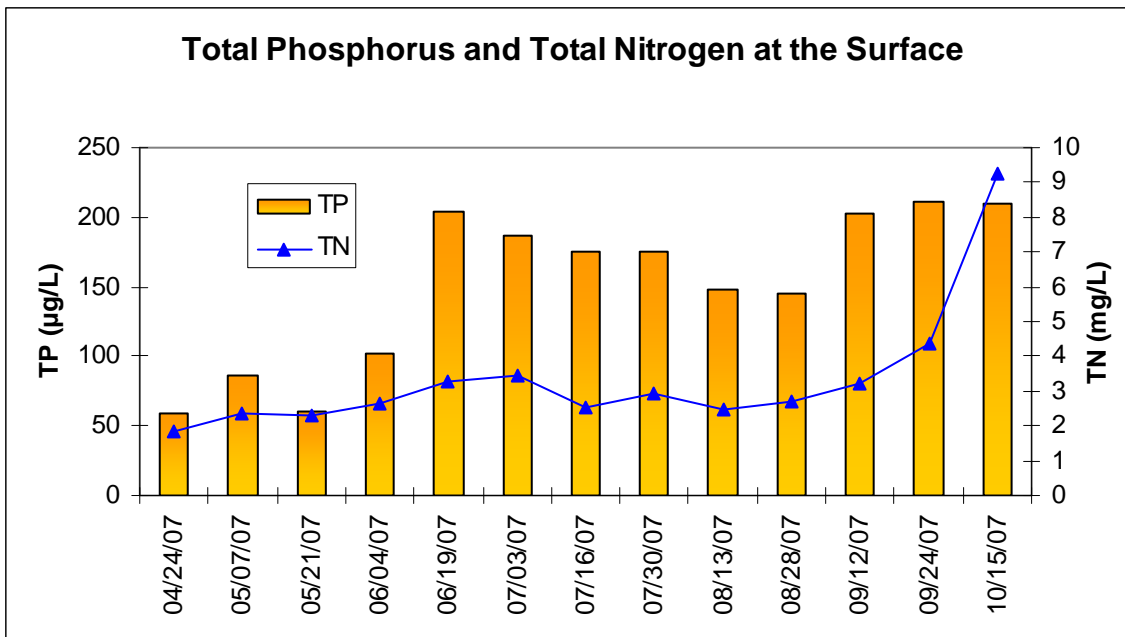
In addition, the shallow morphology of the lake is extremely conducive for internal loading of nutrients that are re-suspended from the sediments. The lake is frequently vulnerable to winter and summer fish kills due to the extreme eutrophic conditions.



Diamond Lake
Lake Water Quality Data

Date	Depth m	Temp ° C	DO mg/L	% DO	SpCond mS/cm	pH	TP µg/L	TN mg/L	Chla µg/L	Secchi m
04/24/07	0.393	14.96	9.25	91.7	0.371	7.51	59.6	1.844	5.29	1.80
04/24/07	1.05	14.95	9.13	90.6	0.371	7.51				1.80
04/24/07	2.043	14.86	9.18	90.8	0.37	7.54				1.80
04/24/07	2.384	14.57	2.59	25.5	0.373	7.4				1.80
05/07/07	0.349	14.87	9.76	96.6	0.324	8	86.8	2.333	14	1.19
05/07/07	1.06	14.82	9.52	94.2	0.323	8				1.19
05/07/07	2.079	14.66	8.44	83.2	0.324	7.92				1.19
05/07/07	2.338	14.52	0.44	4.3	0.332	7.62				1.19
05/21/07	0.172	18.1	10.67	113	0.405	8.09	60.3	2.274	7.335024	1.13
05/21/07	1.037	17.7	10.39	109.2	0.406	8.15				1.13
05/21/07	2.064	16.83	0.39	4	0.449	7.47				1.13
05/21/07	2.016	16.9	0.28	2.9	0.452	7.36				1.13
06/04/07	0.336	21.12	8.38	94.4	0.409	8.04	101.6	2.626	16.4	0.90
06/04/07	1.035	21.14	8.08	91	0.409	8.01				0.90
06/04/07	2.036	21.13	7.95	89.5	0.409	7.99				0.90
06/04/07	2.279	20.71	0.43	4.8	0.427	7.46				0.90
06/19/07	0.237	23.5	9.47	111.5	0.412	8.39	203.5	3.261	50.997	0.39
06/19/07	1.1	23.45	9.36	110.3	0.412	8.39				0.39
06/19/07	2.163	23.46	0.52	6.3	0.44	6.92				0.39
07/03/07							187.1	3.421	71.85504	0.40
07/16/07	0.501	24.74	12.74	153.6	0.383	8.4	174.9	2.547	58.45084	0.30
07/16/07	1.057	24.04	11.86	141.1	0.385	8.42				0.30
07/16/07	2.056	22.78	0.22	2.5	0.438	7.34				0.30
07/30/07	0.224	29.36	11.29	147.8	0.35	8.02	175.6	2.946	41.39301	0.35
07/30/07	1.019	28	10.78	137.8	0.348	8.06				0.35
07/30/07	2.052	26.54	0.25	3.1	0.374	6.76				0.35
08/13/07							148.7	2.47	49.8457	0.40
08/28/07	0.483	21.94	8.77	115.5	0.385	8.14	144.4	2.68	60.05765	0.35
08/28/07	1.059	21.9	8.56	112.9	0.3856	8.25				0.35
08/28/07	2.063	21.79	0.93	12.3	0.4083	7.96				0.35
08/28/07	2.121	21.8	0.49	6.5	0.407	7.9				0.35
09/12/07	0.638	17.6	11.44	137.8	0.3665	8.06	202.2	3.23	74.83743	0.30
09/12/07	1.052	17.56	11.69	140.8	0.3661	8.11				0.30
09/12/07	2.048	17.19	0.95	11.6	0.3966	7.82				0.30
09/24/07	0.37	19.62	10.14	110.9	0.397	7.13	211.2	4.382	64.24554	0.40
09/24/07	1.008	19.59	10.3	112.5	0.397	7.09				0.40
09/24/07	2.013	19.4	0.66	7.1	0.404	6.98				0.40
10/15/07	0.319	10.68	4.86	43.9	0.34	6.8	210.2	9.265	65.19072	0.45
10/15/07	1.024	10.68	4.67	42	0.34	6.76				0.45
10/15/07	2.049	10.68	4.48	40.4	0.34	6.75				0.45
10/15/07	2.335	10.97	0.57	5.1	0.34	6.69				0.45

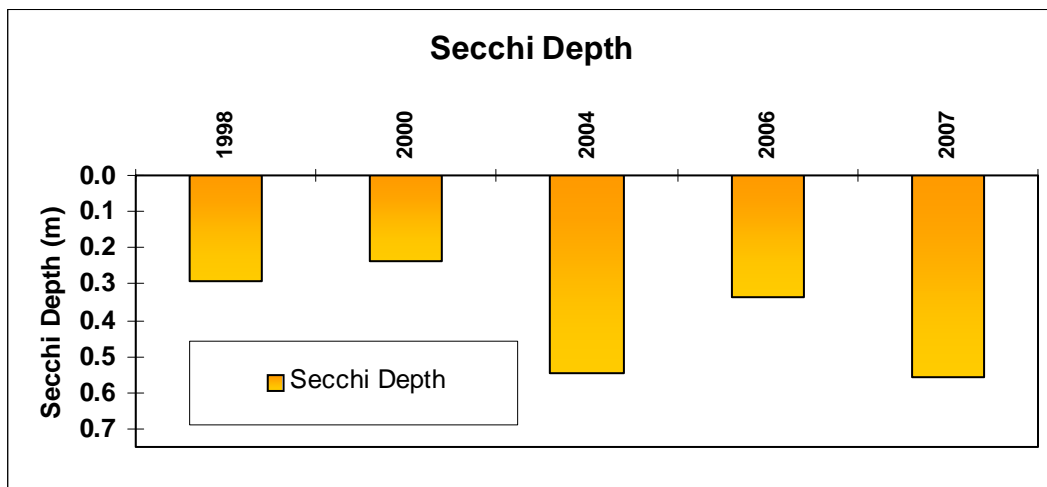
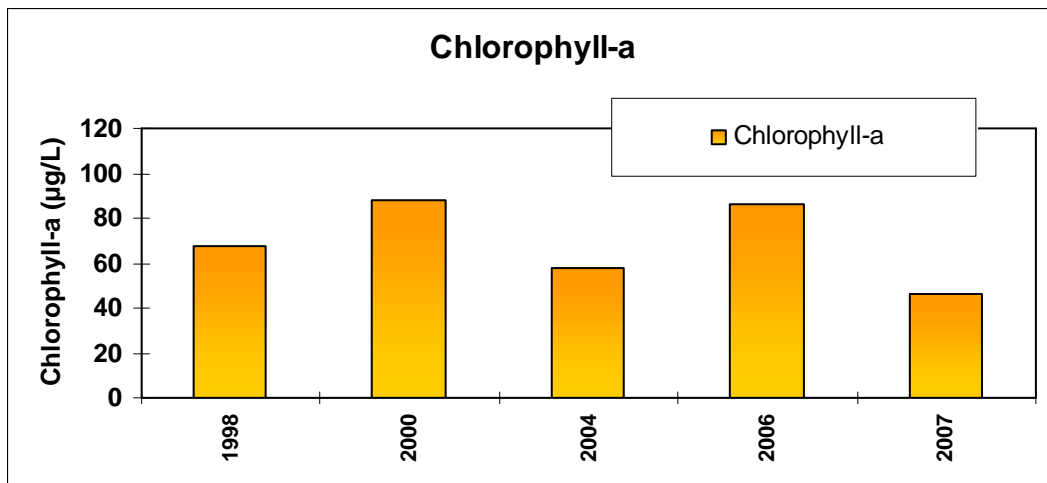
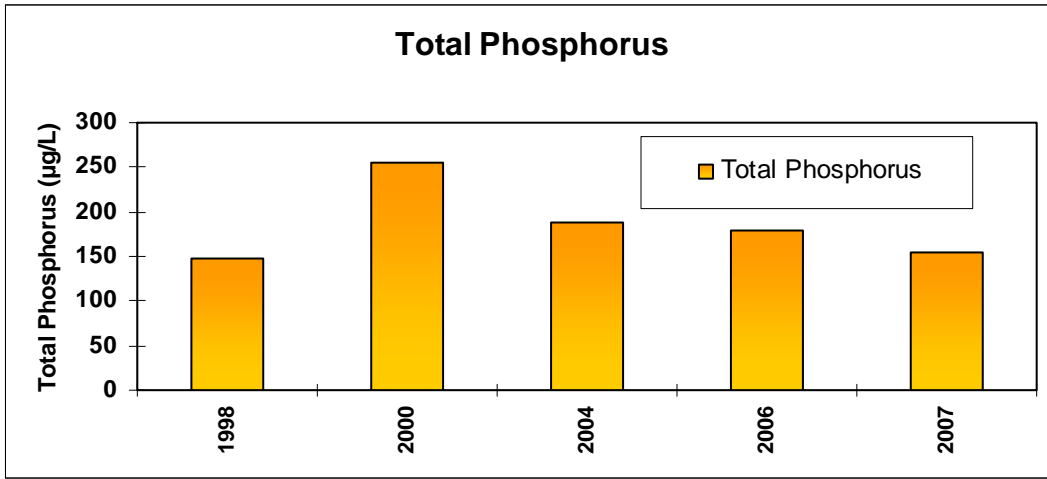
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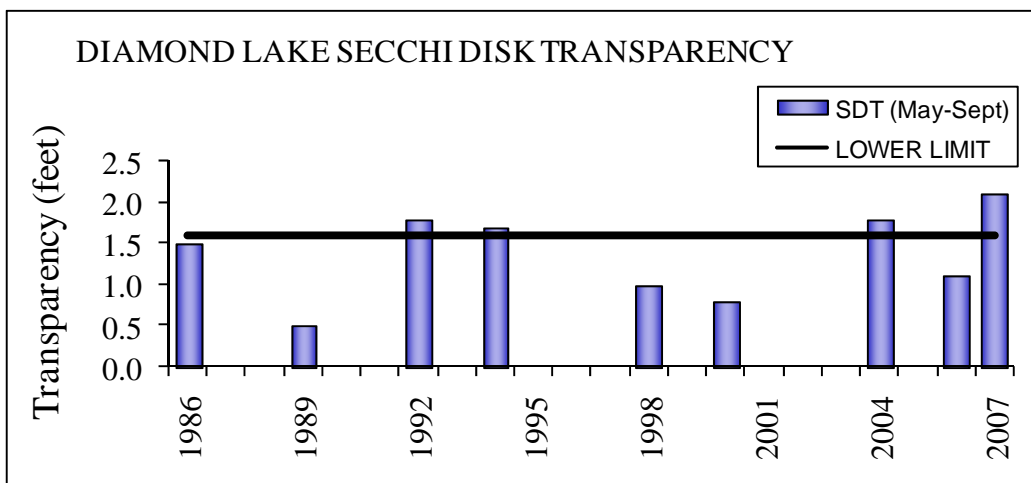
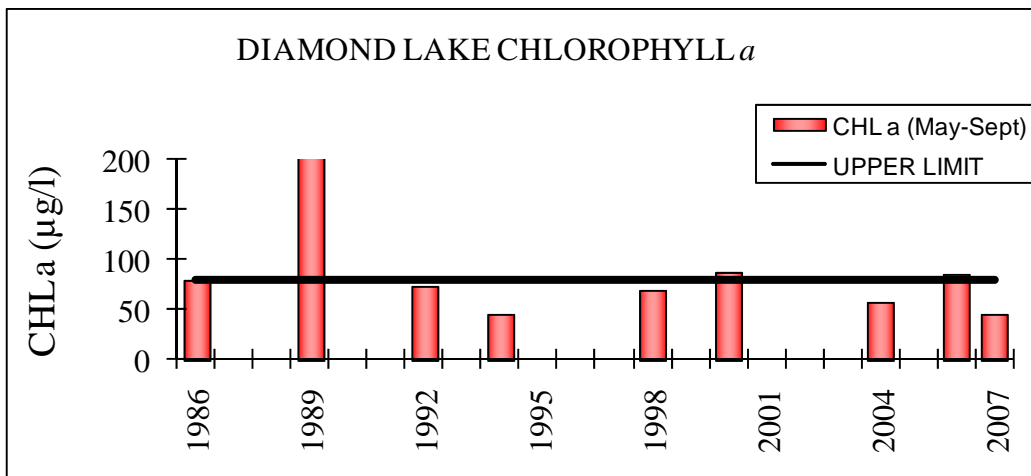
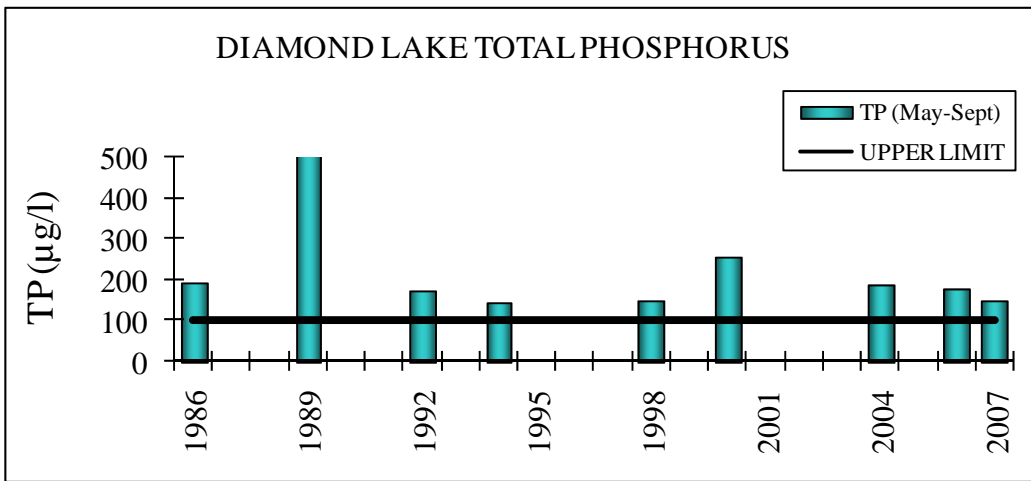
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Historical Data



Source: Three Rivers Park District
Summer Mean (May-Sept)

Diamond Lake Historical Data



Source: HCDES