

Penn Lake (27-0004) Nine Mile Creek Watershed District

Penn Lake is located in the City of Bloomington (Hennepin County). It has a maximum depth of 2.1 m (7.0 ft). The entire lake is considered littoral zone, which is the shallow 0 – 15 feet depth zone that is typically dominated by aquatic plants. Since the lake is relatively shallow, it does not maintain a thermocline, which is a density gradient caused by changing water temperatures throughout the water column.

This was the first year that the lake was involved in the CAMP. On each sampling day the lake was monitored for total phosphorus (TP), chlorophyll-a (CLA), total kjeldahl nitrogen (TKN), and secchi transparency, as well as the lake's perceived physical condition and recreational suitability. The resulting data are summarized in tables and figures on the following page.

2009 summer (May-September) data summary

<i>Parameter</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Grade</i>
TP (µg/l)	262.9	108.0	634.0	F
CLA (µg/l)	122.5	45.0	310.0	F
Secchi (m)	0.2	0.1	0.5	F
TKN (mg/l)	3.79	1.40	9.60	
Lake Grade				F

The lake received a lake grade of F in 2009. Additional years of monitoring are suggested for continuing to build the water quality database so as to better understand the lake's water quality and determine potential water quality trends.

Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

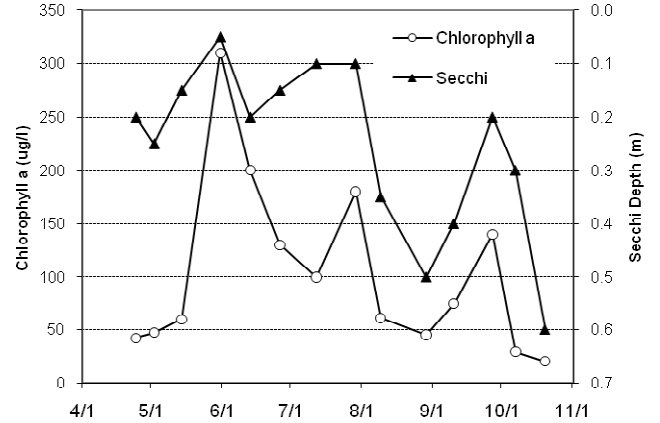
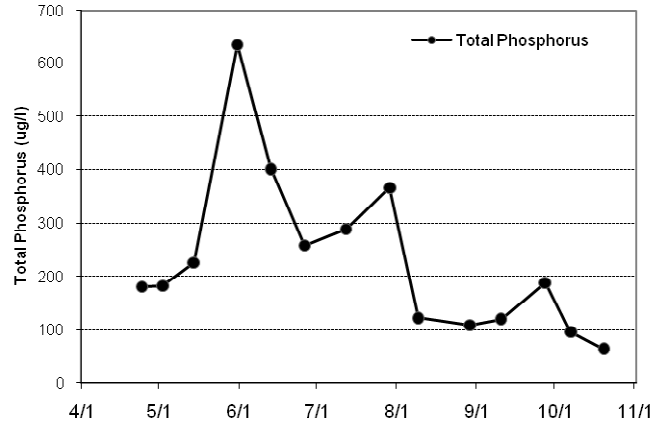
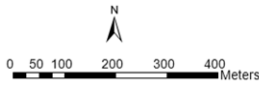
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at <http://www.dnr.state.mn.us/lakefind/>.

If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

**Penn Lake,
Maple Grove/
Plymouth, Hennepin Co.**

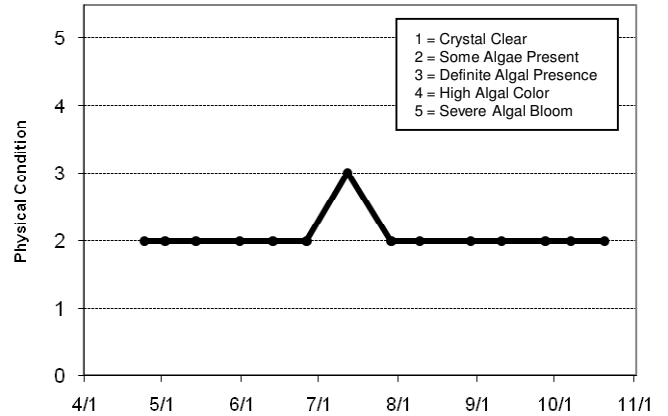
Lake ID: 270004-00
WD: Nine Mile Creek
Volunteers: Dan McManmion &
Tony Agnon

● Sampling site
Contours in meters



2009 Data

DATE	Surf Temp (°C)	Bot Temp (°C)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/24					42	180		0.2	2	5
5/2	16.2				47	182		0.3	2	5
5/14	19.7				60	225		0.2	2	5
5/31					310	634		0.1	2	5
6/13	28.3				200	401		0.2	2	5
6/26	31.3				130	258		0.2	2	5
7/12	30				100	288		0.1	3	5
7/29	24				180	366		0.1	2	5
8/9	27.1				61	122		0.4	2	4
8/29	22				45	108		0.5	2	4
9/10	26.4				75	120		0.4	2	4
9/27	19				140	188		0.2	2	5
10/7	12				29	96		0.3	2	4
10/20	10				20	64		0.6	2	4

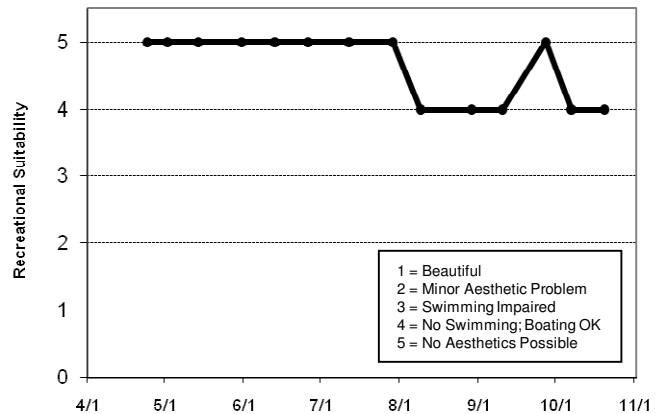


Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total Phosphorus												
Chlorophyll a												
Secchi Depth												
Lake Grade												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Phosphorus												
Chlorophyll a												
Secchi Depth												
Lake Grade												

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus						F
Chlorophyll a						F
Secchi Depth		F				F
Lake Grade						F



Source: Metropolitan Council and STORET data