O'Connor Lake (82-0002) *Lower St. Croix Valley Watershed Management Organization*

O'Connor Lake is a 38-acre lake located within Denmark Township (Washington County). There is little known morphological data available for the lake.

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.

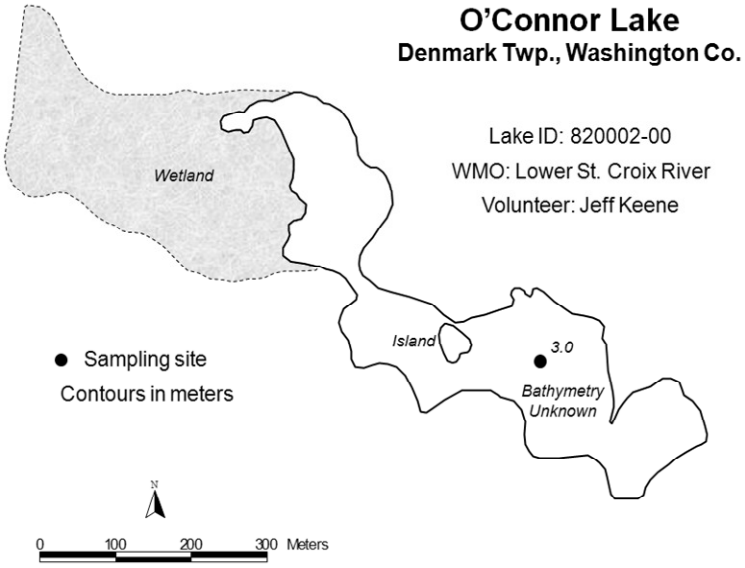
2009 summer (May-September) data summary

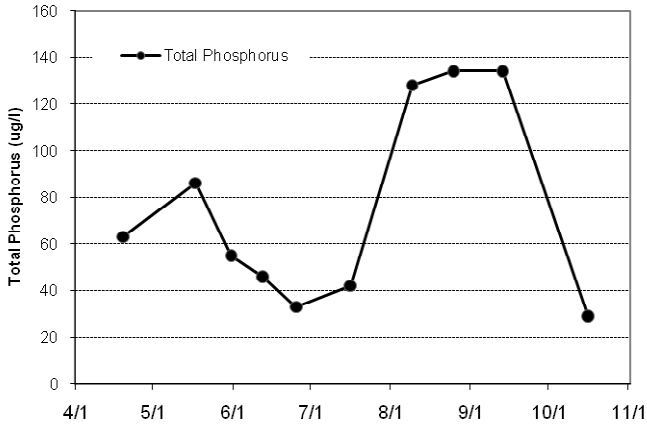
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	82.3	33.0	134.0	D
CLA (µg/l)	50.1	5.7	110.0	D
Secchi (m)	1.0	0.3	1.7	D
TKN (mg/l)	1.24	0.91	1.70	
			Lake Grade	D

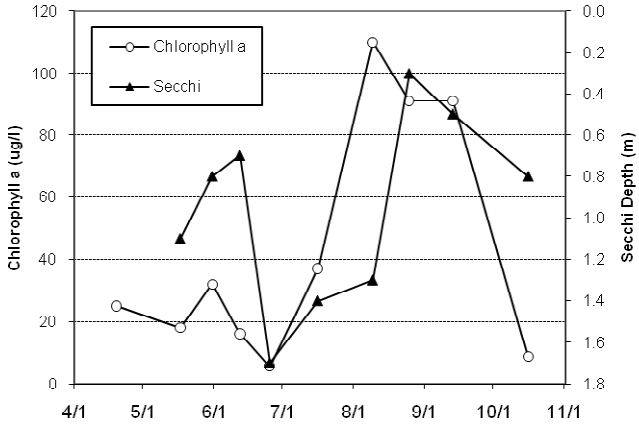
The lake received a lake grade of D for 2009, which is the worst grade received in its limited monitoring history. Additional years of monitoring are suggested for continuing to build the water quality database so as to better understand the lake's water quality and determine potential water quality 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.

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.

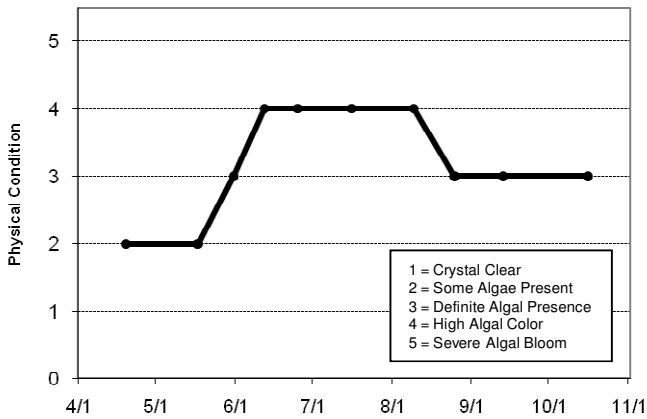






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/19	13.2				25	63			2	4
5/17	17.4				18	86		1.1	2	4
5/31	23.2				32	55		0.8	3	4
6/12	21.9				16	46		0.7	4	4
6/25	30.7				5.7	33		1.7	4	4
7/16	25.3				37	42		1.4	4	4
8/9	25.2				110	128		1.3	4	4
8/25	22.3				91	134		0.3	3	4
9/13	24.5				91	134		0.5	3	4
10/16	7.1				8.8	29		0.8	3	4



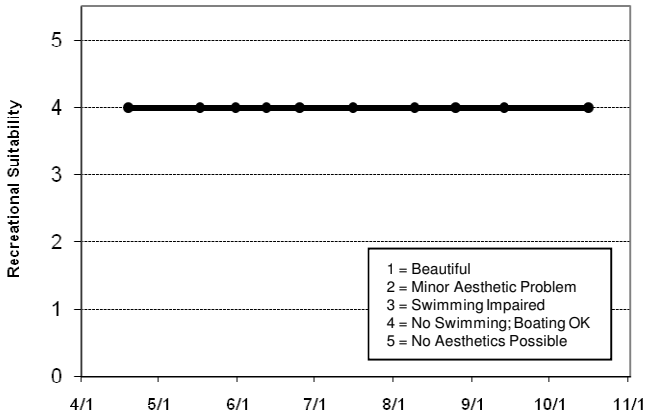
Lake Water Quality Grades Based on Summertime Averages

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		C	C	C	C	D
Chlorophyll a		B	A	A	B	D
Secchi Depth		C	C	F	C	D
Lake Grade		**C**	**B**	**C**	**C**	**D**

Source: Metropolitan Council and STORET data



O'Dowd Lake (70-0095) *City of Shakopee*

O'Dowd Lake is located in both Louisville Township and the City of Shakopee (Scott County). It is considered a Priority Lake by the Metropolitan Council for its high regional recreation value (METC 2007). The lake's surface area is 258 acres and has a maximum depth of 6.7 m (roughly 22 feet). Approximately 63 percent of the lake's surface area is considered littoral zone, which is the 0-15 feet depth zone of aquatic plant dominance. The MN DNR has designated the lake as being infested with Eurasion water milfoil (*Myriophyllum spicatum*).

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	36.7	11.0	69.0	C
CLA (µg/l)	25.4	2.6	51.0	C
Secchi (m)	1.6	0.7	3.0	C
TKN (mg/l)	1.29	0.77	1.80	
			Lake Grade	C

The lake received a lake grade of C for 2009. The lake's water quality seems to be represented by a lake grade of C with the occassional D. Continued monitoring is suggested to increase the ability to detect 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.

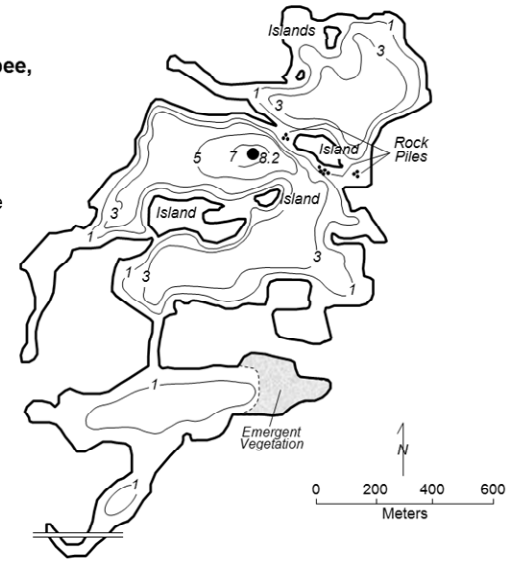
O'Dowd Lake

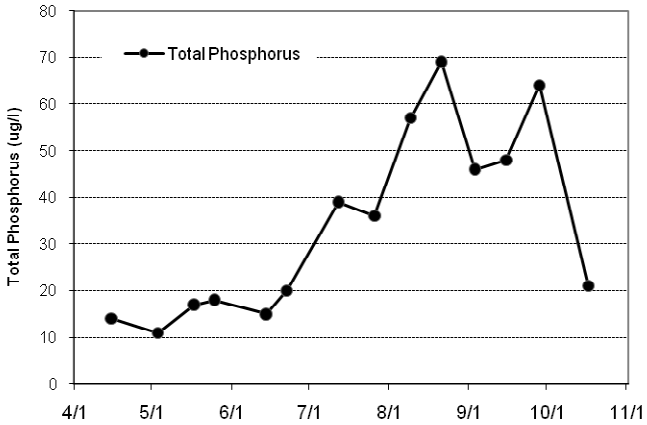
Louisville Twp./Shakopee, Scott Co.

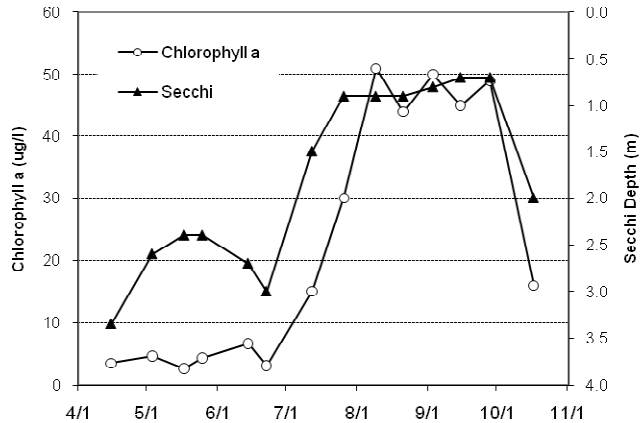
LAKE ID: 700095-00
WMO: Shakopee Basin
Volunteers: Sandy & Mike Boyce

● Sampling site

Contours in meters

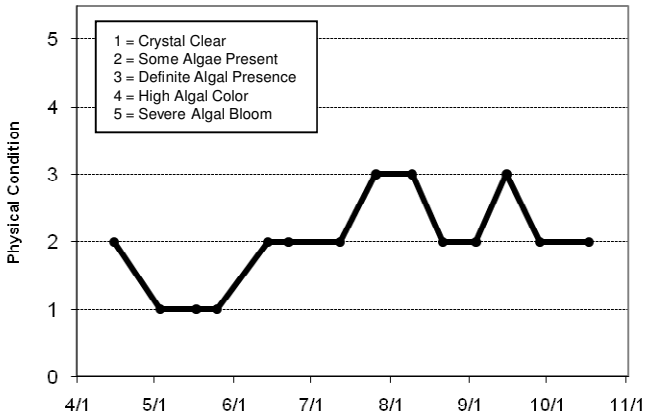






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/15	11.1				3.5	14		3.4	2	1
5/3	14.4				4.6	11		2.6	1	1
5/17	16.9				2.6	17		2.4	1	1
5/25	19.7				4.3	18		2.4	1	1
6/14	22				6.6	15		2.7	2	2
6/22	27				3.1	20		3.0	2	2
7/12	25.2				15	39		1.5	2	
7/26	23.9				30	36		0.9	3	2
8/9	25.1				51	57		0.9	3	2
8/21	22				44	69		0.9	2	2
9/3	22.8				50	46		0.8	2	2
9/15	25.2				45	48		0.7	3	3
9/28	20.2				49	64		0.7	2	2
10/17	9				16	21		2.0	2	2

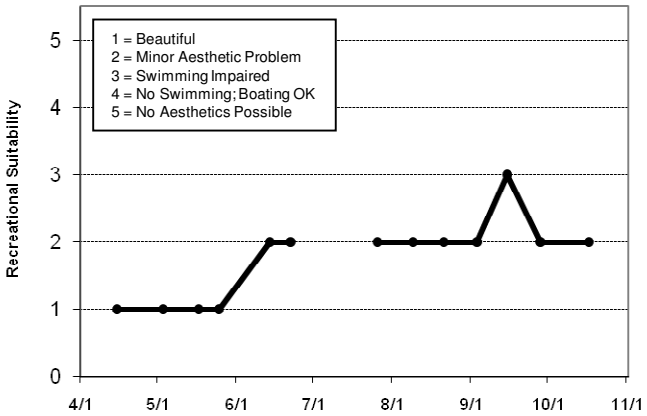


Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus		C	D	C	C	C
Chlorophyll a		D	C	D	C	C
Secchi Depth		C	D	C	C	C
Lake Grade		**C**	**D**	**C**	**C**	**C**



Source: Metropolitan Council and STORET data

Olson Lake (82-0103) *Valley Branch Watershed District*

Olson Lake is located in the City of Lake Elmo (Washingon County). It is considered a Priority Lake by the Metropolitan Council for its exceptional water clarity (METC 2007). The lake has a surface area of 89 acres and a mean and maximum depth of 2.1 (6.9 feet) and 4.5 m (14.8 feet). The entire area of the lake is considered littoral zone which is the 0-15 feet depth zone of aquatic plant dominance. Furthermore, the lake does not maintain a thermocline, which is a density gradient caused by changing water temperatures throughout the water column. The MN DNR has designated the lake as being infested with Eurasion water milfoil (*Myriophyllum spicatum*).

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	18.7	11.0	28.0	A
CLA (µg/l)	5.3	1.8	9.7	A
Secchi (m)	3.2	2.5	3.6	A
TKN (mg/l)	0.78	0.60	1.00	
			Lake Grade	A

The historical water quality database for the lake indicates that the lake grades have improved since the 1980's. The lake received a lake grade of C in 1984, as well as receiving Secchi grades of C in 1984-1986, and 1988-1990. Lake Grades of B were received in 1991, 1993, and 1995. More recently, the lake has recorded lake grades of an A in 2000 and 2003-2004, before falling back to a lake grade of B in 2005 - 2007. This year's and last year's lake grades of A are evidence of the continued improvement in water quality.

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.

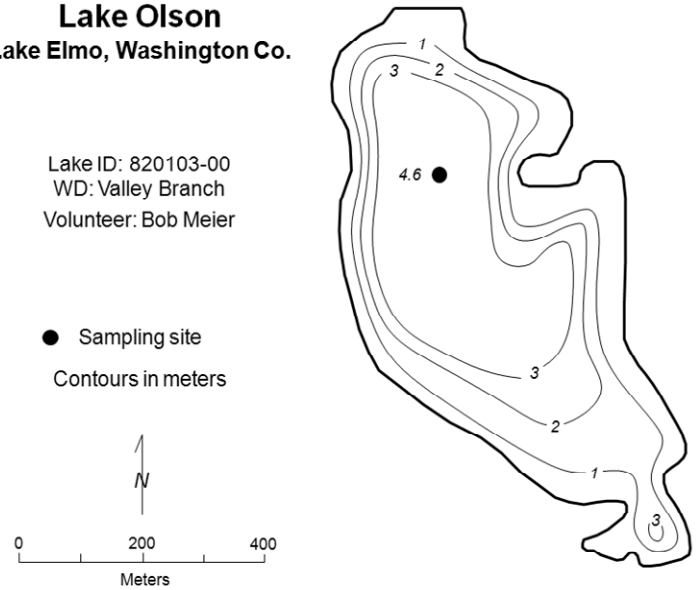
Lake Olson

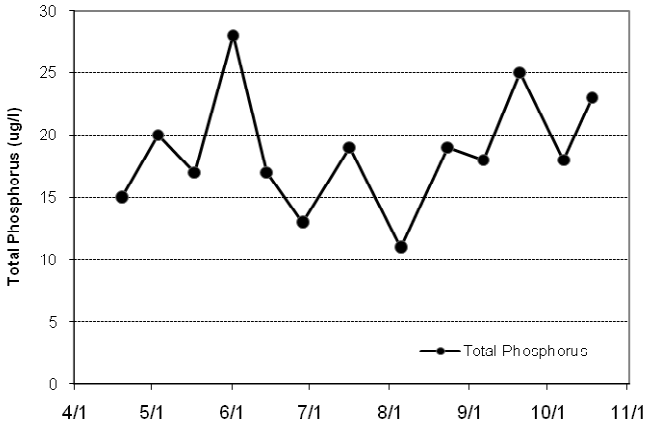
Lake Elmo, Washington Co.

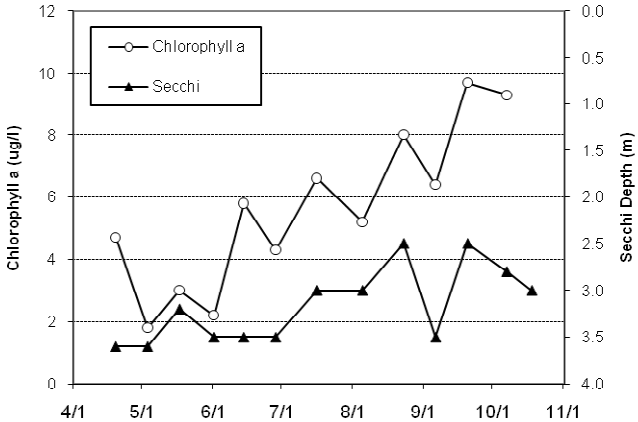
Lake ID: 820103-00
WD: Valley Branch
Volunteer: Bob Meier

● Sampling site

Contours in meters

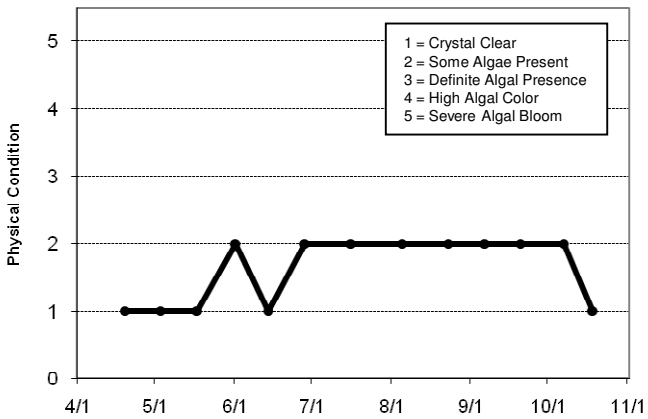






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/19	12.7				4.7	15		3.6	1	1
5/3	14.6				1.8	20		3.6	1	1
5/17	18.7				3	17		3.2	1	1
6/1	21.7				2.2	28		3.5	2	1
6/14	22.5				5.8	17		3.5	1	1
6/28	22.5				4.3	13		3.5	2	1
7/16	23.2				6.6	19		3.0	2	1
8/5	24.3				5.2	11		3.0	2	2
8/23	23.5				8	19		2.5	2	2
9/6	23.1				6.4	18		3.5	2	2
9/20	23.5				9.7	25		2.5	2	2
10/7	12.8				9.3	18		2.8	2	1
10/18	7.6					23		3.0	1	1



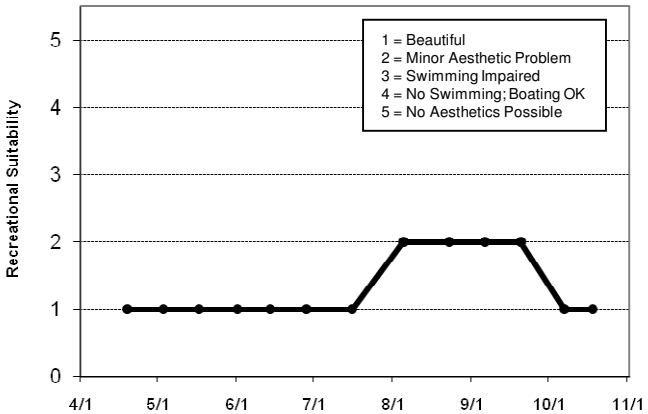
Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	A	B	C	B	A	A
Chlorophyll a	A	B	B	A	A	A
Secchi Depth	A	B	B	B	B	A
Lake Grade	**A**	**B**	**B**	**B**	**A**	**A**

Source: Metropolitan Council and STORET data



Orchard Lake (19-0031) *Black Dog Lake Watershed Management Organization*

Orchard Lake is located in the City of Lakeville (Dakota County). It is considered a Priority Lake by the Metropolitan Council for its high regional recreation value (METC 2007). It has a surface area of 250 acres.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	15.2	9.0	19.0	A
CLA (µg/l)	3.6	1.7	7.9	A
Secchi (m)	3.7	2.8	5.1	A
TKN (mg/l)	0.76	0.63	1.00	
			Lake Grade	A

The lake received a lake grade of A for 2009, which is the second time that the lake received an A grade. Continued monitoring is suggested to determine if the water quality of 2008 and 2009 are indicators of a potential improving water quality trend.

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.

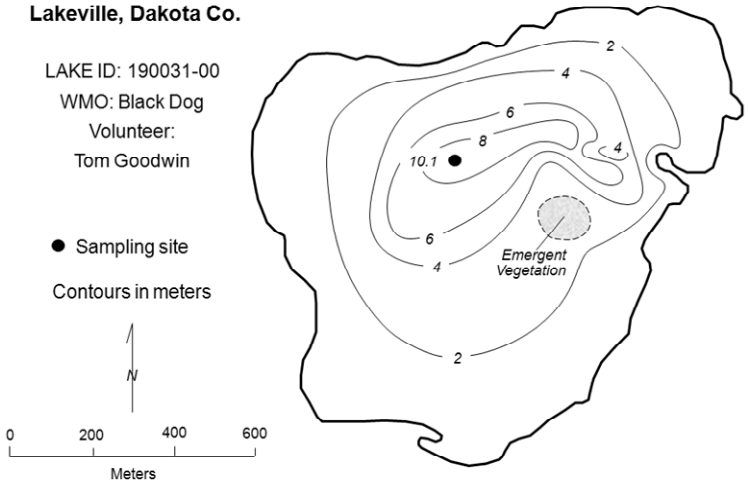
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

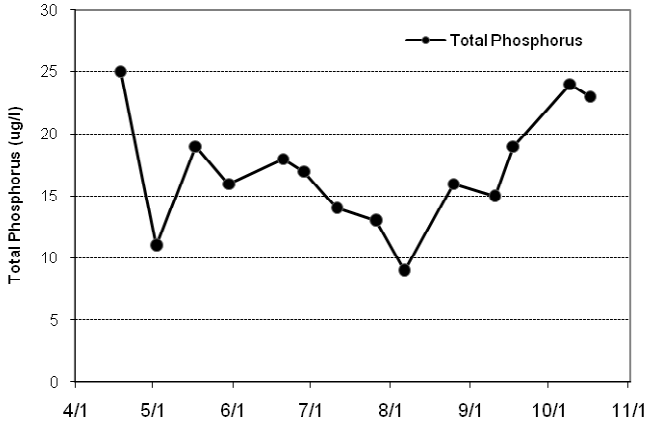
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

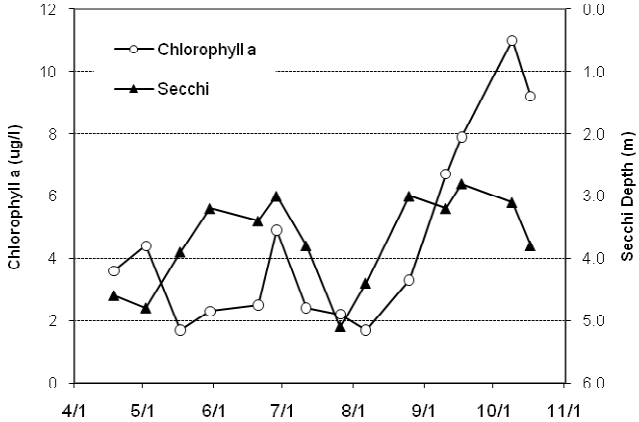
Orchard Lake

Lakeville, Dakota Co.

LAKE ID: 190031-00
WMO: Black Dog
Volunteer:
Tom Goodwin

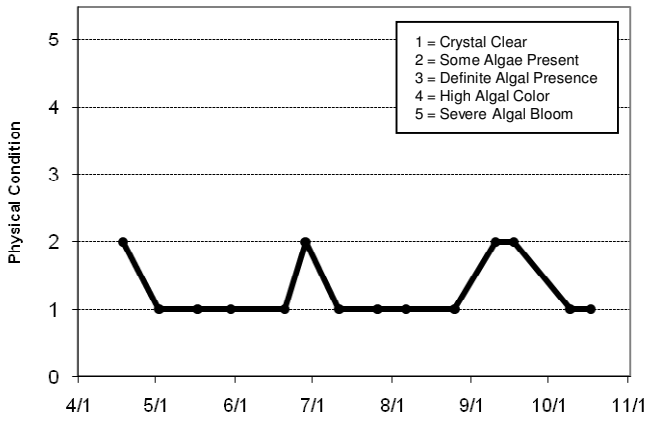






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/18	13.7				3.6	25		4.6	2	1
5/2	13.5				4.4	11		4.8	1	1
5/17	17.1				1.7	19		3.9	1	1
5/30	20.5				2.3	16		3.2	1	1
6/20	25.3				2.5	18		3.4	1	1
6/28	25.3				4.9	17		3.0	2	1
7/11	25.5				2.4	14		3.8	1	1
7/26	24				2.2	13		5.1	1	1
8/6	25.7				1.7	9		4.4	1	1
8/25	24.1				3.3	16		3.0	1	1
9/10	24				6.7	15		3.2	2	1
9/17	25.3				7.9	19		2.8	2	1
10/9	12.8				11	24		3.1	1	1
10/17	9.5				9.2	23		3.8	1	1

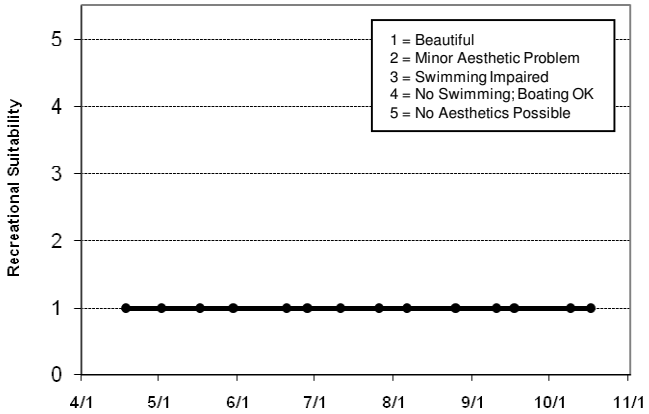


Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	C	B	C	C	A	A
Chlorophyll a	B	B	B	C	B	A
Secchi Depth	B	B	B	C	A	A
Lake Grade	**B**	**B**	**B**	**C**	**A**	**A**



Source: Metropolitan Council and STORET data

Parkers Lake (27-0107) *Bassett Creek Watershed Management Organization*

Parkers Lake is located in the City of Plymouth (Hennepin County). It has a surface area of 97 acres. The mean and maximum depths of the lake are 3.7 m (12 ft) and 11.3 m (37 ft), respectively. The MN DNR has designated the lake as being infested with Eurasian water milfoil (*Myriophyllum spicatum*). The lake is listed as impaired by the MPCA for mercury content in fish.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	33.4	15.0	110.0	C
CLA (µg/l)	6.8	1.3	17.0	A
Secchi (m)	2.7	1.0	4.3	B
TKN (mg/l)	1.05	0.61	1.80	
			Lake Grade	B

The lake received a lake grade of B for 2009, which is similar to some previous years'annual lake grades. The lake has received lake grades varying from C to A to B over the past 29 years as indicated by the historical water quality database, but the lake has not experienced a C lake grade since 1999. The lake has received only A and B lake grades from 2000 through 2009. Continued monitoring is suggested to determine potential trends in the lake's water quality.

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.

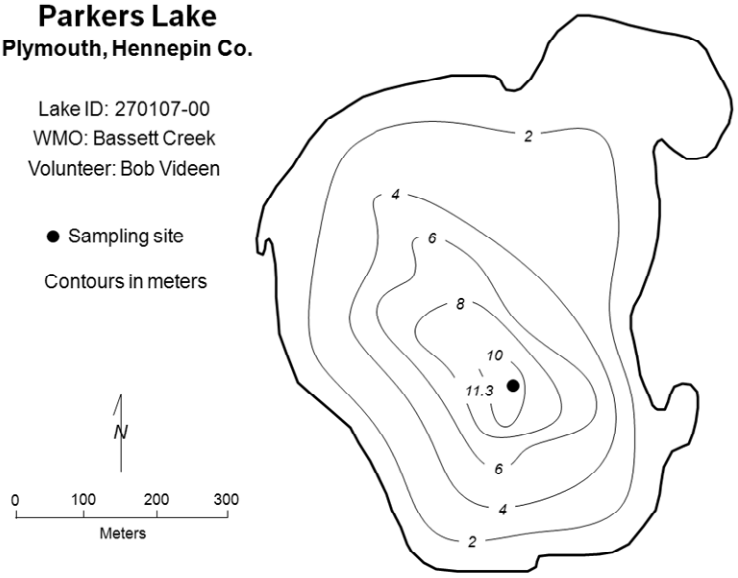
Parkers Lake

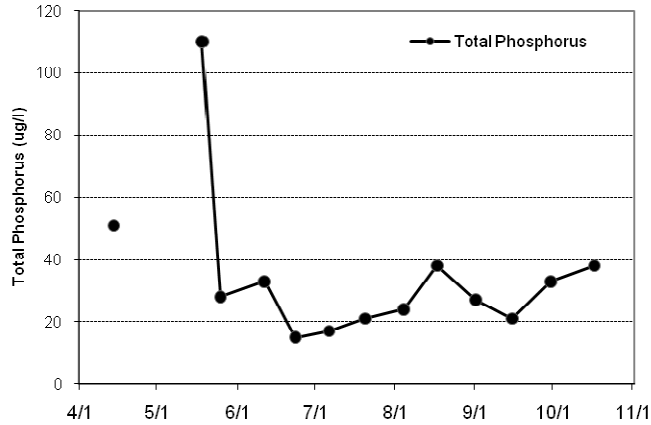
Plymouth, Hennepin Co.

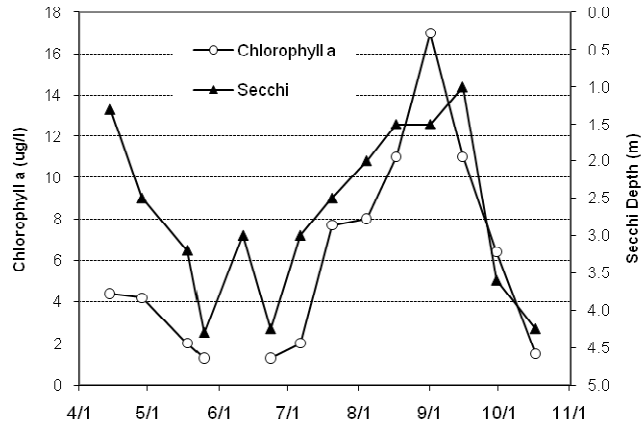
Lake ID: 270107-00
WMO: Bassett Creek
Volunteer: Bob Videen

● Sampling site

Contours in meters

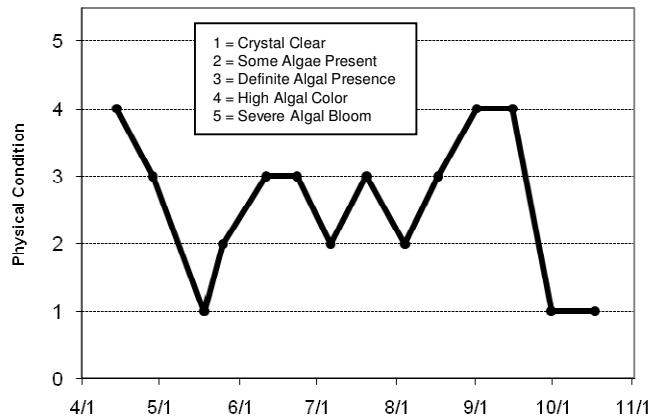






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/14	12				4.4	51		1.3	4	5
4/28	14				4.2			2.5	3	3
5/18	18				2	110		3.2	1	1
5/25	21				1.3	28		4.3	2	2
6/11	19					33		3.0	3	2
6/23	27				1.3	15		4.3	3	3
7/6	24				2	17		3.0	2	2
7/20	22				7.7	21		2.5	3	2
8/4	24				8	24		2.0	2	2
8/17	26				11	38		1.5	3	3
9/1	22				17	27		1.5	4	4
9/15	26				11	21		1.0	4	4
9/30	18				6.4	33		3.6	1	2
10/17	11				1.5	38		4.3	1	2



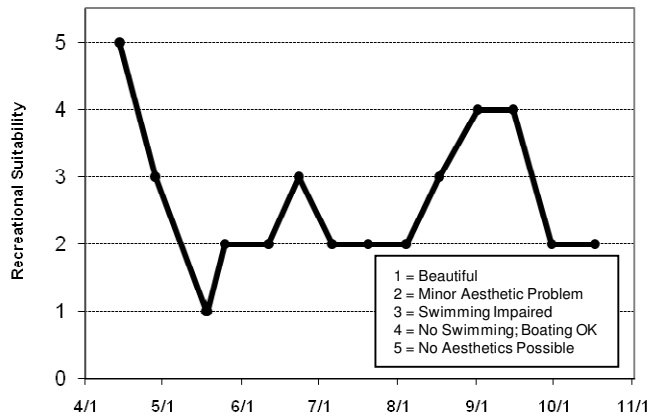
Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	B	C	C	B	B	C
Chlorophyll a	A	B	A	A	A	A
Secchi Depth	C	B	A	B	B	B
Lake Grade	**B**	**B**	**B**	**B**	**B**	**B**

Source: Metropolitan Council and STORET data



Pat Lake (82-0125) *Browns Creek Watershed District*

Pat Lake is a small 13-acre lake located in Washington County. There is little known morphological data available for the lake.

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. Depth profiles for temperature and dissolved oxygen were also measured. The resulting data are summarized in tables and figures on the following page.

2009 summer (May-September) data summary

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	41.3	23.0	87.0	C
CLA (µg/l)	10.2	4.4	20.0	B
Secchi (m)	1.5	1.2	1.7	C
TKN (mg/l)	0.95	0.75	1.10	
			Lake Grade	C

The lake received a lake grade of C for 2009. There are only 4 monitoring seasons of data, so there are insufficient quantities of data to determine trends. 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.

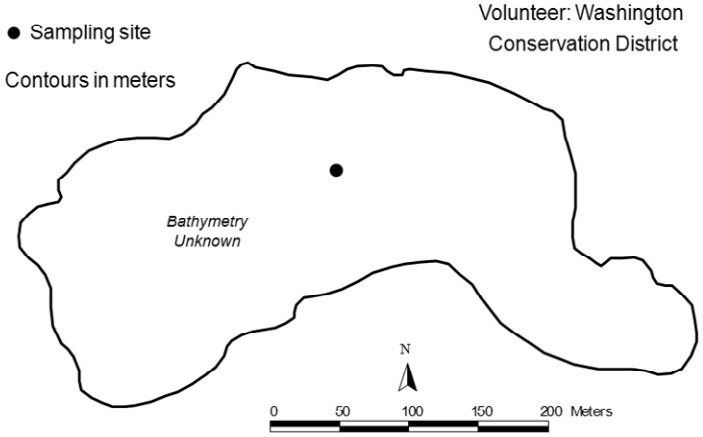
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

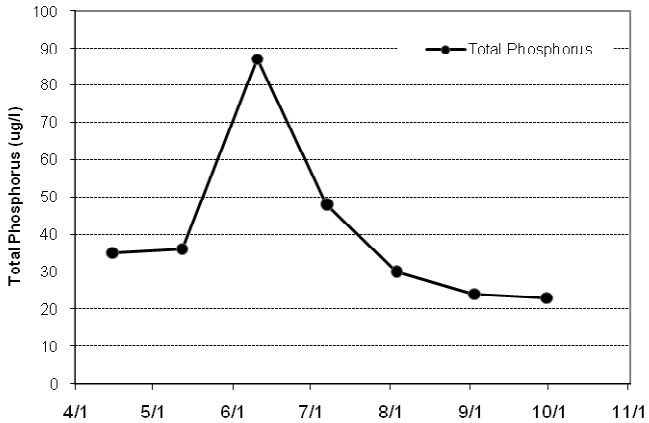
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

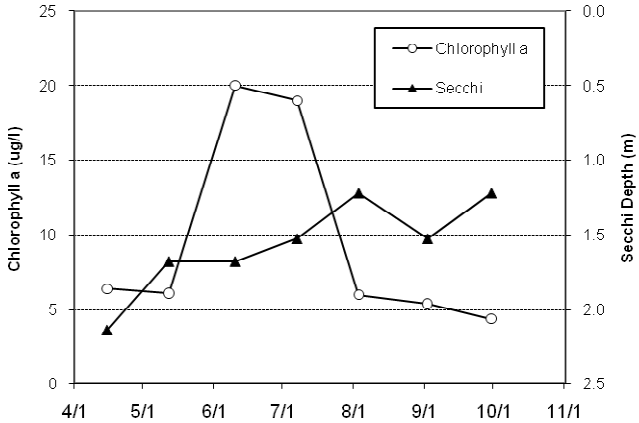
Pat Lake

Grant, Washington Co.

Lake ID: 820125-00
WD: Browns Creek
Volunteer: Washington Conservation District

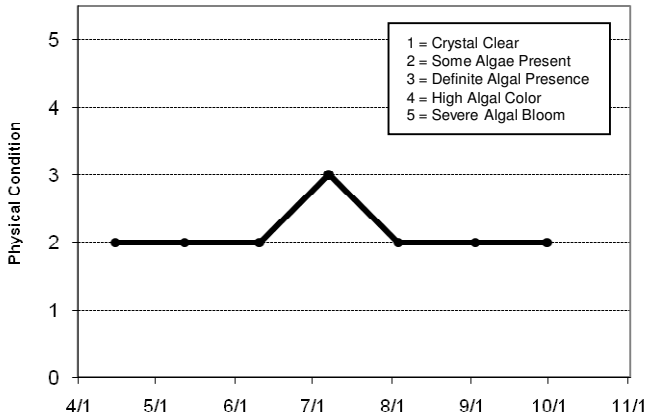






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/15	12.5	12.3	10.87	9.62	6.4	35		2.1	2	1
5/12	15.7	15.5	9.88	1.29	6.1	36		1.7	2	3
6/10	16.5	16	9.04	0.71	20	87		1.7	2	4
7/7	25.3	22.1	11.31	0.82	19	48		1.5	3	4
8/3	24.5	21.8	10.08	0.57	6	30		1.2	2	4
9/2	20.1	20	9.11	0.99	5.4	24		1.5	2	2
9/30	12.1	12.4	10.41	2.89	4.4	23		1.2	2	2



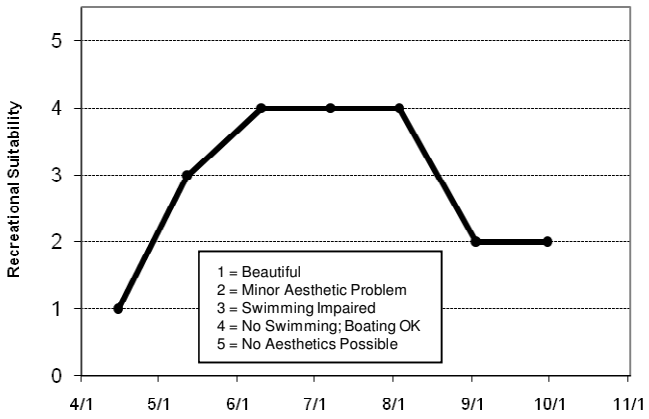
Lake Water Quality Grades Based on Summertime Averages

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			D	C	C	C
Chlorophyll a			C	A	B	B
Secchi Depth			C	C	C	C
Lake Grade			**C**	**B**	**C**	**C**

Source: Metropolitan Council and STORET data



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

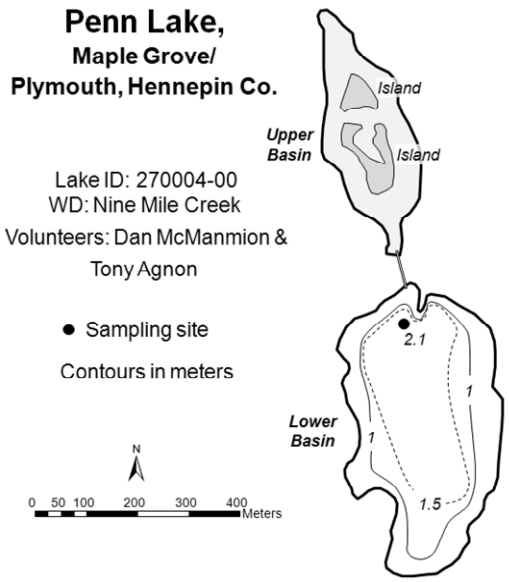
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	262.9	108.0	634.0	F
CLA (µg/l)	122.5	45.0	310.0	F
Secchi (m)	0.2	0.1	0.5	F
TKN (mg/l)	3.79	1.40	9.60	
			Lake Grade	F

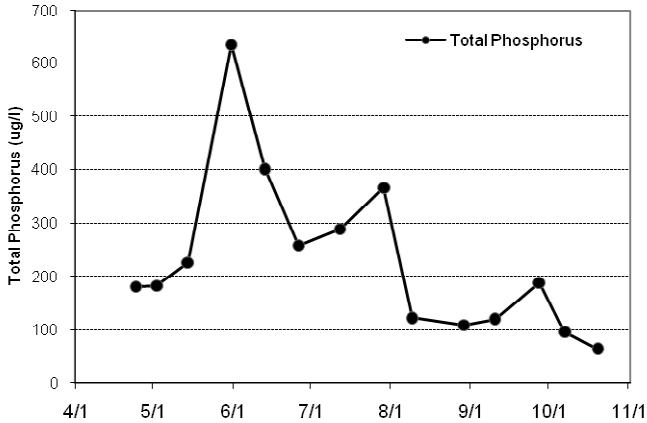
The lake received a lake grade of F in 2009. Additional years of monitoring are suggested for continuing to build the water quality database so as to better understand the lake's water quality and determine potential water quality trends.

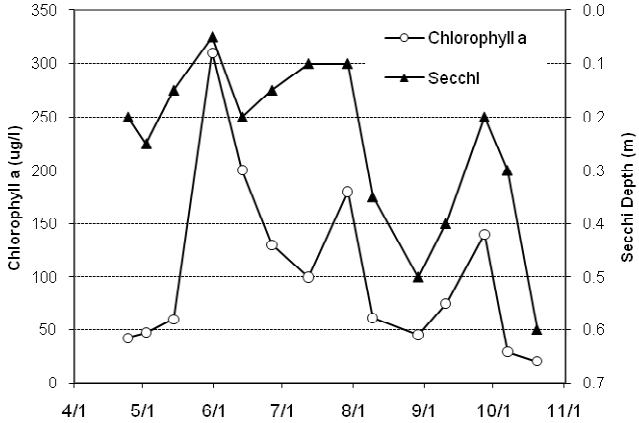
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

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.

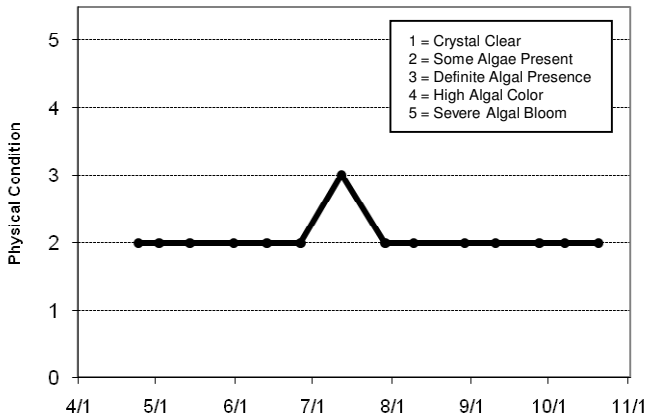






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	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



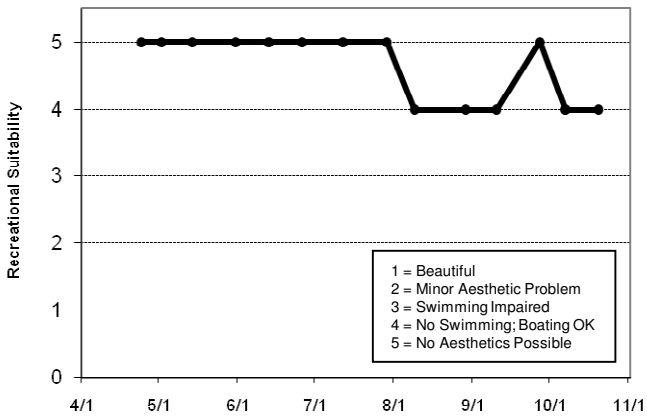
Lake Water Quality Grades Based on Summertime Averages

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



Peter Lake (27-0147-02) *Pioneer Sarah Creek Watershed Management Commission*

Peter Lake is located in the City of Medina (Hennepin County). It has a maximum depth of 20.7 m (68 ft). This was the first year that the lake was part of 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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	35.2	18.0	59.0	C
CLA (µg/l)	13.3	1.3	28.0	B
Secchi (m)	3.9	2.3	6.4	A
TKN (mg/l)	1.27	0.98	1.70	
			Lake Grade	B

The lake received a lake grade of B 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/.

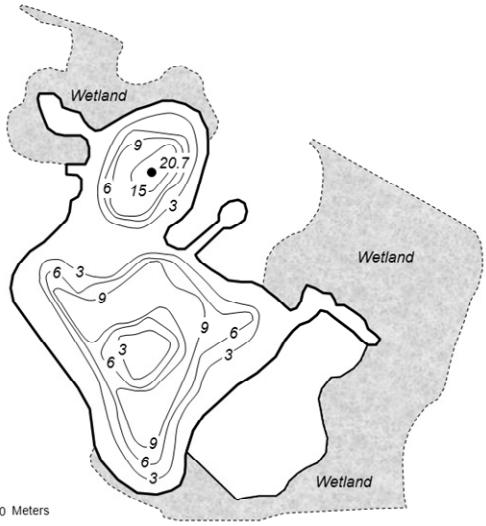
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

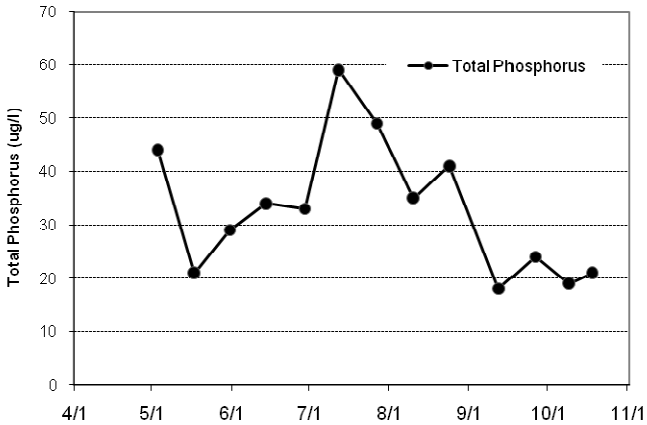
Peter Lake,
Medina, Hennepin Co.

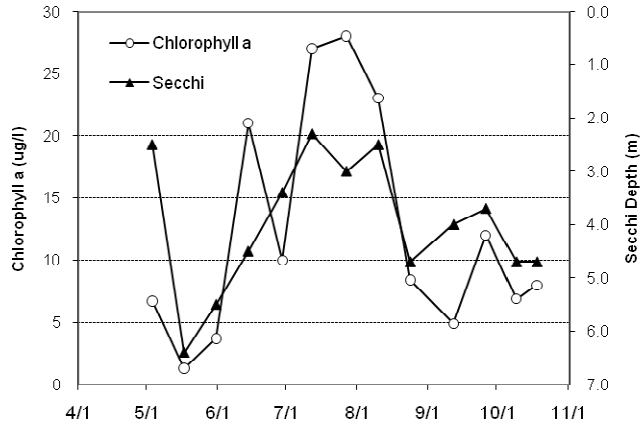
Lake ID: 270147-02
WMO: Pioneer-Sarah Cr.
Volunteers:
Tim & Rita Lambrecht

● Sampling site

Contours in meters

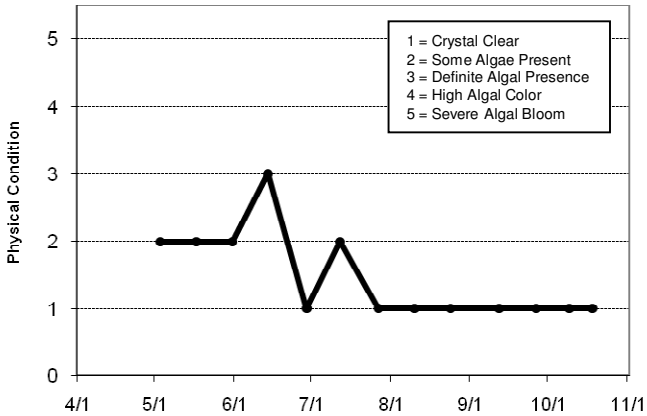






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/3	14.6				6.7	44		2.5	2	1
5/17	17.1				1.3	21		6.4	2	1
5/31	20				3.7	29		5.5	2	1
6/14	24				21	34		4.5	3	1
6/29	22.4				10	33		3.4	1	1
7/12	25.6				27	59		2.3	2	1
7/27	25.3				28	49		3.0	1	1
8/10	26.1				23	35		2.5	1	1
8/24	22.6				8.4	41		4.7	1	1
9/12	23.2				4.9	18		4.0	1	1
9/26	21.5				12	24		3.7	1	1
10/9	11.7				6.9	19		4.7	1	1
10/18	9.1				8	21		4.7	1	1



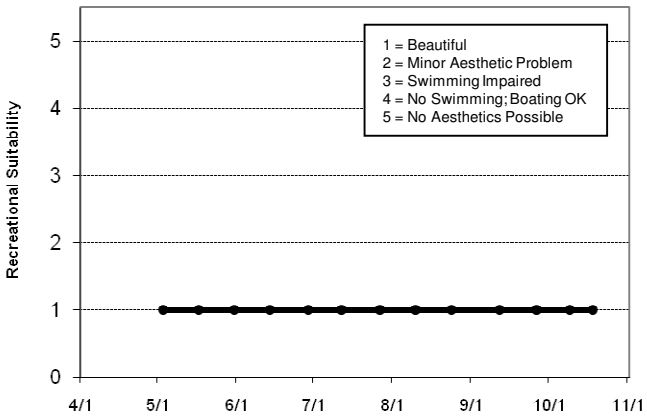
Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus						C
Chlorophyll a						B
Secchi Depth						A
Lake Grade						**B**

Source: Metropolitan Council and STORET data



Pike Lake (27-0111-02) *Shingle Creek Watershed Mangement Commission*

Pike Lake is located in the Cities of Maple Grove and Plymouth (Hennepin County). It is considered a Priority Lake by the Metropolitan Council for its high regional recreation value (METC 2007). It has a maximum depth of 6.7 m (22 feet). Most of the lake is considered littoral zone, which is the shallow 0 – 15 feet depth zone that is typically dominated by aquatic plants.

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

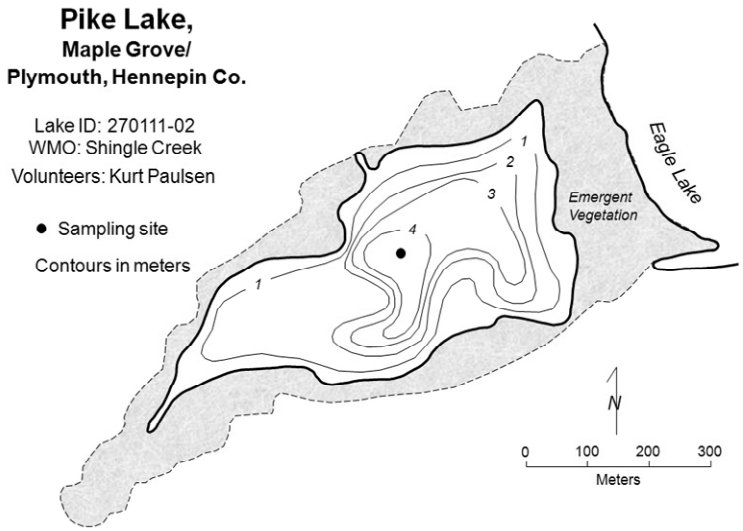
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	70.6	40.0	115.0	D
CLA (µg/l)	33.5	13.0	49.0	C
Secchi (m)	1.1	0.7	1.6	D
TKN (mg/l)	1.58	1.30	1.90	
			Lake Grade	D

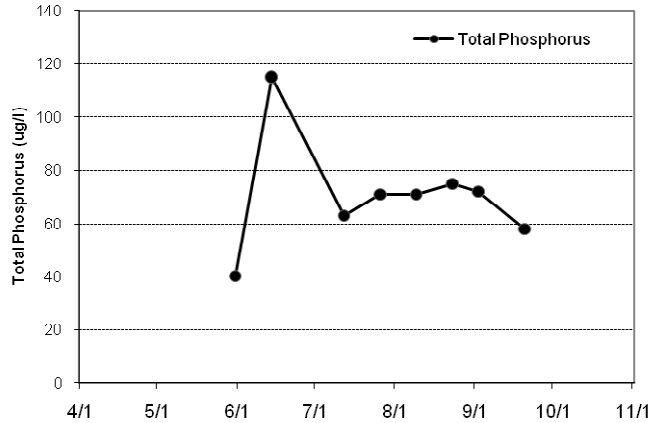
The lake received a lake grade of C in 2009, which is consistent with its historical database. Additional years of monitoring are suggested for continuing to build the water quality database so as to better understand the lake's water quality and determine potential water quality trends.

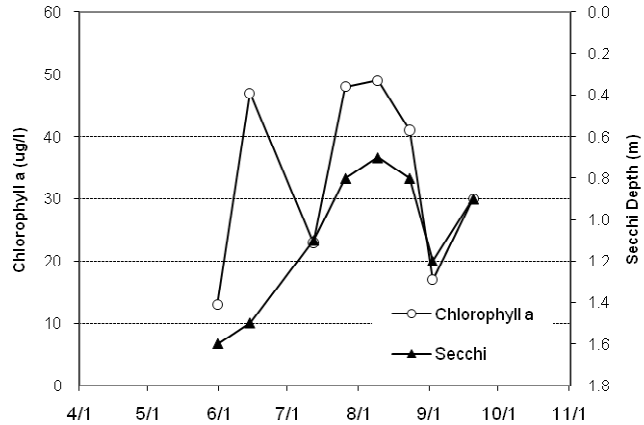
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

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.

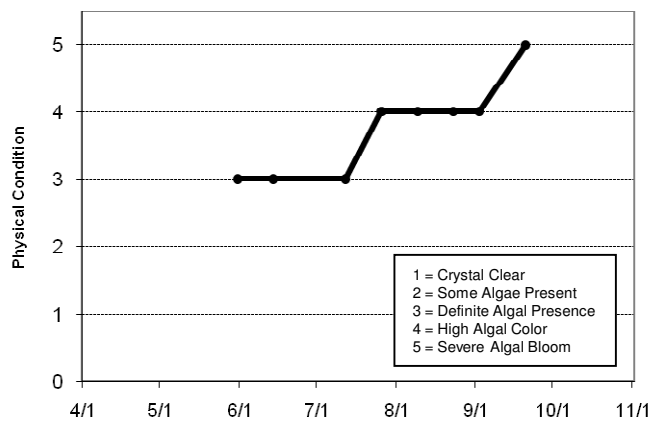






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/31	20.5				13	40		1.6	3	4
6/14	20.1				47	115		1.5	3	4
7/12	24.5				23	63		1.1	3	4
7/26	24.2				48	71		0.8	4	4
8/9	26.2				49	71		0.7	4	4
8/23	21				41	75		0.8	4	4
9/2	21				17	72		1.2	4	4
9/20	23.5				30	58		0.9	5	4



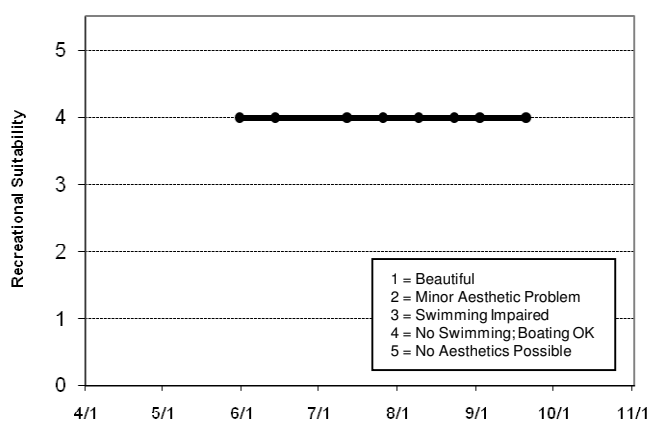
Lake Water Quality Grades Based on Summertime Averages

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					C	D	D		C			
Chlorophyll a					C	C	C		B			
Secchi Depth				D	D	C	D		C			
Lake Grade					**C**	**C**	**D**		**C**			

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus				C		D
Chlorophyll a				B		C
Secchi Depth				D		D
Lake Grade				**C**		**D**

Source: Metropolitan Council and STORET data



Pine Tree Lake (82-0122) *Rice Creek Watershed District*

Pine Tree Lake, located on the eastern edge of the City of Dellwood (Washington County), covers an area of 174 acres. It has a maximum depth of 7.9 m (26 feet), and a mean depth of 3.0 m (10 feet).

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	19.6	11.0	29.0	A
CLA (µg/l)	4.3	1.7	7.7	A
Secchi (m)	3.1	2.1	4.0	A
TKN (mg/l)	0.76	0.57	0.94	
			Lake Grade	A

The lake received a lake grade of A in 2009, which is the best grade it has received in METC monitoring history. Further monitoring is suggested to continue to build the water quality database for increasing power to detect 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/.

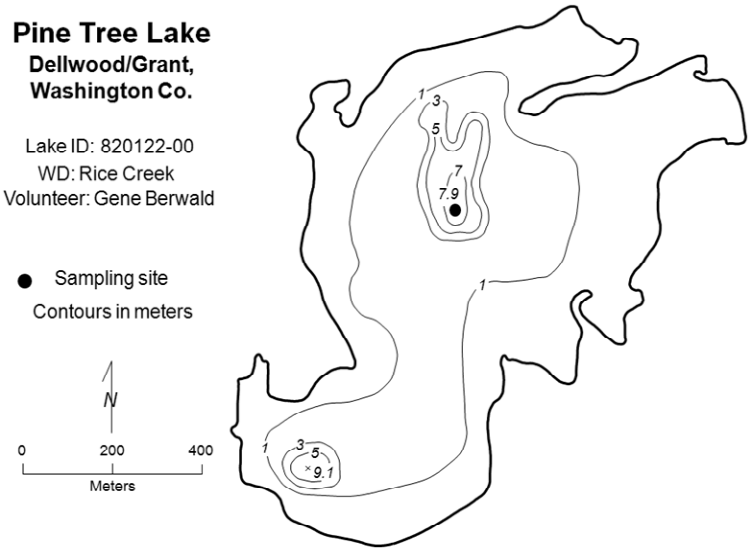
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

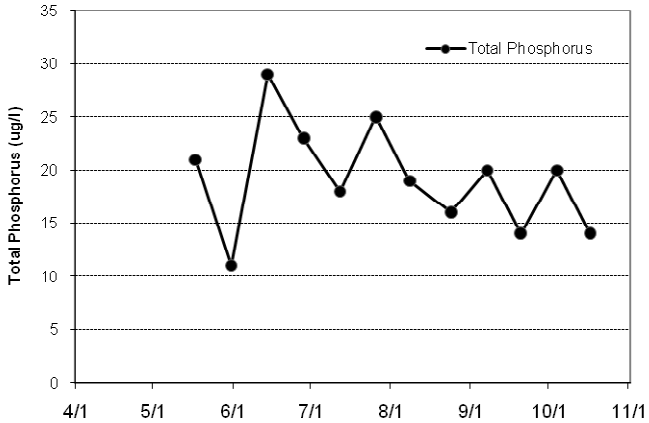
Pine Tree Lake

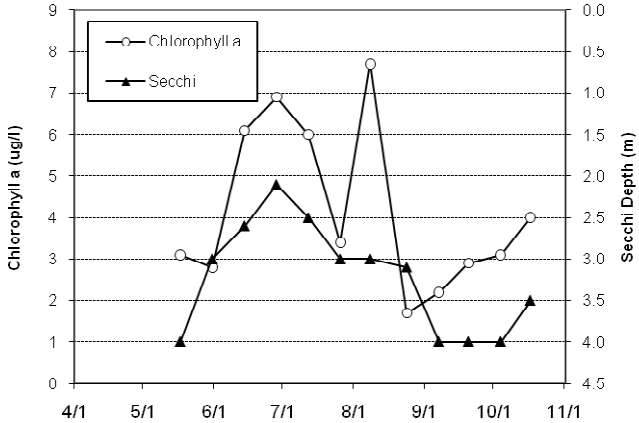
Dellwood/Grant, Washington Co.

Lake ID: 820122-00
WD: Rice Creek
Volunteer: Gene Berwald

● Sampling site
Contours in meters

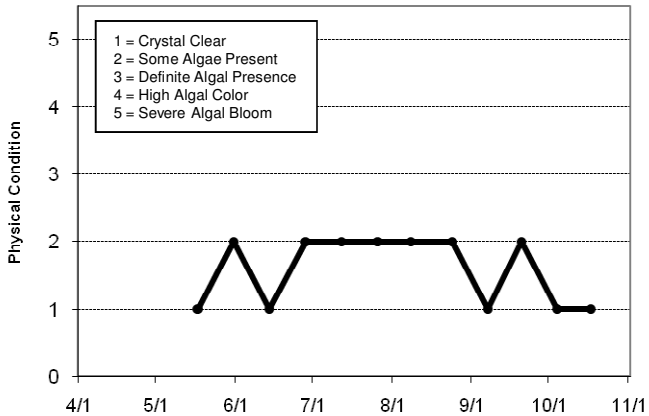






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/17	17.1				3.1	21		4.0	1	1
5/31	19.6				2.8	11		3.0	2	2
6/14	24.2				6.1	29		2.6	1	2
6/28	25				6.9	23		2.1	2	2
7/12	25				6	18		2.5	2	1
7/26	25.3				3.4	25		3.0	2	2
8/8	24.3				7.7	19		3.0	2	2
8/24	23.3				1.7	16		3.1	2	3
9/7	24.3				2.2	20		4.0	1	2
9/20	23.4				2.9	14		4.0	2	2
10/4	12.4				3.1	20		4.0	1	4
10/17	6.6				4	14		3.5	1	2



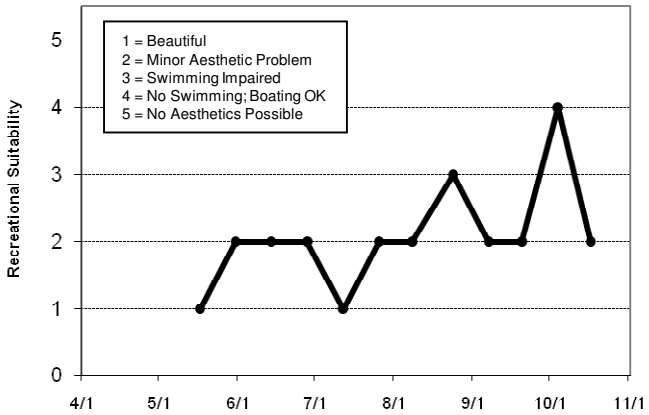
Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	B	B	C	B	B	A
Chlorophyll a	A	B	A	A	B	A
Secchi Depth	B	B	B	B	B	A
Lake Grade	**B**	**B**	**B**	**B**	**B**	**A**

Source: Metropolitan Council and STORET data



Plaisted Lake (82-0148) *Washington Conservation District*

Plaisted Lake is located in the City of Hugo (Washington County). Little morphological data is available for the lake.

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.

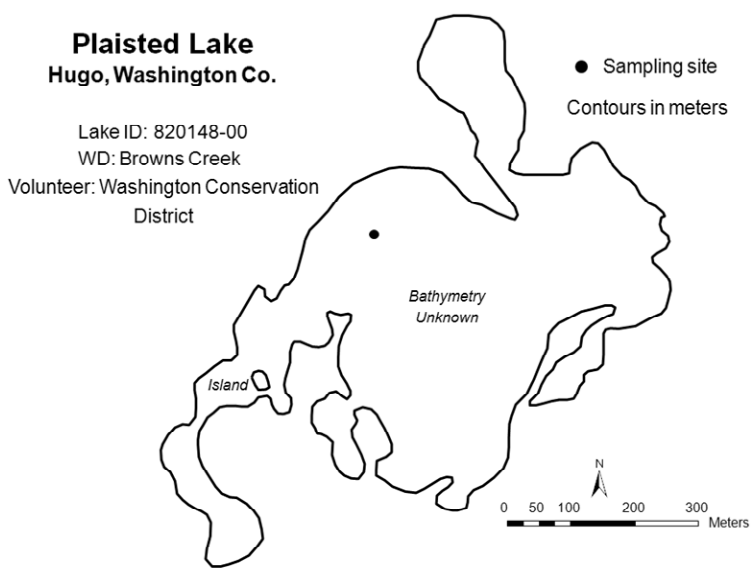
2009 summer (May-September) data summary

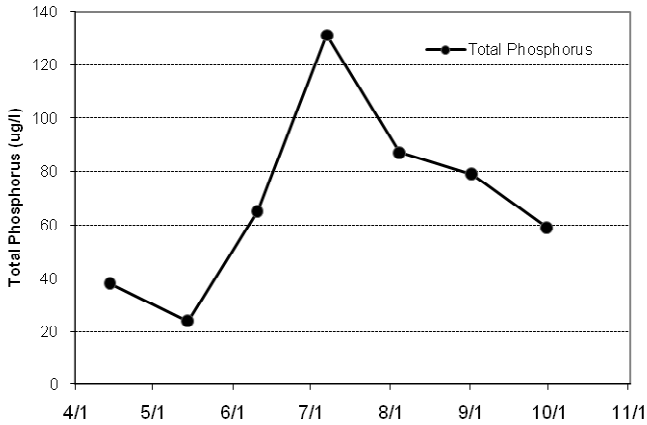
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	74.2	24.0	131.0	D
CLA (µg/l)	40.8	4.1	97.0	C
Secchi (m)	1.2	0.5	2.4	C
TKN (mg/l)	2.03	1.20	2.80	
			Lake Grade	C

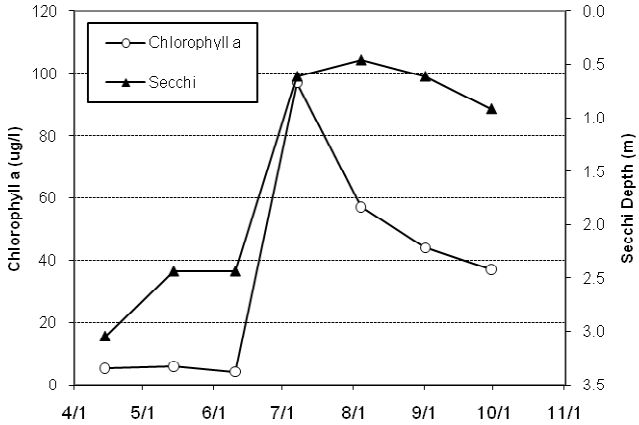
The lake received a lake grade of C in 2009. Continued monitoring is necessary to build the water quality database for this lake.

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.

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.

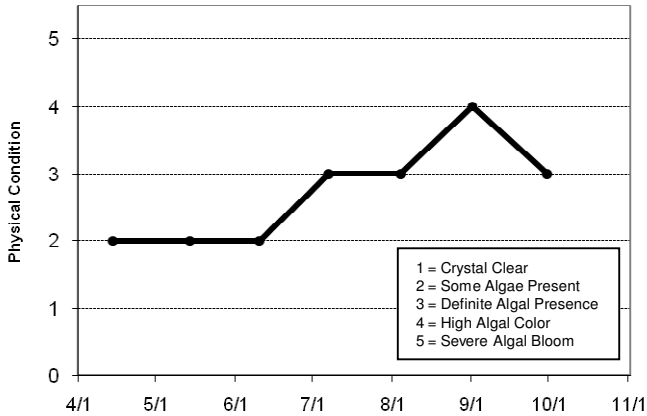






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/14	12.3	11.1	11.7	2.5	5.3	38		3.0	2	1
5/14	15.1	15.2	10.27	0.13	5.8	24		2.4	2	2
6/10	17.1	16.3	7.42	0.11	4.1	65		2.4	2	3
7/7	24.2	20	13.77	0.06	97	131		0.6	3	4
8/4	25.3	21.1	10.82	0.08	57	87		0.5	3	4
9/1	22.2	19.9	9.45	3.48	44	79		0.6	4	4
9/30	14.2	14.5	8.3	0.11	37	59		0.9	3	4



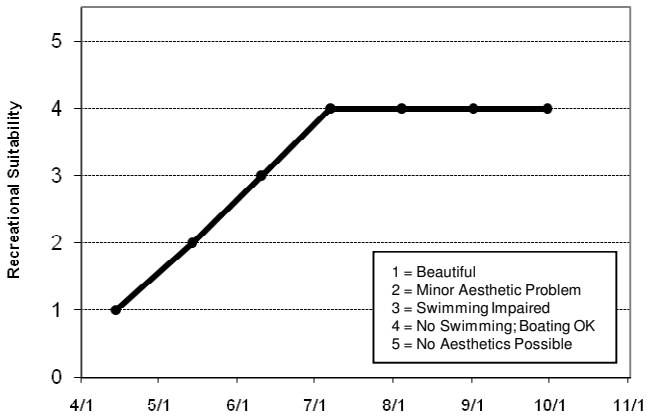
Lake Water Quality Grades Based on Summertime Averages

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					D	D
Chlorophyll a					C	C
Secchi Depth					C	C
Lake Grade					**C**	**C**

Source: Metropolitan Council and STORET data



Powers Lake (82-0092) *City of Woodbury*

Powers Lake is located within the City of Woodbury (Washington County). It has a surface area of approximately 57 acres and a maximum depth of 12.5 m (41.0 feet). The lake has no surface outlet. The MN DNR has designated the lake as being infested with Eurasion water milfoil (*Myriophyllum spicatum*).

The area of the lake's watershed is 1,238 acres. The lake's watershed-to-lake area ratio is 22:1. The greater the ratio, the greater the potential stress on the lake from surface runoff.

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

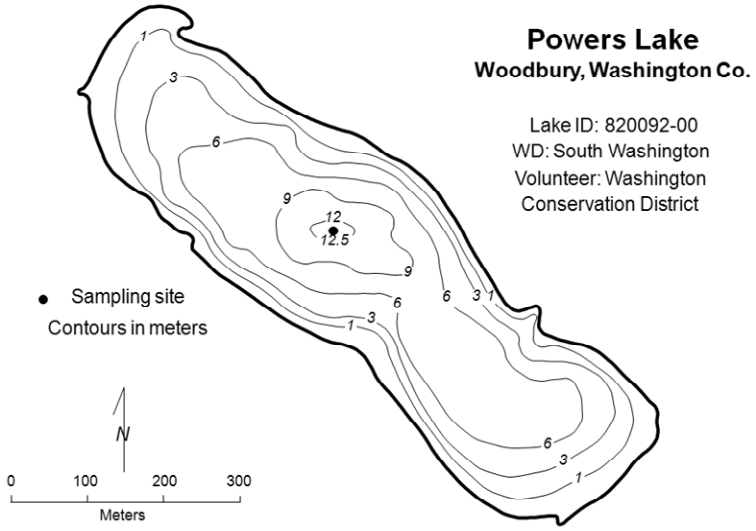
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	31.9	15.0	59.0	B
CLA (µg/l)	20.7	3.7	49.0	C
Secchi (m)	2.5	1.1	6.2	B
TKN (mg/l)	1.15	0.91	1.50	
			Lake Grade	B

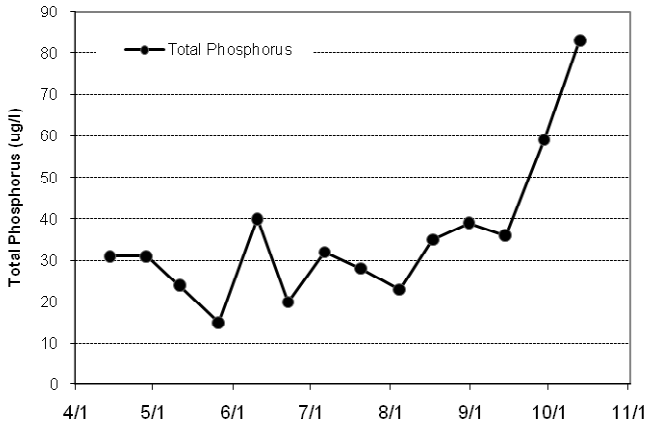
The lake received a lake grade of B for 2009 and in 2008. These grades are an improvement over recent years' lake grades. The water quality observed in 2008 and 2009 is characteristic of the better water quality observed in the early-mid 2000s and the 1990's. Continued monitoring is suggested to determine if the improvement in water quality observed in 2008 and 2009 is evidence of the beginning of a potential trend.

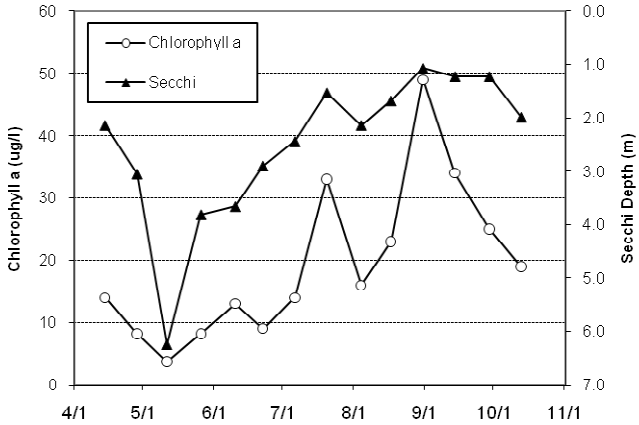
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

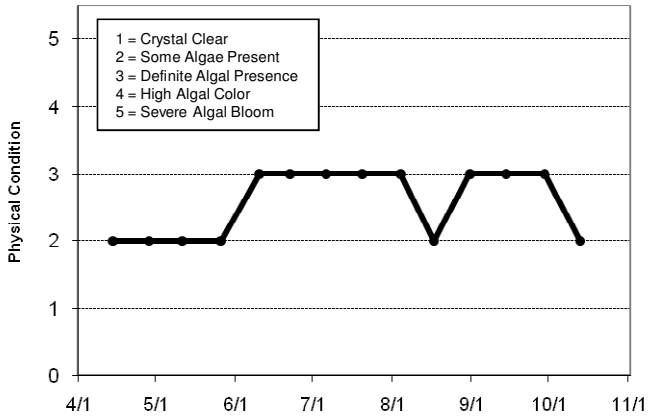
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

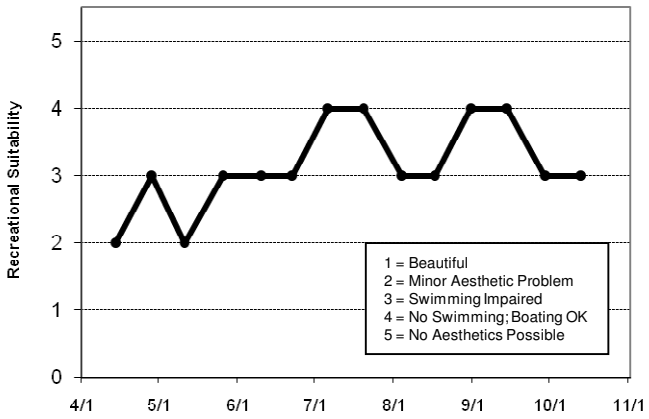
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.











2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/14	8.8				14	31	166	2.1	2	2
4/28	11.4	6.1	11.33	0.03	8.2	31	404	3.0	2	3
5/11	14.8	6.7	9.75	0.03	3.7	24	406	6.2	2	2
5/26	19	7.2	9.69	0.05	8.2	15	823	3.8	2	3
6/10	17.6	7.5	9.28	0.05	13	40	931	3.7	3	3
6/22	24.8	8.2	9.64	0.06	9	20	975	2.9	3	3
7/6	23.3	8.3	10.29	0.04	14	32	743	2.4	3	4
7/20	21.3	9	9.64	0.04	33	28	941	1.5	3	4
8/4	22.8	9.6	7.9	0.04	16	23	695	2.1	3	3
8/17	24.6	10	9.58	0.03	23	35	882	1.7	2	3
8/31	21.5	10	7.62	0.03	49	39	1030	1.1	3	4
9/14	24.2	9.9	11.04	0.04	34	36	1040	1.2	3	4
9/29	17.7	10.1	4.96	0.02	25	59	1070	1.2	3	3
10/13	10.6	10.1	6.2	0.04	19	83	72	2.0	2	3

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			B	B	A	A	C	A	B	C	B	C
Chlorophyll a			A	B	A	B	C	B	B	C	C	B
Secchi Depth			A	B	A	C	C	A	B	C	C	B
Lake Grade			**A**	**B**	**A**	**B**	**C**	**A**	**B**	**C**	**C**	**B**

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	C	C	C	C	B	B
Chlorophyll a	C	C	C	B	B	C
Secchi Depth	C	C	C	C	B	B
Lake Grade	**C**	**C**	**C**	**C**	**B**	**B**

Source: Metropolitan Council and STORET data

Priebe Lake (62-0036) *Rice Creek Watershed District*

Priebe Lake is located in the City of White Bear Lake (Ramsey County). The maximum depth of the lake is 1.5 m (5.0 ft). Other morphological data is unavailable for the lake. The entire area of the lake is considered littoral zone which is the 0-15 feet depth zone of aquatic plant dominance. Furthermore, the lake does not maintain a thermocline, which is a density gradient caused by changing water temperatures throughout the water column.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	143.1	91.0	194.0	D
CLA (µg/l)	73.0	28.0	150.0	D
Secchi (m)	0.4	0.3	0.6	F
TKN (mg/l)	2.96	1.80	3.90	
			Lake Grade	D

The lake received a lake grade of D for 2009. Continued monitoring is necessary to build the water quality database for this lake. The Secchi grade of F for 2009 is the same as the secchi grades received for previous monitoring seasons dating back to 1989.

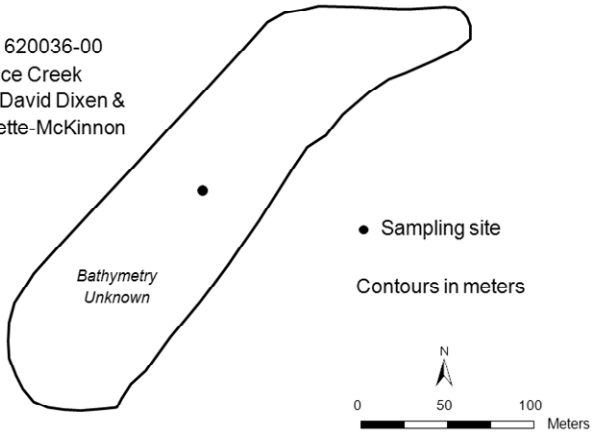
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

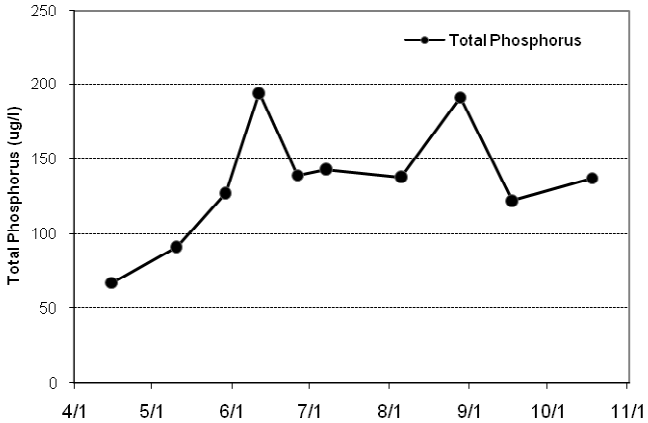
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

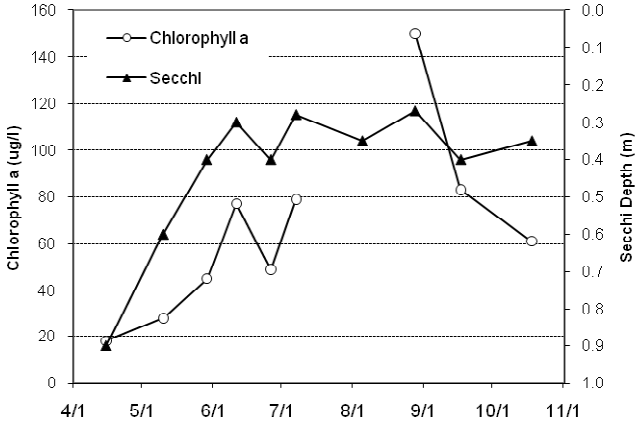
Priebe Lake

White Bear Lake, Ramsey Co.

Lake ID: 620036-00
WD: Rice Creek
Volunteers: David Dixen &
Dawn Schuette-McKinnon

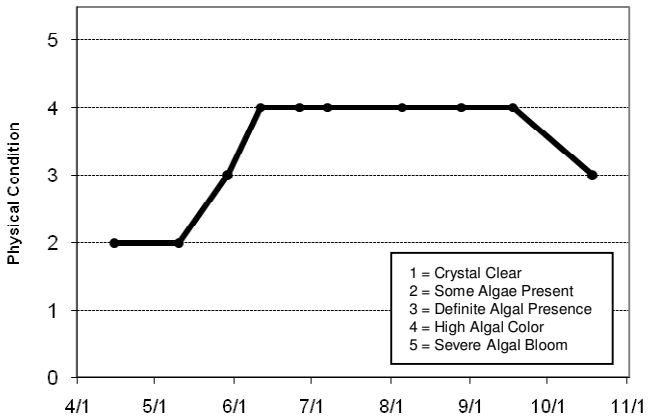






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/15	17.2				18	67		0.9	2	2
5/10	15.9				28	91		0.6	2	2
5/29	23.5				45	127		0.4	3	4
6/11	17.7				77	194		0.3	4	4
6/26	30.6				49	139		0.4	4	
7/7	28				79	143		0.3	4	4
8/5	27.8					138		0.4	4	4
8/28	25				150	191		0.3	4	4
9/17	27.1				83	122		0.4	4	4
10/18	9.6				61	137		0.4	3	4

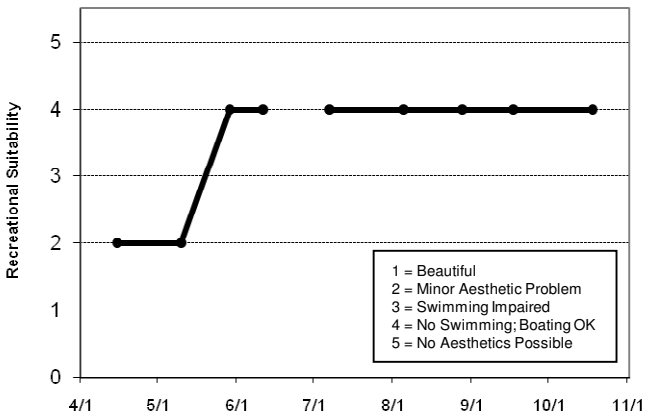


Lake Water Quality Grades Based on Summertime Averages

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

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

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



Source: Metropolitan Council and STORET data

Prior Lake [lower basin, site 1] (70-0026) *Prior Lake - Spring Lake Watershed District*

Prior Lake (lower basin) is located in the City of Prior Lake (Scott County). The lower basin is considered a Priority Lake by the Metropolitan Council for its high regional recreation value (METC 2007). The lower basin has a surface area of 957 acres. The maximum and mean depths of the basin are 18.3 and 4.1 m (60 and 13 feet), respectively. The lower basin has one inlet, which is the outlet from the upper basin of Prior Lake. The lower basin has one outlet. The outlet structure, located at the southwestern portion of the basin, was installed to regulate surface water elevations.

The MN DNR has designated the lower basin as being infested with Eurasian water milfoil (*Myriophyllum spicatum*) and Zebra mussels (*Dreissena spp.*).

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

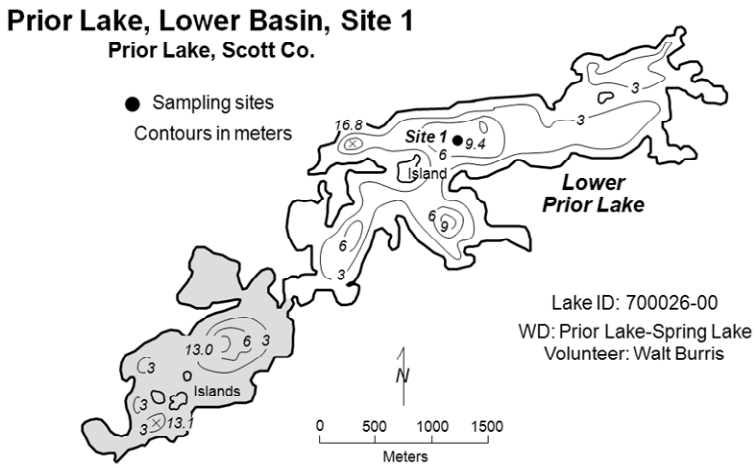
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	23.0	14.0	70.0	B
CLA (µg/l)	8.9	2.6	20.0	A
Secchi (m)	3.4	1.5	5.7	A
TKN (mg/l)	1.01	0.79	1.90	
			Lake Grade	A

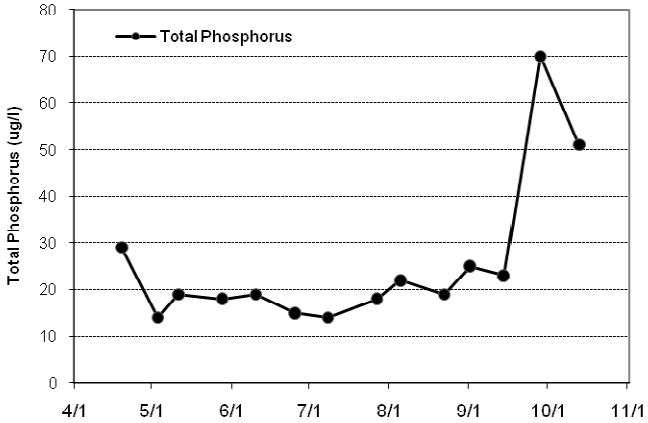
The lower basin received a lake grade of A for 2009. The historical lake grades appear to vary from A's to C's. With such variation, it is difficult to discern trends in the basin's water quality. Further monitoring is suggested to continue to build the water quality database for increasing power to detect water quality trends.

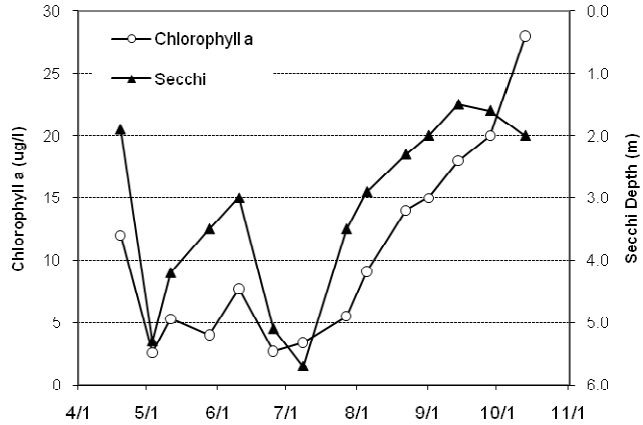
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

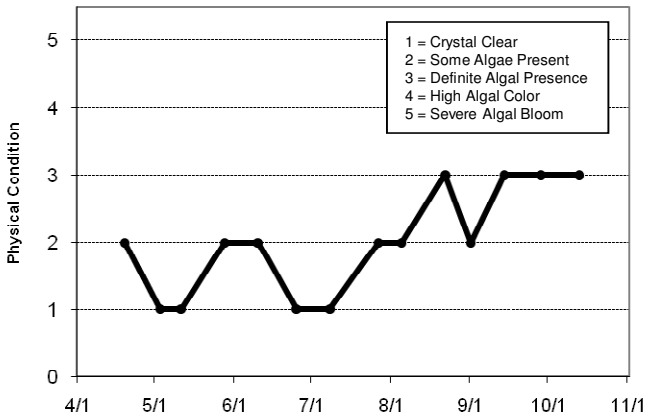
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

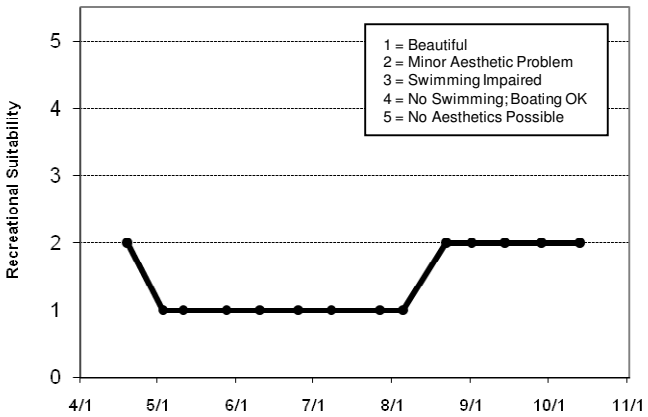
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.











2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/19	11.4				12	29		1.9	2	2
5/3	12.8				2.6	14		5.3	1	1
5/11	15.3				5.3	19		4.2	1	1
5/28	20				4	18		3.5	2	1
6/10	17.9				7.7	19		3.0	2	1
6/25	26.5				2.7	15		5.1	1	1
7/8	23.7				3.4	14		5.7	1	1
7/27	24.1				5.5	18		3.5	2	1
8/5	23.8				9.1	22		2.9	2	1
8/22	22				14	19		2.3	3	2
9/1	22.1				15	25		2.0	2	2
9/14	24.1				18	23		1.5	3	2
9/28	18.4				20	70		1.6	3	2
10/13	10.3				28	51		2.0	3	2

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Phosphorus	C	A			B								C
Chlorophyll a	B				B					A	B		B
Secchi Depth	C	C	B	C	B	C	B	C	C	B	B	C	C
Lake Grade	**C**				**B**								**C**

Year	1993	1994	1995	1996	1997	1998 Site 1	1998 Site 2	1999 Site 1	1999 Site 2	2000 Site 1	2000 Site 2	2001 Site 1	2001 Site 2
Total Phosphorus				C	A	A	B	A	C	B	B	A	B
Chlorophyll a				A	A	B	C	A	B	B	B	B	C
Secchi Depth	B	B	B	B	B	C	C	B	C	B	C	B	C
Lake Grade				**B**	**A**	**B**	**C**	**A**	**C**	**B**	**B**	**B**	**C**

Year	2002 Site 1	2002 Site 2	2003 Site 1	2004 Site 1	2005 Site 1	2006 Site 1	2007 Site 1	2008 Site 1	2009 Site 1
Total Phosphorus	B	C	C	B	A	C	A	A	B
Chlorophyll a	B	C	A	B	A	B	B	B	A
Secchi Depth	B	C	A	B	A	B	B	B	A
Lake Grade	**B**	**C**	**B**	**B**	**A**	**B**	**B**	**B**	**A**

Source: Metropolitan Council and STORET data

Prior Lake [upper basin, site-1] (70-0072) *Prior Lake - Spring Lake Watershed District*

Prior Lake (upper basin) is located in the City of Prior Lake (Scott County). The upper basin is considered a Priority Lake by the Metropolitan Council for its high regional recreation value (METC 2007). The upper basin has a surface area of 386 acres. The maximum and mean depths of the upper basin of Prior Lake are 15.2 and 3.1 m (50 and 10 feet), respectively. The upper basin of Prior Lake has two natural inlets, inflow from Spring Lake and the inlet from Rice and Crystal Lake drainage.

The MN DNR has designated the upper basin as being infested with Eurasian water milfoil (*Myriophyllum spicatum*) and Zebra mussels (*Dreissena spp.*).

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	41.9	23.0	71.0	C
CLA (µg/l)	21.7	2.6	62.0	C
Secchi (m)	2.3	0.6	5.0	B
TKN (mg/l)	1.38	0.99	2.00	
			Lake Grade	C

The upper basin received a lake grade of C for 2009. Historical data for the upper basin indicate that the water quality of the basin has varied between lake grades of C and D. Further monitoring is suggested to continue to build the water quality database for increasing power to detect water quality trends.

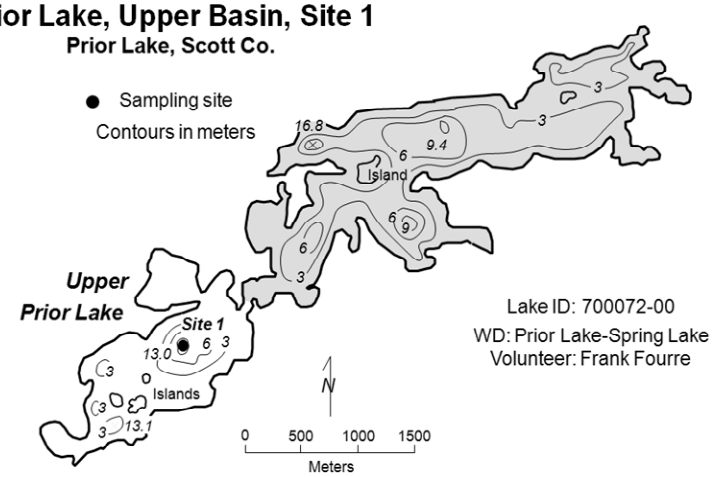
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

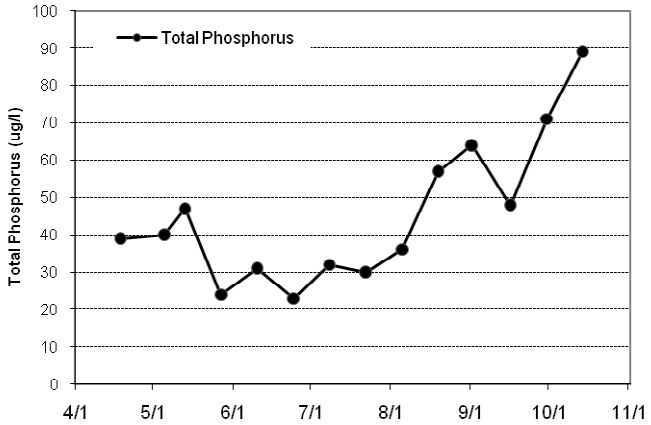
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

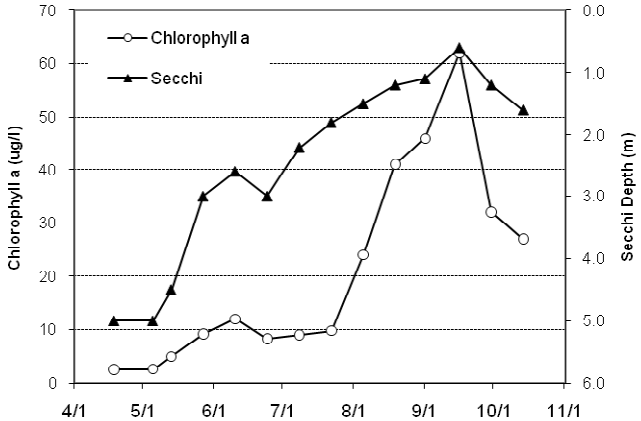
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

Prior Lake, Upper Basin, Site 1

Prior Lake, Scott Co.

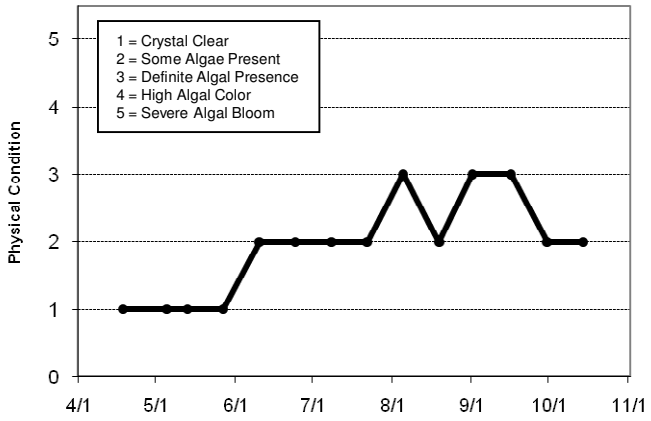






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/18	13.8				2.5	39		5.0	1	1
5/5	14.4				2.6	40		5.0	1	1
5/13	15				5	47		4.5	1	1
5/27	18.6				9.2	24		3.0	1	1
6/10	17.3				12	31		2.6	2	2
6/24	25.8				8.3	23		3.0	2	2
7/8	24.2				9	32		2.2	2	2
7/22	23				9.8	30		1.8	2	2
8/5	23.3				24	36		1.5	3	2
8/19	23.9				41	57		1.2	2	2
9/1	21.8				46	64		1.1	3	2
9/16	22.6				62	48		0.6	3	3
9/30	17				32	71		1.2	2	2
10/14	9.4				27	89		1.6	2	2



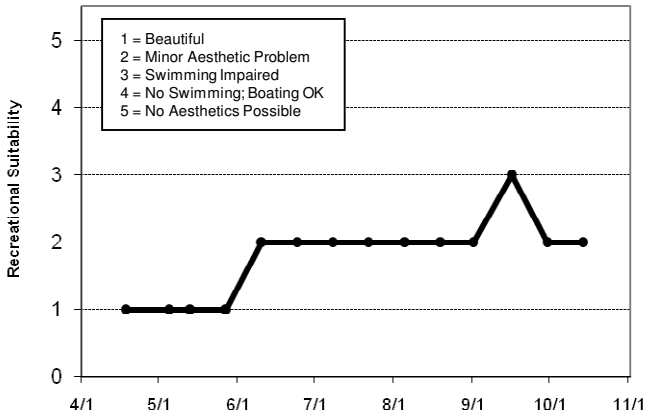
Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Phosphorus	C	C			D					D			
Chlorophyll a	D	D			D					C	C		
Secchi Depth	D	C	D	F	D	D	D	F	F	D	C	D	D
Lake Grade	**D**	**D**			**D**					**D**			

Year	1993	1994	1995	1996	1997	1998 Site 1	1998 Site 2	1999 Site 1	1999 Site 2	2000 Site 1	2000 Site 2	2001 Site 1	2001 Site 2
Total Phosphorus				C	C	C		D		D		D	
Chlorophyll a				C	C	D		D		D		F	
Secchi Depth	D	D	C	C	D	D		D		C		D	
Lake Grade				**C**	**C**	**D**		**D**		**D**		**D**	

Year	2002 Site 1	2002 Site 2	2003 Site 1	2004 Site 1	2005 Site 1	2006 Site 1	2007 Site 1	2008 Site 1	2009 Site 1
Total Phosphorus	D	D	C	D	C	D	C	C	C
Chlorophyll a	D	D	D	D	C	D	D	D	C
Secchi Depth	D	D	C	D	C	C	D	C	B
Lake Grade	**D**	**D**	**C**	**D**	**C**	**D**	**D**	**C**	**C**

Source: Metropolitan Council and STORET data



Regional Park Lake (82-0087) *South Washington Watershed District*

Regional Park Lake is a 16-acre lake located within the City of Cottage Grove (Washington County). The maximum depth of the lake is 5.8 m. Most of the area of the lake is considered littoral zone which is the 0-15 feet depth zone of aquatic plant dominance. Furthermore, the lake does not maintain a thermocline, which is a density gradient caused by changing water temperatures throughout the water column. The watershed-to-lake size ratio is 38:1. The greater the ratio, the greater the potential stress on the lake from surface runoff.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	48.2	31.0	74.0	C
CLA (µg/l)	14.8	10.0	24.0	B
Secchi (m)	2.7	2.3	2.9	B
TKN (mg/l)	0.88	0.67	1.40	
			Lake Grade	B

The lake received a lake grade of B for 2009, which is the best lake grade the lake has received since CAMP monitoring began in 1998. This year marks continued improvement in water clarity in comparison to the clarity during late 1990s and early 2000s. Additional years of monitoring are suggested for determining if this trend continues.

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/.

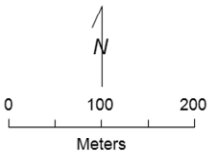
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

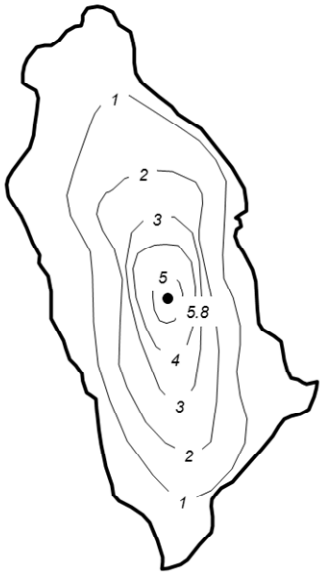
Regional Park Lake

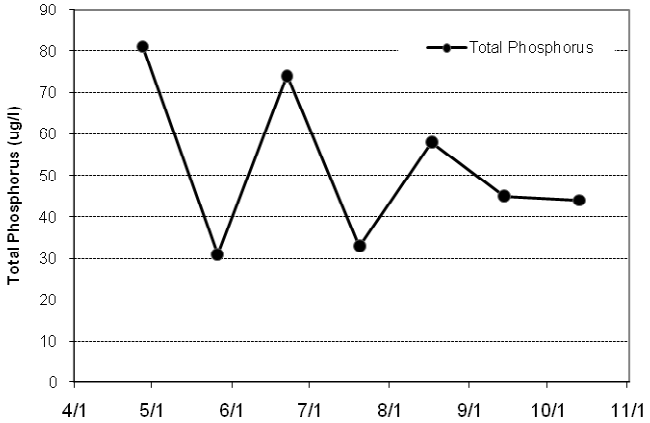
Cottage Grove, Washington Co.

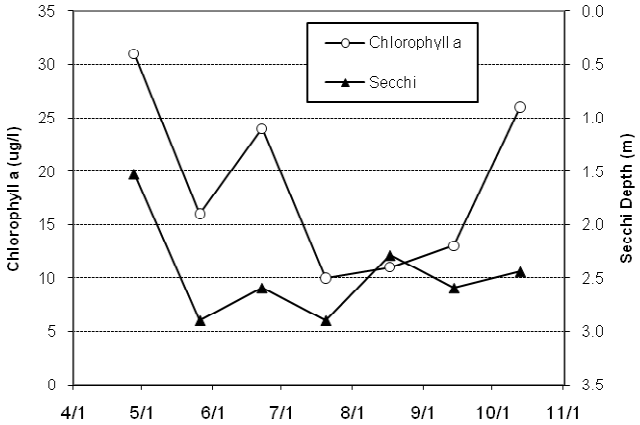
Lake ID: 820087-00
WD: South Washington
Volunteer: Washington
Conservation District

● Sampling site
Contours in meters



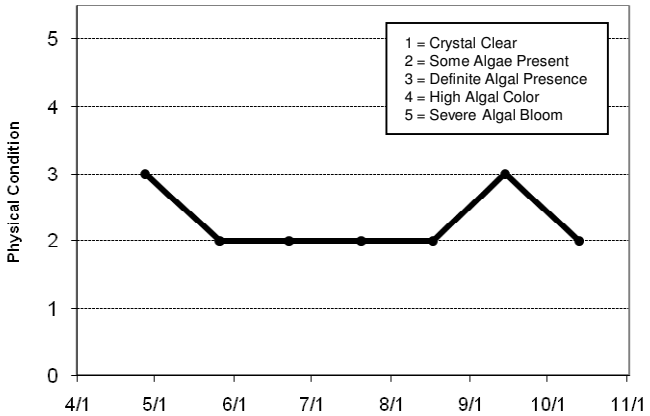






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/27	12.9	7.1	10.35	0.06	31	81		1.5	3	4
5/26	20.2	9.9	8.8	0.09	16	31		2.9	2	3
6/22	24.2	11.6	10.9	0.11	24	74		2.6	2	3
7/20	21.4	13.7	9.27	0.1	10	33		2.9	2	3
8/17	25.4	16.7	7.19	0.03	11	58		2.3	2	3
9/14	23.4	15.2	9.06	0.07	13	45		2.6	3	3
10/13	8.5	8.5	10.77	0.12	26	44		2.4	2	2



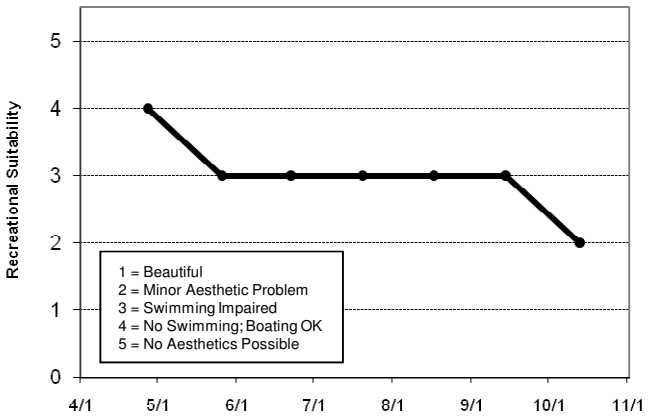
Lake Water Quality Grades Based on Summertime Averages

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							F	C	D	D	D	D
Chlorophyll a							B	B	C	C	D	C
Secchi Depth							F	D	F	F	F	F
Lake Grade							**D**	**C**	**D**	**D**	**D**	**D**

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	C	C	D	C	D	C
Chlorophyll a	C	C	C	B	C	B
Secchi Depth	D	C	C	C	C	B
Lake Grade	**C**	**C**	**C**	**C**	**C**	**B**

Source: Metropolitan Council and STORET data



Reitz Lake (10-0052) *Carver County Environmental Services*

Reitz Lake is located in Laketown Township (Carver County). The lake has a surface area of 79 acreas and a watershed area of 3,711 acres, which gives a large watershed-to-lake area ratio of 47:1. The larger the ratio the greater the potential stress put on the lake from surface runoff. The DNR has designated the lake as being infested with Eurasion Water Milfoil (*Myriophyllum spicatum*).

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

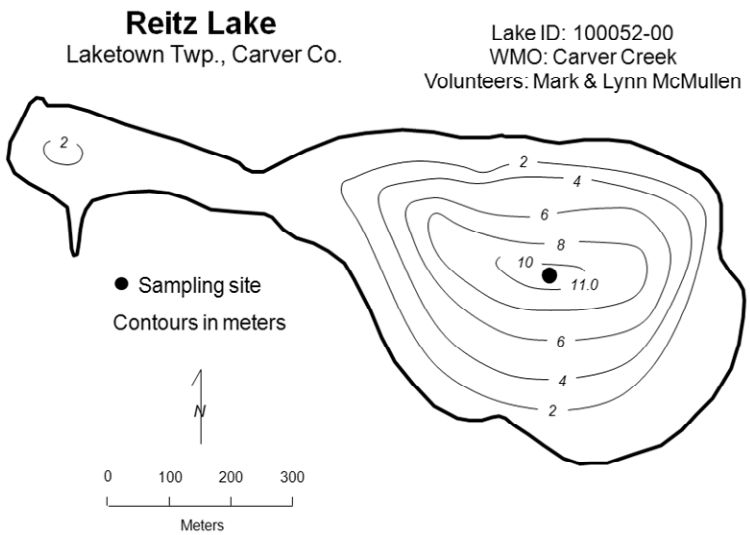
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	50.5	25.0	90.0	C
CLA (µg/l)	15.4	5.0	30.0	B
Secchi (m)	1.8	1.0	3.5	C
TKN (mg/l)	1.46	0.99	1.90	
			Lake Grade	C

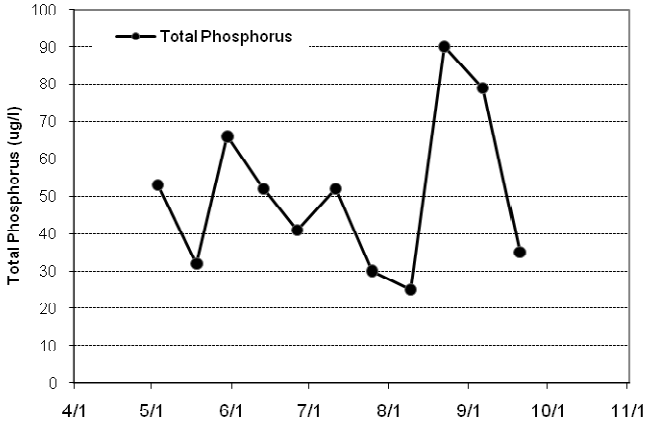
The lake received a lake grade of C for 2009, which is similar to lake grades received in previous years. Further monitoring is suggested to continue to build the water quality database for increasing power to detect water quality trends.

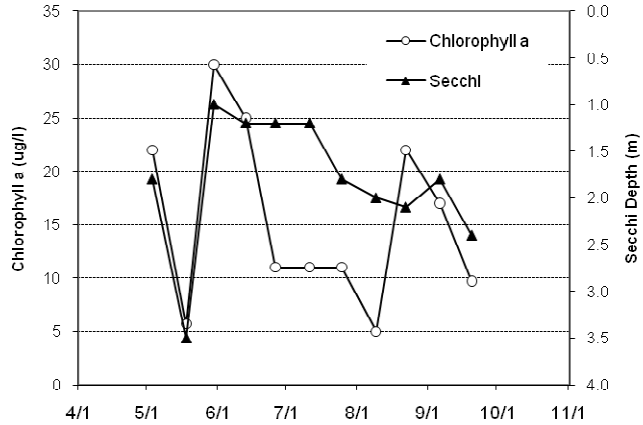
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

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.

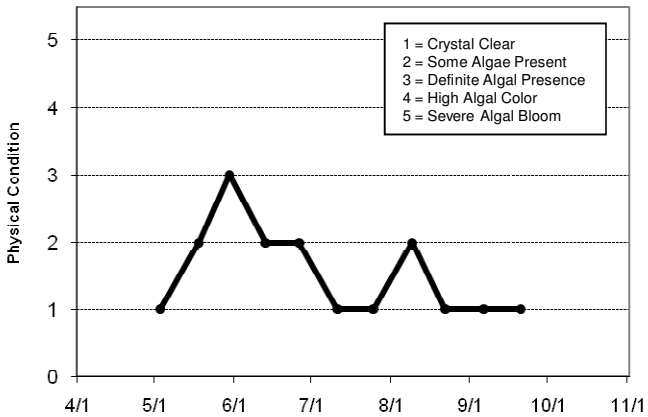






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/3	13				22	53		1.8	1	1
5/18	16.7				5.7	32		3.5	2	1
5/30	20				30	66		1.0	3	3
6/13	22				25	52		1.2	2	1
6/26	28				11	41		1.2	2	1
7/11					11	52		1.2	1	1
7/25	23				11	30		1.8	1	1
8/9	26				5	25		2.0	2	1
8/22	22				22	90		2.1	1	1
9/6	23				17	79		1.8	1	1
9/20	23				9.7	35		2.4	1	1
6/20	26				25	249		1.8	3	3



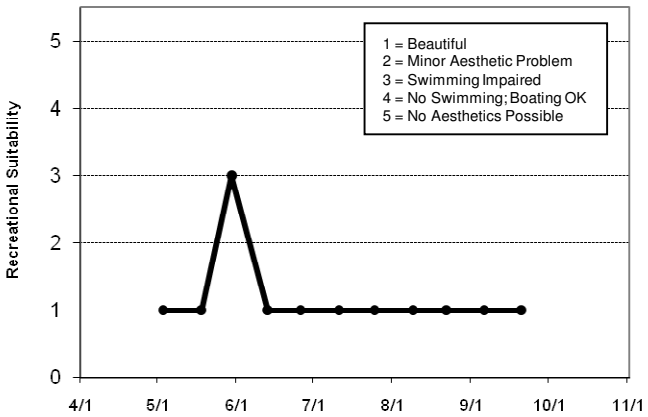
Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	D	D	D	C	C	C
Chlorophyll a	C	C	C	A	B	B
Secchi Depth	C	C	C	C	C	C
Lake Grade	**C**	**C**	**C**	**B**	**C**	**C**

Source: Metropolitan Council and STORET data



Reshanau Lake (02-0009) *Rice Creek Watershed District*

Reshanau Lake is located in the City of Lino Lakes (Anoka County). The 336-acre lake has a mean and maximum depth of 3.2 m (10.5 feet) and 4.9 m (16 feet). The entire area of the lake is considered littoral zone which is the 0-15 feet depth zone of aquatic plant dominance. Furthermore, the lake does not maintain a thermocline, which is a density gradient caused by changing water temperatures throughout the water column.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	83.6	62.0	134.0	D
CLA (µg/l)	35.0	11.0	59.0	C
Secchi (m)	0.4	0.3	0.5	F
TKN (mg/l)	1.87	1.40	2.50	
			Lake Grade	D

The lake received a lake grade of D for 2009, which is similar to the lake grades received in the previous two years. Continued monitoring is recommended to continue to build the water quality database for this lake.

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.

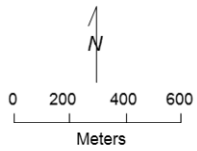
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

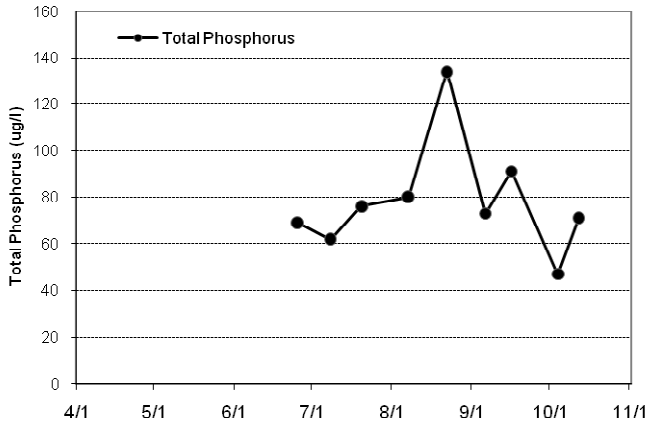
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

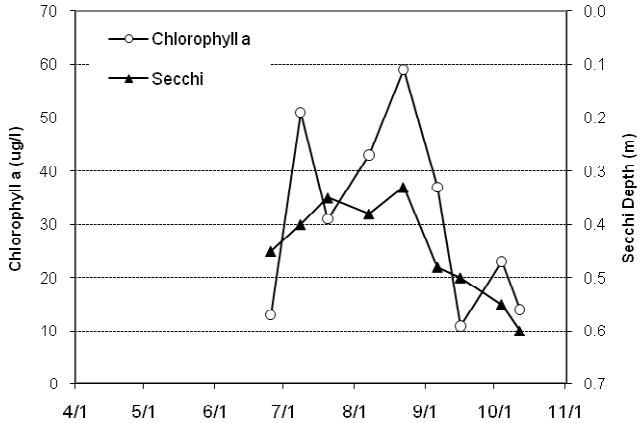
Reshanau Lake
Lino Lakes, Anoka Co.

Lake ID: 20009-00
WD: Rice Creek
Volunteer: Lori Fredlund

● Sampling site
Contours in meters

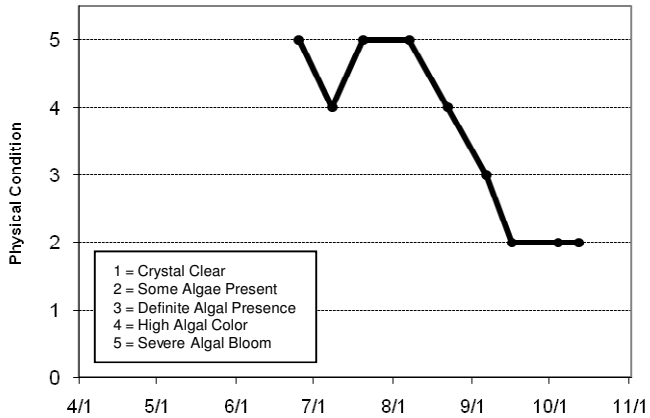






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
6/25	27				13	69		0.5	5	4
7/8	26.2				51	62		0.4	4	4
7/20	26				31	76		0.4	5	4
8/7	26.4				43	80		0.4	5	4
8/22	22.6				59	134		0.3	4	2
9/6	24				37	73		0.5	3	3
9/16	25.2				11	91		0.5	2	2
10/4	20				23	47		0.6	2	2
10/12	7.4				14	71		0.6	2	2



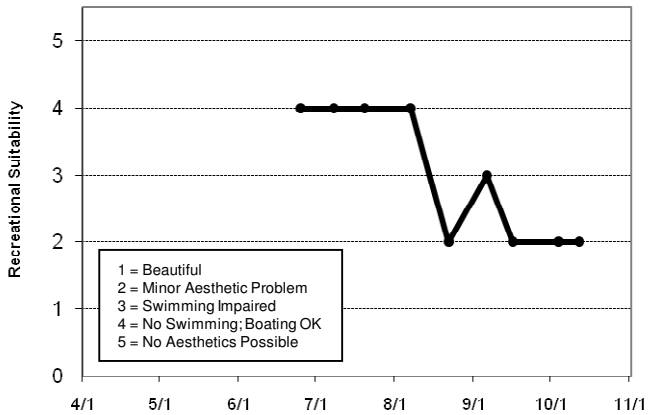
Lake Water Quality Grades Based on Summertime Averages

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			D	D	D	D
Chlorophyll a			C	C	D	C
Secchi Depth			F	F	F	F
Lake Grade			**D**	**D**	**D**	**D**

Source: Metropolitan Council and STORET data



Rest Area Pond (82-0514) - *Valley Branch Watershed District*

Rest Area Pond is a 12.6-acre lake located within West Lakeland Township (Washington County). There is little morphological information for the pond. The pond's surface area and watershed area (17,781 acres) translates to a large 157:1 watershed-to-pond area ratio. Generally the larger the ratio, the greater the potential stress on the pond from surface runoff.

On each sampling day the pond was monitored for total phosphorus (TP), chlorophyll-a (CLA), total kjeldahl nitrogen (TKN), and secchi transparency, as well as the pond'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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	293.0	126.0	630.0	F
CLA (µg/l)	121.1	12.0	400.0	F
Secchi (m)	0.4	0.1	0.9	F
TKN (mg/l)	3.34	1.50	6.00	
			Lake Grade	F

The pond received a lake grade of F for 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.

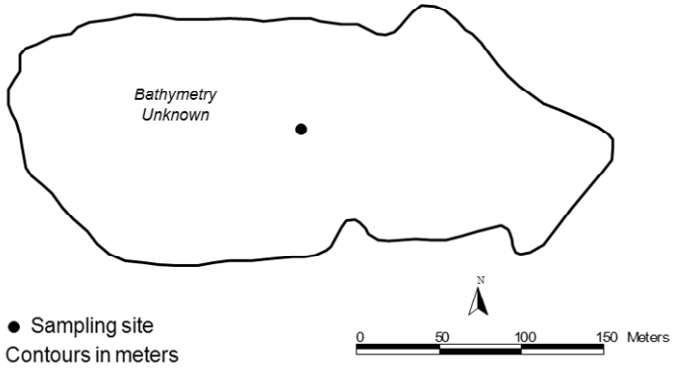
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page (although limited in data).

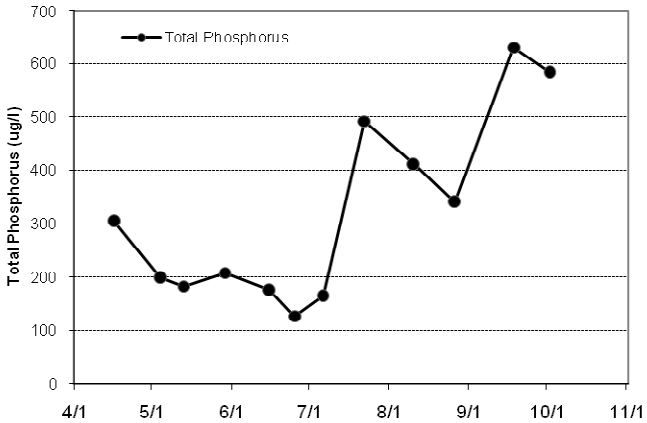
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

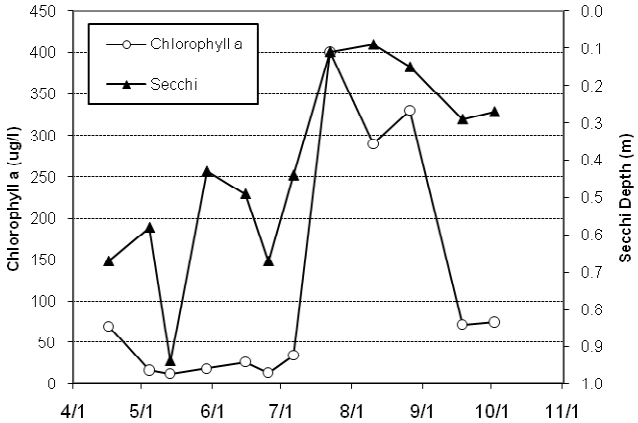
Rest Area Pond

West Lakeland Twp., Washington Co.

Lake ID: 820514-00
WD: Valley Branch
Volunteers: MnDOT Staff

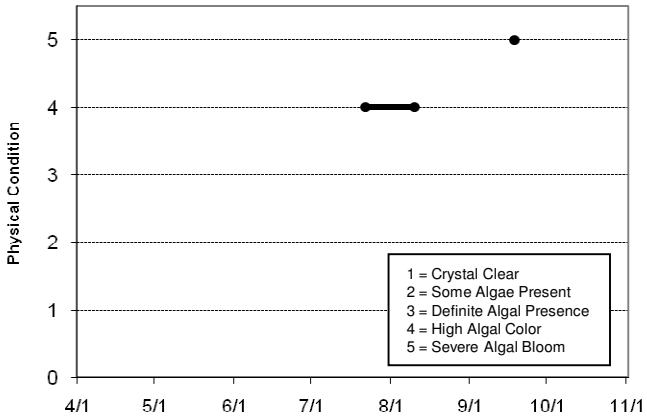






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/16	12.7				70	305		0.7		
5/4	14.6				16	199		0.6		
5/13	17.9				12	182		0.9		
5/29	20.2				18	207		0.4		
6/15	24				26	176		0.5		
6/25	29.1				13	126		0.7		
7/6	27.1				34	165		0.4		
7/22	22				400	492		0.1	4	
8/10	27.3				290	412		0.1	4	
8/26	22.4				330	341		0.2		
9/18	22				72	630		0.3	5	
10/2	12.6				75	584		0.3		



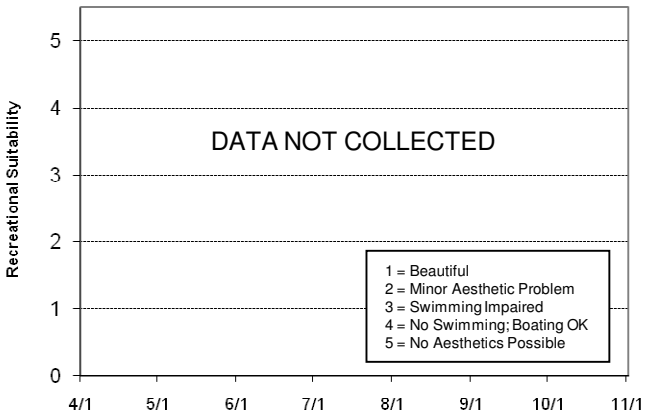
Lake Water Quality Grades Based on Summertime Averages

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			D	F	F	F
Chlorophyll a			D	C	F	F
Secchi Depth			D	F	F	F
Lake Grade			**D**	**D**	**F**	**F**

Source: Metropolitan Council and STORET data



Rice Lake [Maple Grove] (27-0116) – *Elm Creek Watershed Management Commission*

Rice Lake lies within the City of Maple Grove. The lake has a surface area of 252 acres. The maximum depth is 3.4 m (11 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. The MN DNR has designated the lake as being infested with Eurasion water milfoil (*Myriophyllum spicatum*).

This was the third year that Rice Lake has been involved in the CAMP. A search through the STORET nationwide water quality database for historic data showed that Secchi transparency measurements were collected along with user perception rankings for the years 1991, 1993, and 2002-2007. Dissolved oxygen measurements were collected in 1993. However, the years 2007 – 2009 are the only years of known data collection for nutrients and chlorophyll-a.

On each sampling day the lake was monitored for total phosphorus (TP), chlorophyll-a (CLA), total kjeldahl nitrogen (TKN), and Secchi transparency (water clarity), as well as the lake's perceived physical condition and recreational suitability. The data are summarized in the figures and graphs on the following page.

2009 summer (May-September) data summary

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	380.1	102.0	750.0	F
CLA (µg/l)	138.1	19.0	500.0	F
Secchi (m)	1.0	0.3	1.8	D
TKN (mg/l)	2.52	1.50	5.20	
			Lake Grade	F

The lake received a lake grade of F for 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.

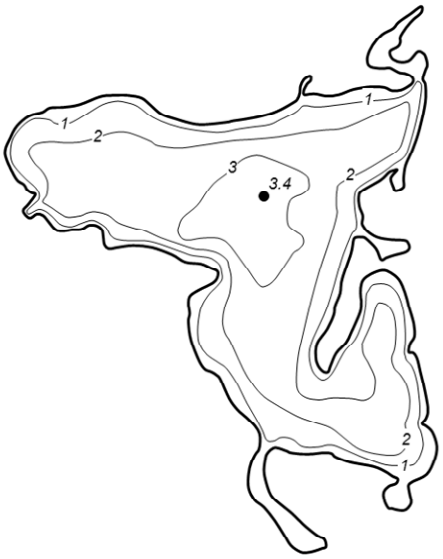
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

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.

Rice Lake

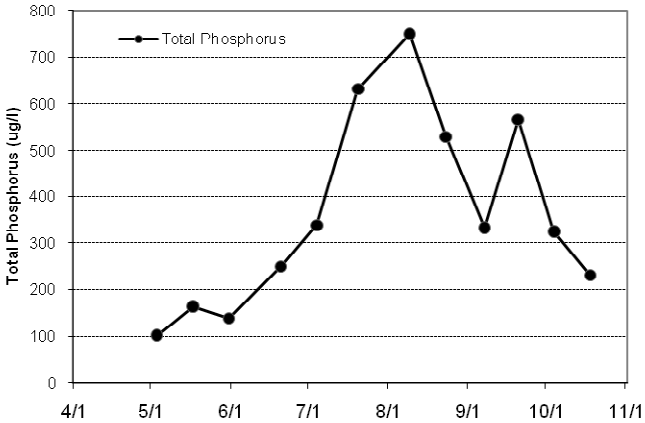
Maple Grove, Hennepin Co.

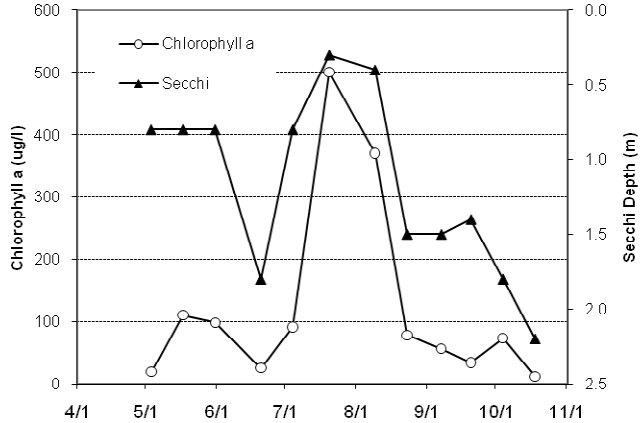
Lake ID: 270116-01
WMO: Elm Creek
Volunteer: George Schneider



● Sampling site

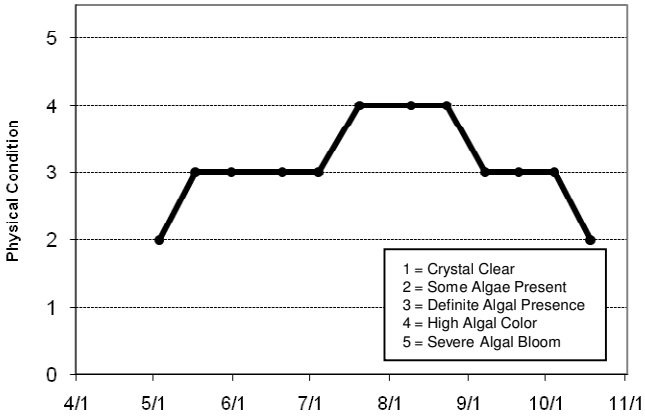
Contours in meters





2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/3	14				19	102		0.8	2	2
5/17	17				110	164		0.8	3	3
5/31	25				98	138		0.8	3	3
6/20	26				25	249		1.8	3	3
7/4	26				91	338		0.8	3	3
7/20	23				500	632		0.3	4	4
8/9	26				370	750		0.4	4	4
8/23	23				78	529		1.5	4	4
9/7	23				56	333		1.5	3	3
9/20	24				34	566		1.4	3	3
10/4	13				73	324		1.8	3	3
10/18	7				12	231		2.2	2	2



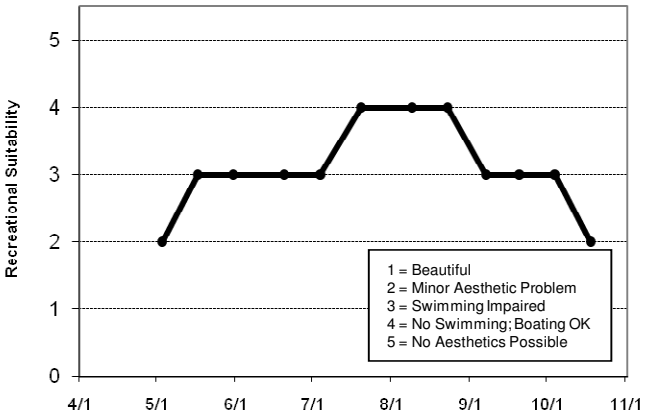
Lake Water Quality Grades Based on Summertime Averages

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

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

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

Source: Metropolitan Council and STORET data



Riley Lake (10-0002) *City of Chanhassen*

Riley Lake is located with the cities of Chanhassen and Eden Prairie (Carver and Hennepin counties). It is considered a Priority Lake by the Metropolitan Council for its high regional recreation value (METC 2007). It has a surface area of 297 acres. The maximum and mean depths are 15.0 m and 6.6 m, respectively. The MN DNR has designated the lake as being infested with Eurasian water milfoil (*Myriophyllum spicatum*). The lake is listed as impaired by the MPCA for mercury content in fish.

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

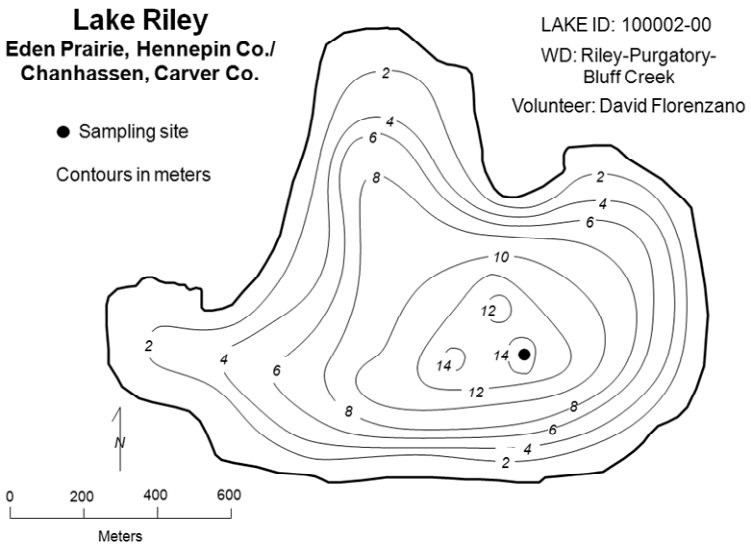
Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	38.4	25.0	61.0	C
CLA (µg/l)	18.7	9.4	30.0	B
Secchi (m)	1.8	1.2	3.2	C
TKN (mg/l)	1.39	1.10	2.00	
			Lake Grade	C

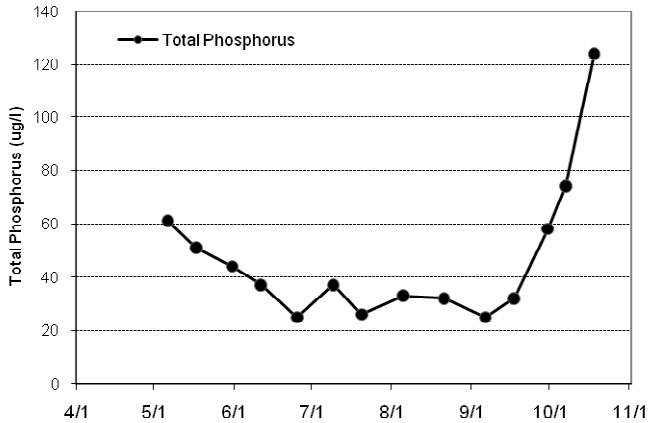
The lake received a lake grade of C for 2009, which is consistent with most years of monitoring dating back to 1980. The lake appears to be characterized as a C lake grade.

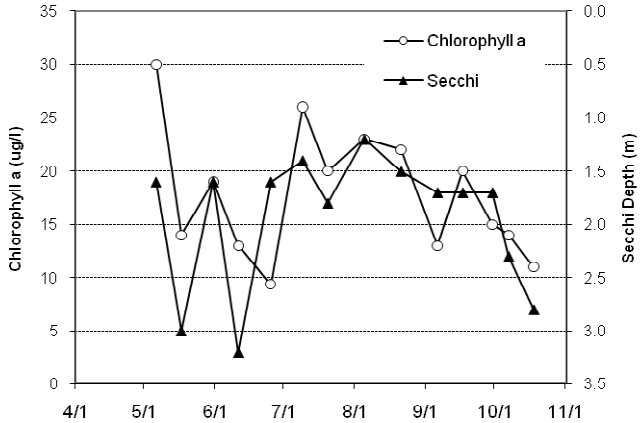
Throughout the monitoring period, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

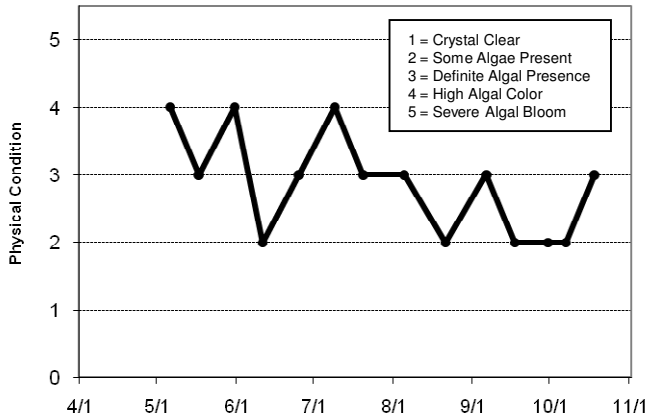
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

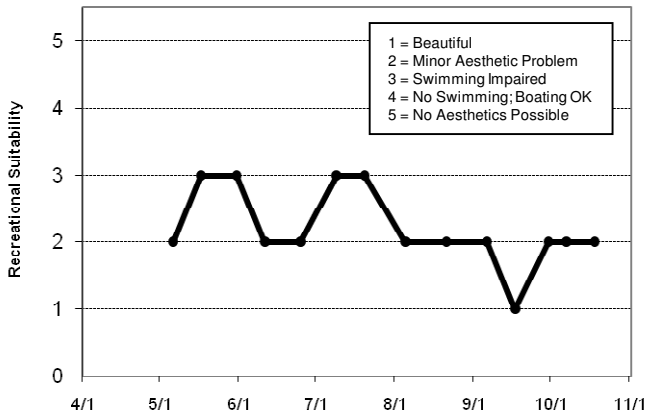
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.











2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/6	14.8				30	61		1.6	4	2
5/17	15.3				14	51		3.0	3	3
5/31	20.2				19	44		1.6	4	3
6/11	18.6				13	37		3.2	2	2
6/25	27				9.4	25		1.6	3	2
7/9	22.3				26	37		1.4	4	3
7/20	21.1				20	26		1.8	3	3
8/5	23.9				23	33		1.2	3	2
8/21	20.6				22	32		1.5	2	2
9/6	22.9				13	25		1.7	3	2
9/17	22.9				20	32		1.7	2	1
9/30	17.6				15	58		1.7	2	2
10/7	13.4				14	74		2.3	2	2
10/18	9.8				11	124		2.8	3	2

Lake Water Quality Grades Based on Summertime Averages

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

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

Year	2004	2005	2006	2007	2008	2009
Total Phosphorus	C	C	C	B	C	C
Chlorophyll a	C	C	B	B	B	B
Secchi Depth	B	C	B	C	C	C
Lake Grade	**C**	**C**	**B**	**B**	**C**	**C**

Source: Metropolitan Council and STORET data

Rogers Lake (19-0080) – *Lower Mississippi River Watershed Management Organization*

Rogers Lake lies within the City of Mendota Heights. The lake has a surface area of 94 acres and a maximum depth of 2.4 m (7.9 ft). The entire area of the lake is considered littoral zone which is the 0-15 feet depth zone of aquatic plant dominance. Furthermore, the lake does not maintain a thermocline, which is a density gradient caused by changing water temperatures throughout the water column.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	39.9	28.0	68.0	C
CLA (µg/l)	8.5	4.2	12.0	A
Secchi (m)	1.3	1.0	1.5	C
TKN (mg/l)	1.32	0.86	1.90	
			Lake Grade	B

The lake received a lake grade of B for 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.

The water clarity grade of C does not correlate well with the chlorophyll-a grade of A. A possible explanation may be that the water clarity may be affected by higher levels of total suspended solids from surface runoff from the surrounding urbanized watershed. It is possible for higher suspend solids loadings to decrease water clarity which would decrease light penetration thereby inhibiting algal growth.

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/.

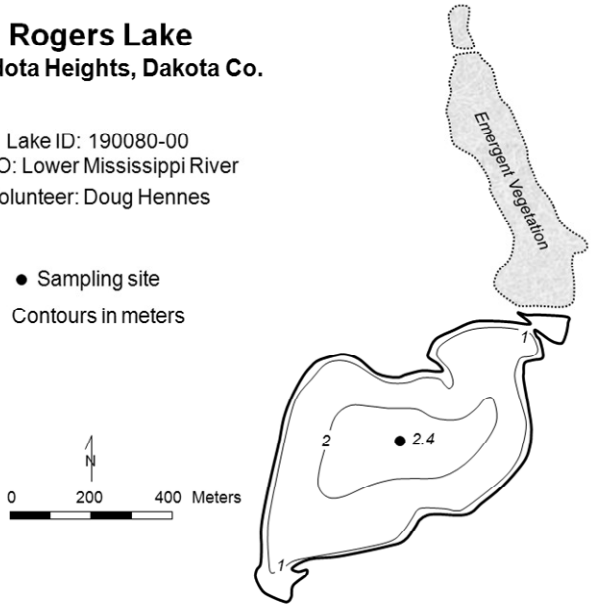
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

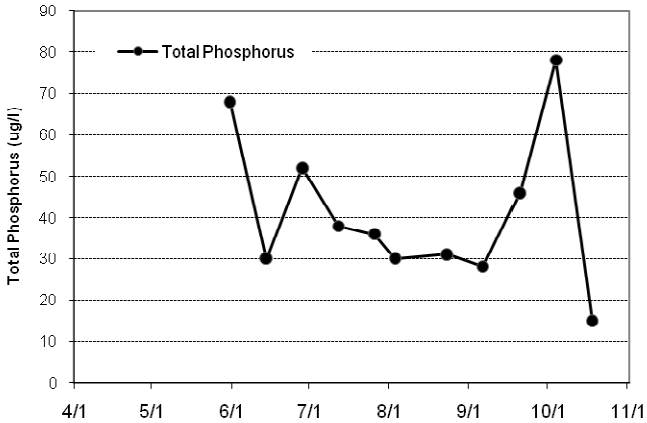
Rogers Lake

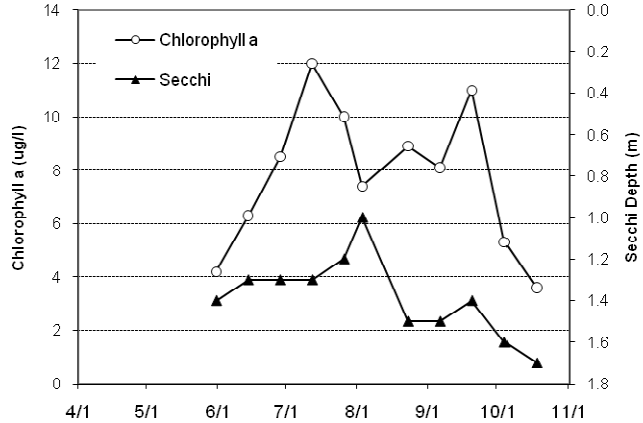
Mendota Heights, Dakota Co.

Lake ID: 190080-00
WMO: Lower Mississippi River
Volunteer: Doug Hennes

● Sampling site
Contours in meters

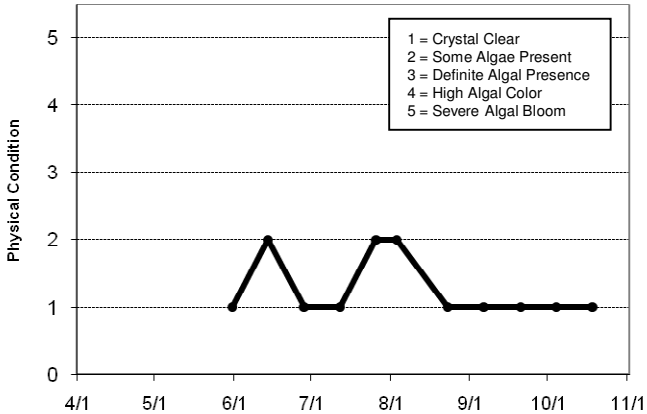






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/31	18.9				4.2	68		1.4	1	1
6/14	23.9				6.3	30		1.3	2	2
6/28	24.6				8.5	52		1.3	1	1
7/12	26.8				12	38		1.3	1	1
7/26	24.5				10	36		1.2	2	1
8/3	24.3				7.4	30		1.0	2	1
8/23	23.5				8.9	31		1.5	1	2
9/6	24.2				8.1	28		1.5	1	1
9/20	23.9				11	46		1.4	1	1
10/4	12.1				5.3	78		1.6	1	1
10/18	9				3.6	15		1.7	1	1



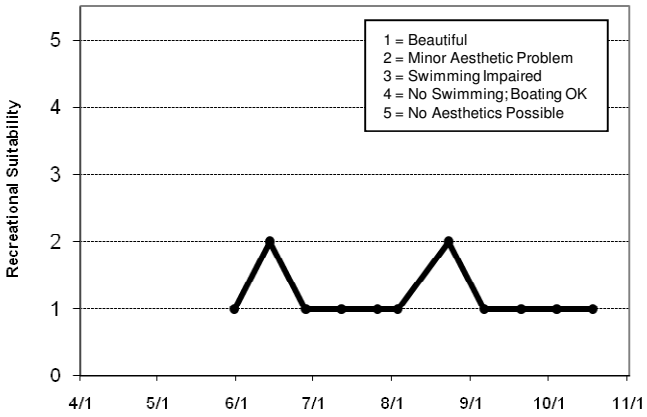
Lake Water Quality Grades Based on Summertime Averages

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				C	B	C
Chlorophyll a				A	A	A
Secchi Depth				D	C	C
Lake Grade				**C**	**B**	**B**

Source: Metropolitan Council and STORET data



Rose Lake [Site 1, north basin] (82-0012) *Washington Conservation District*

Rose Lake is a small lake located in the City of Lake Elmo (Washington County). There are little known morphological data available for the lake.

On each sampling day Site 1 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. Depth profiles for temperature and dissolved oxygen were also measured. The resulting data are summarized in tables and figures on the following page.

2009 summer (May-September) data summary

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	267.2	212.0	310.0	F
CLA (µg/l)	160.4	92.0	250.0	F
Secchi (m)	0.2	0.1	0.3	F
TKN (mg/l)	4.72	3.80	5.00	
			Lake Grade	F

Site 1 received a lake grade of F for 2009. Additional monitoring is suggested to continue to build the water quality database.

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.

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.

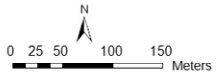
Rose Lake (North Basin)

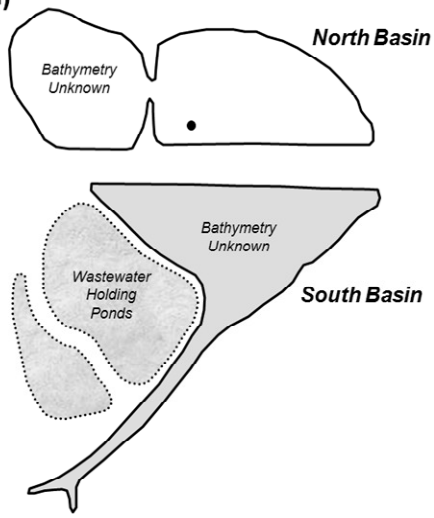
Lake Elmo, Washington Co.

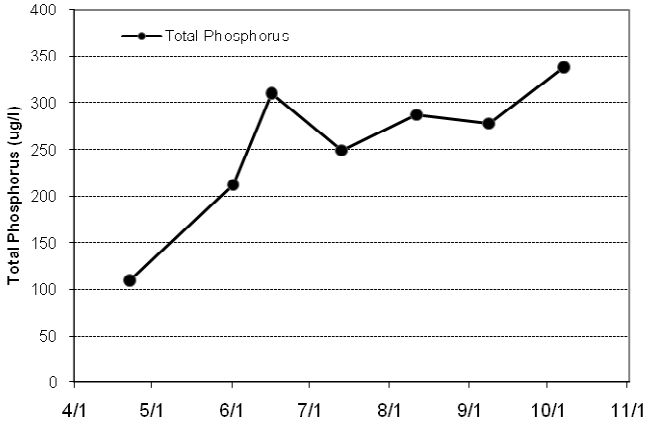
Lake ID: 820112-00
WD: Valley Branch
Volunteer: Washington Conservation District

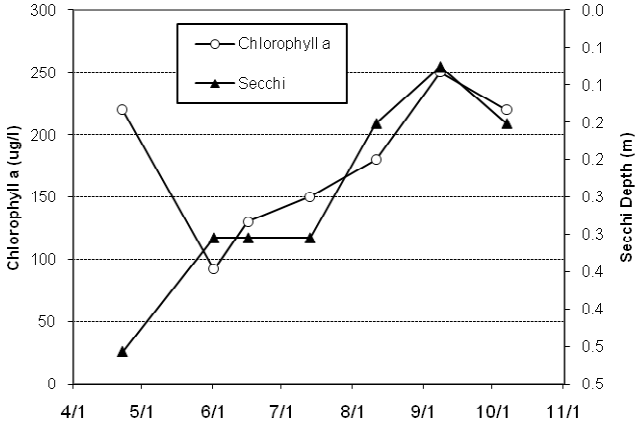
● Sampling site

Contours in meters



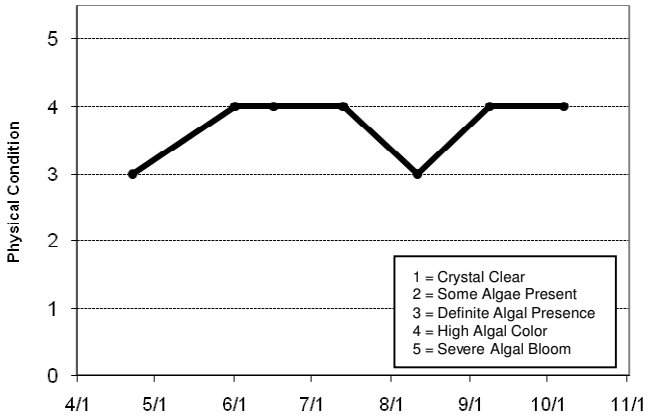






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/22	12.8	8.4	12.55	0.11	220	110		0.5	3	4
6/1	24.3	17.3	12.02	0.11	92	212		0.3	4	4
6/16	22.8	15.5	12.55	0.02	130	310		0.3	4	4
7/13	27.5	18.2	12.69	0.09	150	249		0.3	4	4
8/11	23.7	18.2	10.33	0.06	180	287		0.2	3	4
9/8	20.6	17.8	13.31	0.13	250	278		0.1	4	4
10/7	11	9.6	11.99	0.13	220	338		0.2	4	4



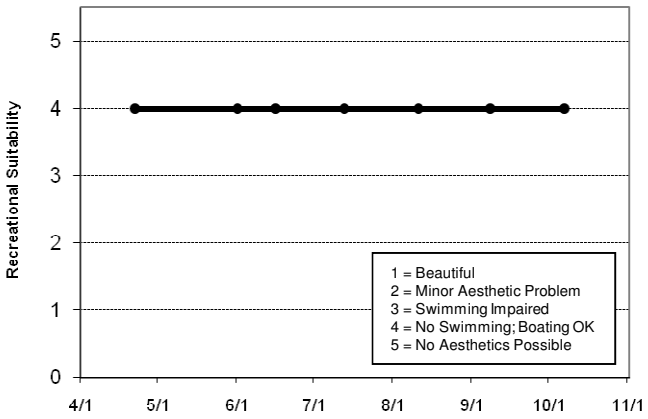
Lake Water Quality Grades Based on Summertime Averages

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					D	F
Chlorophyll a					F	F
Secchi Depth					F	F
Lake Grade					**F**	**F**

Source: Metropolitan Council and STORET data



Rose Lake [Site 2, south basin] (82-0012) *Washington Conservation District*

Rose Lake is a small lake located in the City of Lake Elmo (Washington County). There are little known morphological data available for the lake.

On each sampling day Site 2 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. Depth profiles for temperature and dissolved oxygen were also measured. The resulting data are summarized in tables and figures on the following page.

2009 summer (May-September) data summary

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	272.8	185.0	408.0	F
CLA (µg/l)	137.6	88.0	200.0	F
Secchi (m)	0.2	0.2	0.3	F
TKN (mg/l)	3.74	2.80	4.60	
			Lake Grade	F

Site 2 received a lake grade of F for 2009. Additional monitoring is suggested to continue to build the water quality database.

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.

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.

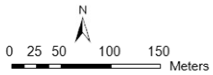
Rose Lake (South Basin)

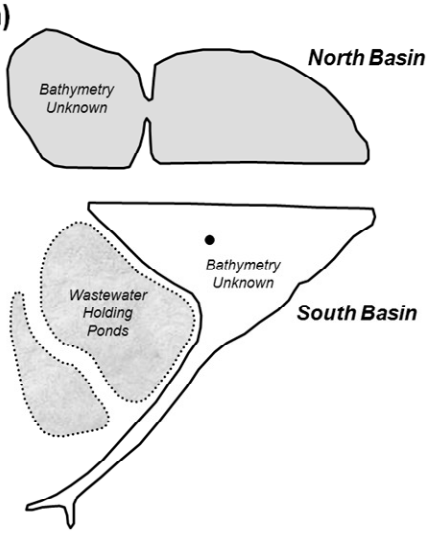
Lake Elmo, Washington Co.

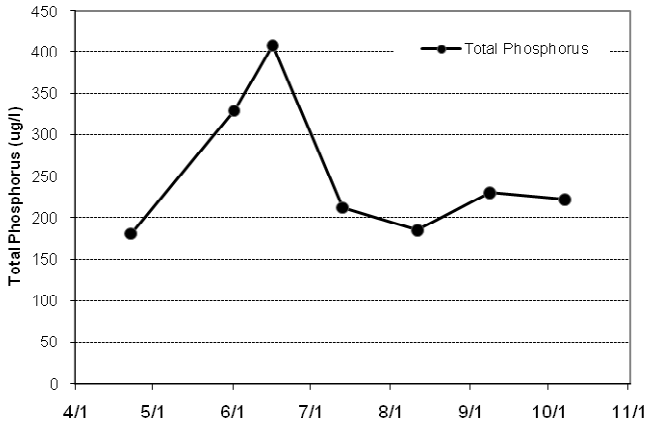
Lake ID: 820112-00
WD: Valley Branch
Volunteer: Washington Conservation District

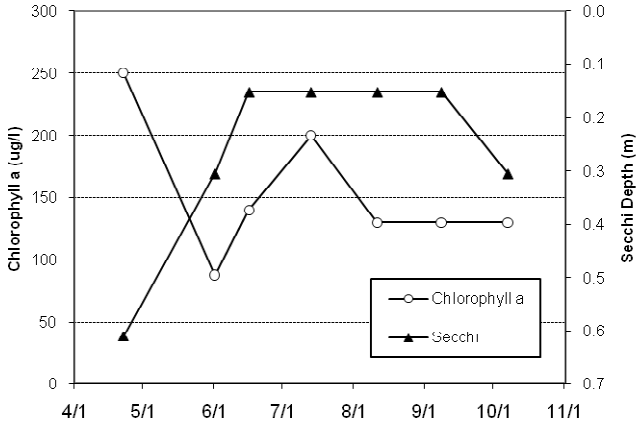
● Sampling site

Contours in meters



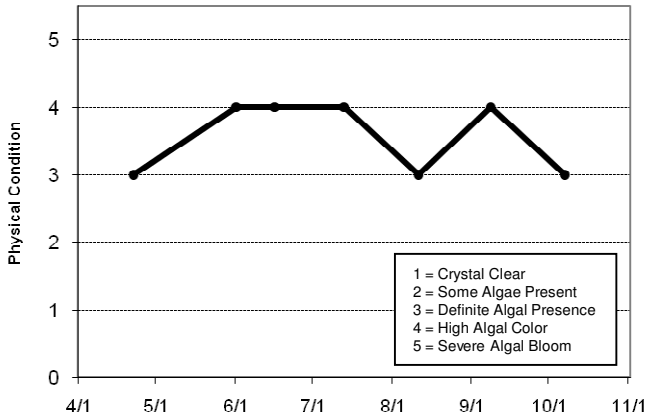






2009 Data

DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
4/22	11.5	6.6	12.01	0.11	250	181		0.6	3	4
6/1	21.5	13.5	12.01	0.07	88	329		0.3	4	4
6/16	23.3	15.1	16.35	0.07	140	408		0.2	4	4
7/13	26.6	14.4	14.32	0.04	200	212		0.2	4	4
8/11	24.6	16	11.07	0.06	130	185		0.2	3	4
9/8	21.5	16.9	11.12	0.06	130	230		0.2	4	4
10/7	11.2	10.5	11.3	0.23	130	222		0.3	3	4



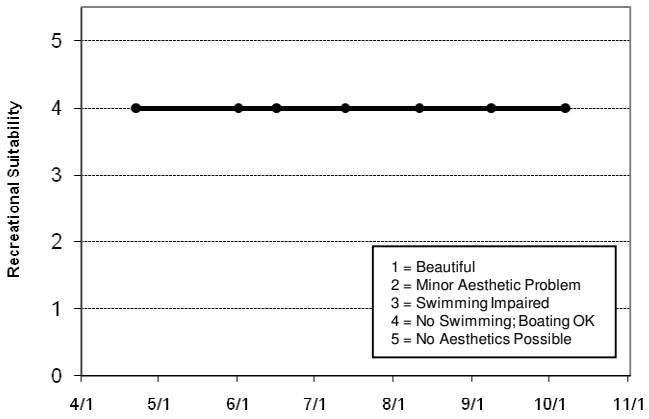
Lake Water Quality Grades Based on Summertime Averages

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					D	F
Chlorophyll a					F	F
Secchi Depth					F	F
Lake Grade					**F**	**F**

Source: Metropolitan Council and STORET data



Rutz Lake (10-0080) *Carver County Environmental Services*

Rutz Lake is a 61-acre lake located within Waconia Township (Carver County). The maximum depth of the lake is 4.0 m (roughly 13 feet). 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.

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

Parameter	*Mean*	*Minimum*	*Maximum*	*Grade*
TP (µg/l)	179.3	132.0	253.0	F
CLA (µg/l)	69.5	28.0	140.0	D
Secchi (m)	0.6	0.5	0.7	F
TKN (mg/l)	2.88	2.50	3.40	
			Lake Grade	D

The lake received a lake grade of F for 2009, which is consistent with its limited water quality database. 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.

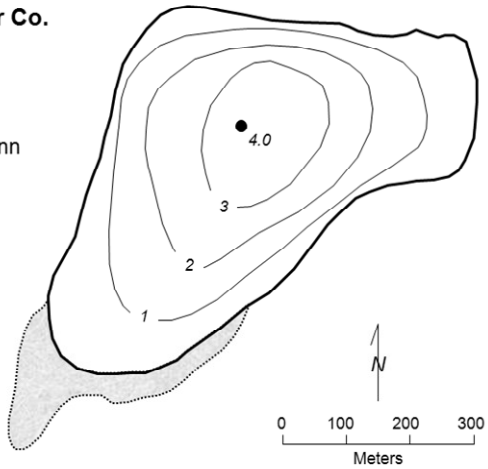
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

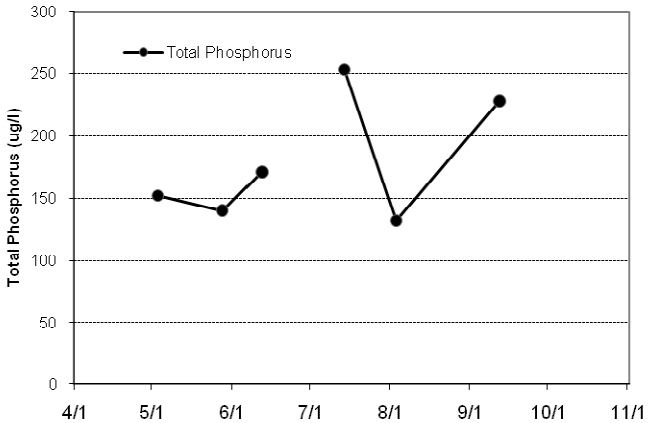
Rutz Lake

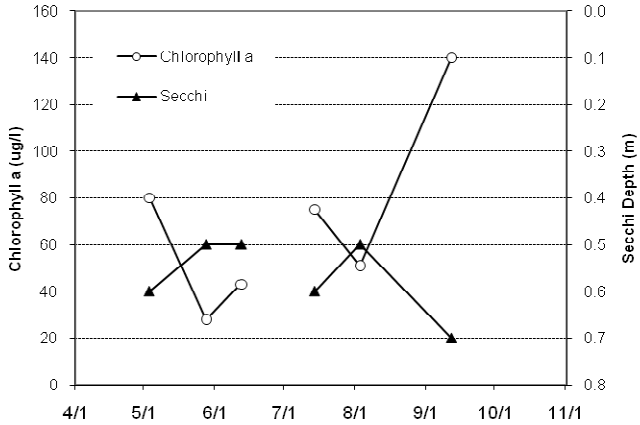
Waconia Twp., Carver Co.

Lake ID: 100080-00
WMO: Carver Creek
Volunteer: Marty Ziermann

● Sampling site
Contours in meters

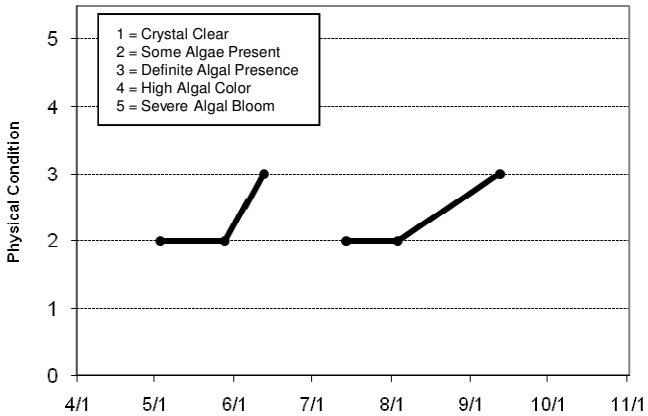






2009 Data

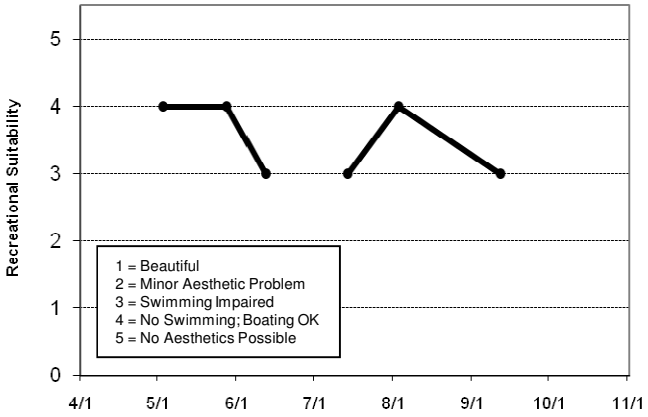
DATE	Surf Tmp (ºC)	Bot Tmp (ºC)	Surf DO (mg/L)	Bot DO (mg/L)	CLA (µg/L)	Surf TP (µg/L)	Bot TP (µg/L)	Secchi (m)	PC	RS
5/3	13				80	152		0.6	2	4
5/28	20.7				28	140		0.5	2	4
6/12	20.4				43	171		0.5	3	3
6/12										
7/14										
7/14	23.8				75	253		0.6	2	3
8/3	24.3				51	132		0.5	2	4
9/12	30.2				140	228		0.7	3	3



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									F			
Chlorophyll a									C			
Secchi Depth									D			
Lake Grade									**D**			

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

Source: Metropolitan Council and STORET data