2015 Study of the Water Quality of 164 Metropolitan Area Lakes

Excerpts of BCWMC lakes. Complete document: https://eims.metc.state.mn.us/Documents

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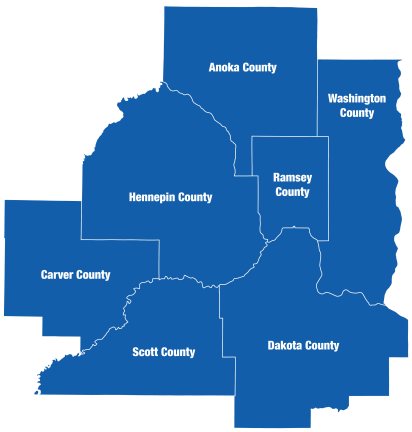

The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Council operates the regional bus and rail system, collects and treats wastewater, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council board is appointed by and serves at the pleasure of the governor.

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2015 Study of the Water Quality of 164 Metropolitan Area Lakes

Report by

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October 2017

Executive Summary

This report is the latest in a continuing series of reports summarizing results of the annual lake monitoring program of the Metropolitan Council (METC) in the Twin Cities seven-county metropolitan area (TCMA). The METC has collected water quality data on area lakes since 1980. This report contains data from a total of 177 lake sites on 164 lakes monitored in 2015. The monitoring program in 2015 included 2 lakes and 3 newly established lake sites not previously monitored by the Council.

To date, the METC's lake monitoring program (including monitoring by METC staff and volunteers) has provided an important tool for making informed lake management decisions. Data from our regional lake monitoring program are frequently used to determine possible trends in lake water quality, estimate expected ranges in water quality of non-monitored lakes, examine intra-and inter-regional differences, determine potential water quality impairments, and investigate the relationships between land use and water quality.

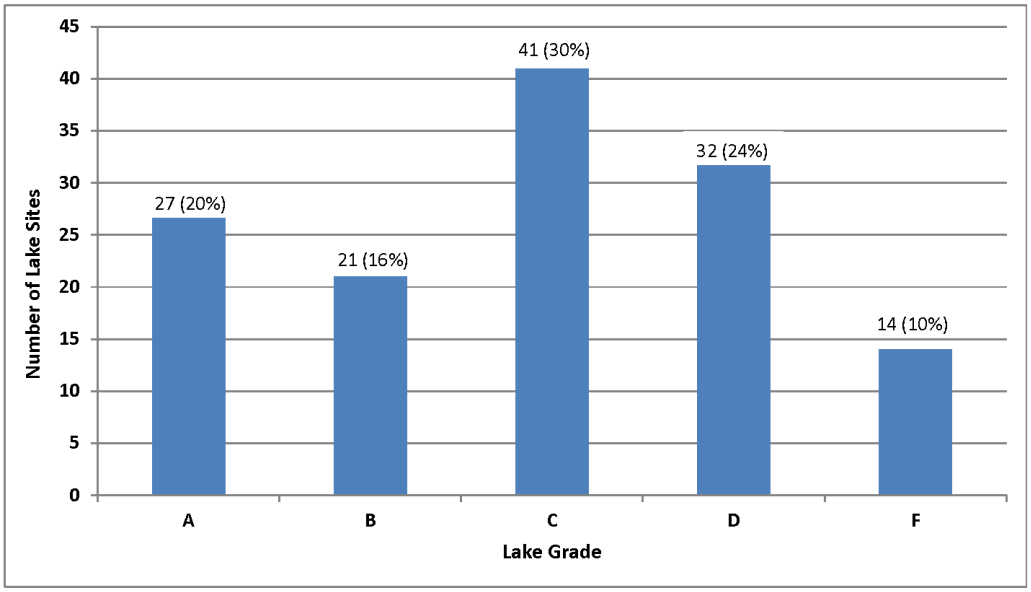
The objectives of this program are:

1. Provide lake water quality data to lake, watershed and water resource managers.
2. Advise managers of known or suspected threats to lake water quality.
3. Continue to compile a water quality database on the five area lakes that support a trout fishery.

The year 2015 marked the twenty-first year that the Citizen-Assisted Monitoring Program (CAMP) was used to increase our knowledge of the water quality of TCMA lakes. CAMP volunteers visited their assigned lake on a biweekly basis from mid April to mid October. The volunteers measured surface water temperature and water transparency, documented lake and weather conditions, and collected surface water samples. The samples were analyzed for total phosphorus, total Kjeldahl nitrogen, and chlorophyll-a by the METC's analytical laboratory located at the Metropolitan Wastewater Treatment Plant in St. Paul, MN. CAMP volunteers are sponsored by a local partner. In 2015, there were 26 sponsors who consisted of a mix of municipalities, watershed management organizations (WMOs), watershed districts (WDs), and counties.

Most lakes were given a lake grade which was calculated on the basis of three parameters: total phosphorus, chlorophyll-a (trichromatic), and Secchi depth (water clarity). Not all lake sites received a lake grade because of an insufficient quantity of data during the summer-time period of May through September. The distribution of lake grades for all the lake sites monitored in 2015 is shown in the following figure.

For those lake sites with sufficient data to calculate a lake grade, approximately one third of the lake sites (37%) received a lake grade of C. The water quality of these sites is considered average as compared to other lakes in the TCMA. Approximately one third of the lake sites (36%) were above average (A and B grades), and approximately one third (27%) were below average (D and F grades).



Lake Grades for the 2015 Monitoring Season

Since 1980, 385 TCMA lakes have been monitored through the METC's lake monitoring program. Since some of these lakes have multiple monitoring sites, a total of 424 lake sites have been monitored. The data from the METC's lake monitoring program are stored in the METC's Environmental Information Mangement System (EIMS), the Minnesota Pollution Control Agency's Environmental Quality Information System (EQuIS), and the U.S. EPA's national water quality data repository, called STORET (STOrage and RETrieval). Data for all METC lake monitoring sites can be conveniently retreived via the METC's web-based EIMS, at: http://es.metc.state.mn.us/eims/. While the METC has done its best to enhance and expand the region's lake water quality database, it is apparent that one of the most economical and efficient methods to expand knowledge of our lakes has been with the assistance of volunteers and the cooperation and financial support of local partners via the CAMP.

If you have questions pertaining to the lake data or descriptions contained in this report, inquiries about CAMP, or suggestions of lakes the METC should consider monitoring in the future, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

Acknowledgments

This report represents the coordinated efforts of many individuals. The author would like to acknowledge the following people for their technical and supportive contributions to the preparation of this report:

CAMP Volunteers and Local Partners

The enthusiastic participation of local sponsors and volunteers help make the CAMP successful. A list of sponsors and volunteers is shown in Appendix C. The following volunteers are given added appreciation for their multiple years of service:

12 to 23 years of service

23 years of service
Diane Coderre – Sunset Lake

22 years of service
Washington CD – multiple lakes

21 years of service
Carver Co. Env. Services staff – multiple lakes

20 years of service
John Ritter – Lake Alimagnet
Wargo Nature Center – George Watch

18 years of service
Wally Shaver – Lac Lavon Lake

17 years of service
Lakeville staff – multiple lakes

15 years of service
Gene Berwald – Pine Tree Lake
Tom Goodwin – Orchard Lake

14 years of service
Bonnie Juran – Klawitter Lake

13 years of service
Kitty Francy-Payton – Long Lake
Jim Kellogg – Cobblecrest Lake

12 years service
Bill Feely – Long Lake
David Florenzano – Riley Lake
Wayne Hubin – Swede Lake
Sue Morgan & Linda Scott – St. Joe Lake
Gordan & Fran Warner – Mitchell Lake

8 to 11 years of service

11 years of service
Carpenter Nature Center (volunteer coordinator: Mayme Johnson) – Lake St. Croix
Jim and Roberta Harper – Lake St. Croix
Jeff Keene – O'Connor Lake
Rick Meierotto – Lake St. Croix

10 years of service
David Bluhm – White Rock Lake
Minnesota DOT staff – Rest Area Pond
Joe Williamson – McMahon Lake

9 years of service
Sandy & Mike Boyce – Lake O'Dowd
John Burton – Wing Lake
Doug Hennes – Rogers Lake
Boe Meier — Olson Lake
Mendota Heights staff — Lemay Lake
Jim Nayes – Horseshoe Lake
Steve Schreiber — Little Comfort Lake
Curt Sparks – Sylvan Lake
Dan Stanek – Scout Lake
Robert White — Northwood Lake

8 years of service
Carolyn Dindorf – Magda Lake
Gary Gerding – Karth Lake
Steve Iverson – DeMontreville Lake
Tam and Dick McGehee – Langton Lake

6 to 7 years of service

7 years service
Jeff Christianson – Farquar Lake
Tim and Sharon McCotter – Lucy Lake
Mark McMullen – Reitz Lake
Wally Ostlie – Comfort Lake
Joe Reithmeyer – Lake Edith
Steve Schmaltz – Forest Lake, west basin
Jeff Sluiter – Cobblestone Lake
Tim Weber – La Lake

6 years of service
Steve Aldritt – Lake Minnewashta
Paul Bolstad – Fish Lake
Wendy Griffin – Lake Elmo
Marvin Groth – Bass Lake
David Nelson – Medicine Lake
James Stowell – Sunfish Lake
Douglas Toavs – Moody Lake

3 to 5 years of service

5 years service
Pat Barrett – Klawitter Lake
Paul Erdmann – Bush Lake
Lisa McIntire – Penn Lake
Karl Nelson – Medicine Lake
Diane Williamson – McMahon Lake

4 years service
Andrew Elmquist – Karth Lake
Lowell Mohn – Cedar Lake
Paul O'Brien – South Oak Lake
Joe Tranchilla – Crystal Lake
Judy Weninger – Forest Lake, east basin

3 years service
Jonathon Burris – Twin Lake
Thomas Chaklos – Haas Lake
Dakota SWCD staff – Pickerel Lake
Nancy Ebner – Westwood Lake
Elizabeth Erdmann – Bush Lake
Chris Foley – Laura Lake
Barrie Froseth – Lost Lake
Leif Hembre – Square Lake
Stephen Sando – Cornelia Lake
Curt Savstrom – Marion Lake
Mike Zytkovicz – Earley Lake

Metropolitan Council Staff

- The MCES Laboratory Services Section, for laboratory analysis of the lake samples.
- Craig Skone for creation of the lake maps.
- The MCES Electronic Lake Monitoring Report Team for the continued improvement of the automation of the annual lake report.

Contents

Introduction

This 2015 report continues a series of annual lake reports from 1980 to present. Since 1980, 385 lakes in the Twin Cities Metropolitan Area (TCMA) have been monitored through the Metropolitan Council's (METC) lake monitoring program. Since some of these lakes have multiple monitoring sites, a total of 424 lake sites have been monitored. This report contains data from 177 lake sites on 164 lakes that were monitored in 2015, including 2 lakes and 3 lake sites that have not been previously monitored by the METC lake monitoring program. Figure 1 shows the location of the lakes monitored in 2015 by MCES staff and by volunteers of the Citizen-Assisted Monitoring Program. A list of lakes that have been monitored by the METC's monitoring program is shown in Appendix A. Refer to Appendix B for morphometry and other lake characteristic data.

METC lake monitoring data are available via:

- the METC's Environmental Information Management System (EIMS), at http://es.metc.state.mn.us/eims/
- the Minnesota Pollution Control Agency's (MPCA) Environmental Data Access (EDA) system, at http://www.pca.state.mn.us/index.php/data/surface-water.html
- the STORET Data Warehouse, which is the U.S. EPA's national water quality data repository, at http://www.epa.gov/storet/dbtop.html

The objectives of the METC lake monitoring program are:

1. Provide lake water quality data to lake, watershed and water resource managers.
2. Advise managers of known or suspected threats to lake water quality.
3. Continue to compile a water quality database on the five area lakes that support a trout fishery.

The long-term goal of the METC lake monitoring program is to provide a comprehensive database to enable cities, counties, watershed management organizations (WMOs), and watershed districts (WDs) to better manage TCMA lakes. The Council believes that without such comprehensive lake data, the foundation of lake and watershed management plans is weakened. While the METC has provided a commendable lake monitoring program, monitoring by other organizations is also encouraged (Osgood 1989a).

To date, the METC lake monitoring program has been an important tool for making informed lake management decisions. The majority of the lakes have been visited on a rotating schedule over the past 30 years, so as to develop an historical database to help lake and watershed managers in decision making. Data from the METC lake monitoring program are frequently used to determine possible trends in lake water quality, estimate expected ranges in water quality of non-monitored lakes, examine intra-and interregional differences, and investigate the relationships between land use and water quality. A comprehensive regional lake monitoring program should ensure adequate spatial and temporal representation of water quality. However, due to cost and logistical problems, ground-based monitoring programs usually sacrifice spatial coverage (fewer lakes) in favor of more frequent sampling.

As is the case throughout the United States, the majority of lakes in the TCMA suffer from this lack of water quality data. Area lakes and watershed managers need a broad, comprehensive water quality database for regulatory and decision-making purposes. Because of the lack of public funding and the high ratio of area lakes to monitoring staff, very little data exist for the majority of TCMA lakes, and local decision-makers are forced to make management decisions lacking adequate information.

The METC addressed this lack of adequate lake water quality data by initiating a citizen-assisted monitoring program (CAMP) in 1993. The purpose of the CAMP is to provide a more complete and improved water quality database for TCMA lakes. This database gives local decision makers a better idea of the water quality of their lakes, thereby assisting them in decision making on water

quality issues. The METC's goal for the CAMP is to provide a means to gather as much information on TCMA lakes as is economically possible.

The METC lake monitoring program, especially the use of volunteer monitors through the CAMP, has played a key role in the METC's recent efforts to use satellite images to assess annual lake water clarity for the entire TCMA. The monitoring program provides the "ground-based" measurements used to calibrate mathematical models, which in turn are used to interpret the satellite images. The use of satellite technology provides a cost-effective way to extend the analysis of the TCMA's lake water quality from just the lakes involved in our ground-based programs to all the lakes in the region. Over time, the satellite–based information can be used to detect how lake trophic conditions (especially water clarity) have changed over time and space in relation to changes in land-use and land-cover conditions.

The METC lake monitoring program began a volunteer annual ice-monitoring program in the winter of 2009 - 2010. The purpose of this program is to monitor the duration of annual ice cover on TCMA lakes over a long time period. This information is especially useful because the duration of ice cover is a good indicator of climate change.

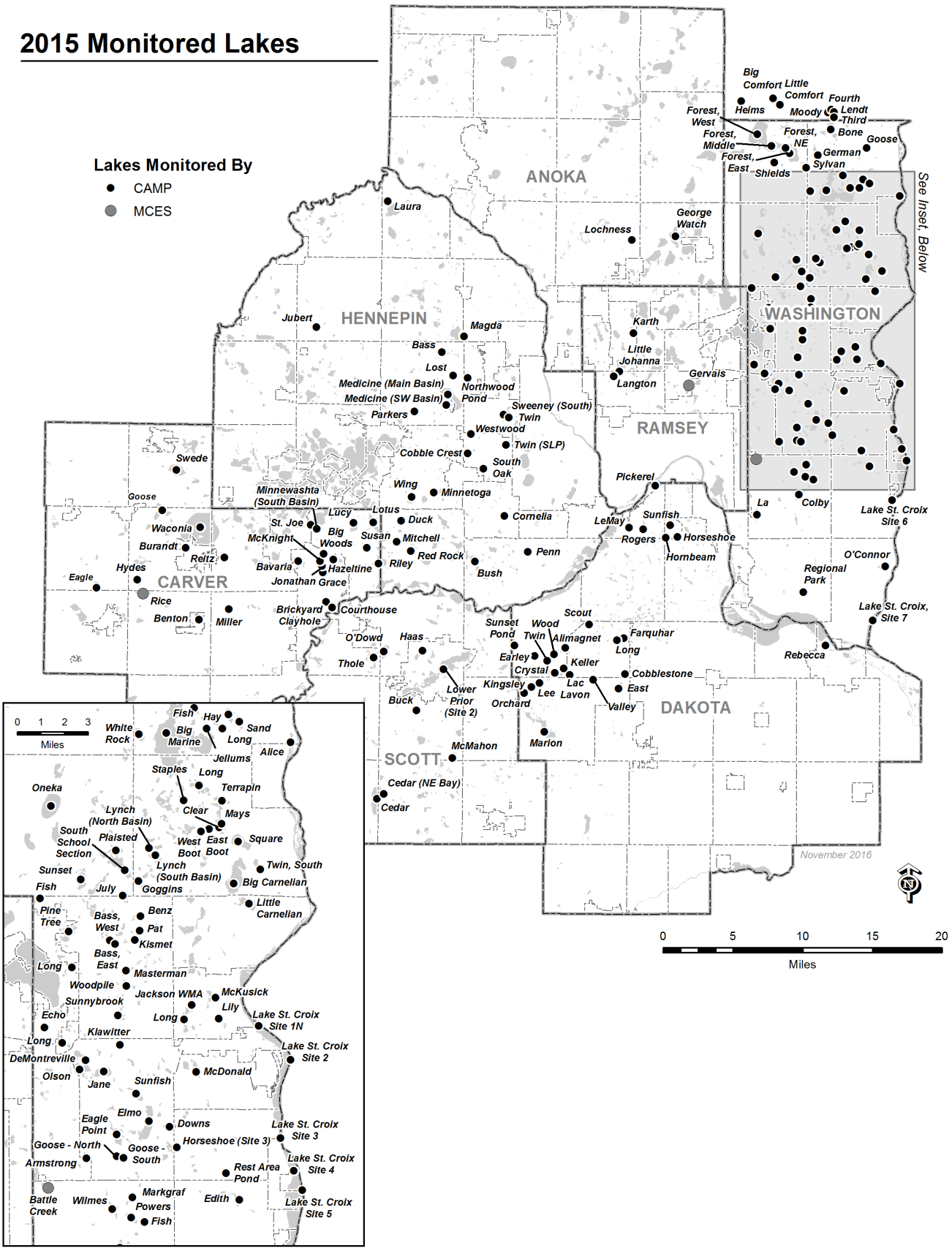


Figure 1. 2015 Monitored Lakes

Citizen-Assisted Monitoring Program (CAMP)

Topics Covered in this Chapter

The following section describes an overview of the CAMP, methods, and results.

CAMP Overview

The year 2015 marked the twenty-second year of the CAMP since the program began in 1993. The CAMP monitored 174 lake-sites on 161 lakes in 2015, including 7 lakes that have not been previously monitored by the METC (Figure 1). The CAMP is jointly funded by the METC and local sponsors such as WDs, WMOs, counties, and cities.

The main purpose of the CAMP is to provide lake and watershed managers with water quality data that can support them in properly managing water resources, and also provide much needed historical data to help document water quality changes and trends. Previous volunteer monitoring programs conducted throughout the United States have shown that, with proper equipment and instructions, volunteers can be trained to produce credible water quality data. Because most of the volunteers live near the lakes they are monitoring, they are very interested in determining any trends and/or changes in local water quality (Nichols 1992). An additional benefit of the monitoring program is the volunteer's increased awareness of the lake's condition and workings throughout the summer, which may foster grass-roots initiatives to protect lakes and promote support for lake management.

Prior to the inception of the CAMP in 1993, the METC conducted a pilot study in 1991 to assure that the data collection methods used by citizen volunteers would be credible. Results of the pilot study showed that the volunteer monitoring methods, as used in the CAMP, yielded results comparable to monitoring methods used by METC staff (Hartsoe and Osgood 1991).

CAMP volunteers collect surface water samples that are analyzed for total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll-a (CLA). In addition, they measure surface water temperature and water transparency, and record user perceptions. Some lakes are monitored for dissolved oxygen. Most lakes are visited biweekly from April through October (fourteen sampling dates), and are sampled over the lake's deepest open-water location. In 2015, some of the lakes were not monitored on each of the desired 14 sampling weeks. The reasons for the missed sampling dates varied. However, the majority of the lakes, even with the missed sampling dates, were sampled adequately and often enough to provide an annual overview of the water quality of each lake. Water samples were submitted to METC staff and then analyzed at the MCES-EQA laboratory in St. Paul, MN.

Acknowledgments

The successful performance of the 2015 CAMP would not have been possible without the greatly appreciated work performed by monitoring volunteers, and the support of the organizations that enrolled lakes in the program. The enrolling organizations, which included 11 cities, 10 watershed management organizations and watershed districts, 2 counties, 1 basin planning team, and 1 conservation district were involved in volunteer recruitment, training, and occasional follow up on the progress of their volunteer lake monitors. Without this help, the program would not have been as successful.

Those deserving the greatest appreciation are the volunteers themselves. Their efforts have made this program successful. A list of the 2015 CAMP volunteers is shown in Appendix C. The METC and the local sponsors thank them for their sustained efforts, including their quality work.

CAMP Methods

Recruiting Volunteers

Active recruitment of lakes and interested volunteers for the CAMP began in the winter months prior to the monitoring season. Potential sponsors were solicited for their list of lakes that they wished to enroll in the CAMP. The sponsors were encouraged to recruit volunteers for each lake they enrolled in the program. If there were problems finding willing volunteers, the METC assisted with the search; however, the belief was that the supervising organization would benefit in the long run by having direct contact with the volunteers it recruited. This contact would hopefully open a two-way communication line between concerned citizens and local partners.

Training Volunteers

Volunteer training was conducted by METC staff at various locations throughout the TCMA. Volunteer training was scheduled between early March and early April. At each training session, volunteers were given a handbook describing the program, outlining the basics in the biology and ecology of lake systems, and containing detailed written instructions for the lake monitoring and data form completion procedures (Anhorn 2003a). Each volunteer was given a brief description of limnology and lake ecology as described in their handbook, instructed on the proper lake monitoring procedures, and shown how each piece of sampling equipment works. Finally, the volunteers were asked to sign a waiver of liability stating that they were not an employee of either the METC or the local partner enrolling the lake in the program.

At each training session, volunteers received the necessary equipment for lake monitoring. This equipment was purchased by the sponsor through the METC, and then loaned to the volunteers. At the end of the monitoring season, equipment was returned to the sponsor for use in future years. Each monitoring kit contains:

- Hand pump, filter holder, graduated cylinder, and filters for algal (chlorophyll) sampling
- Digital thermometer
- Map of the lake with sampling site(s)
- Field data sheets
- Sample jug
- Sample vials, Petri dishes, and labels
- Secchi disk
- Aluminum foil
- Tweezers (forceps)

Monitoring Methods

Volunteers were instructed to monitor their designated lake site(s) on a biweekly basis from mid-April to mid-October, including 14 possible sampling periods. The monitoring methods are detailed in the following paragraphs.

First, during pre-arranged sampling weeks, volunteers located and anchored their boat at pre-determined monitoring locations (typically the deep open-water area of the lake). Once at the monitoring location, lake and weather conditions were recorded on a field data sheet (Figure 2). The form also provides space to record natural and cultural observations which may have influenced what was happening in the lake (e.g. heavy rains prior to monitoring, application of herbicide, etc.), and includes an area to document general perceptions of the lake's physical condition and suitability for recreation.

The volunteers measured water transparency (also called water clarity) by lowering a Secchi disk on the shady side of the boat to the point at which it disappeared. After the disk disappeared, the disk was slowly raised until at the point where the disk reappeared. The point at which the disk reappeared was defined as the Secchi depth (also called the Secchi transparency). The Secchi depth was recorded on the field data sheet.

The next lake monitoring step involved the collection of the surface water sample. The surface water sample was collected in a clean one-gallon plastic (HDPE) jug. The volunteer pre-rinsed the jug three times with lake water. After rinsing, the jug was filled with lake water by submerging it upside down to forearm depth and turning it upright while submerged. The filled jug was returned to the boat, wherein immediately the volunteer measured the water temperature in the jug. After the temperature was measured, aliquots were poured from the jug for laboratory analysis. These aliquots were decanted either while the volunteer was in the boat, or the jug was taken to shore where the aliquots were decanted. The collection methods for each parameter are given as follows:

- **Temperature**: Surface water temperature was measured in the volunteer's sampling jug using a digital thermometer that reads to 0.1°C. The temperature was measured immediately following sample collection. Special care was taken to keep the sample out of direct sunlight in order to minimize temperature change.
- **Total Phosphorus (TP) and Total Kjeldahl Nitrogen (TKN)**: Duplicate samples were decanted from the volunteer's jug into their respective triple pre-rinsed, pre-labeled 50 milliliter (ml) vials. These samples were then immediately placed in the volunteer's freezer. The samples were stored there until they were picked up and delivered to the laboratory for analysis.
- **Chlorophyll.** Chlorophyll samples from the volunteer's jug were filtered in the field, out of direct sunlight, using a field filtration apparatus (called a filter holder) and a hand pump. Water from the sampling jug was measured using a graduated cylinder, and then poured into the reservoir of the filter holder. The reservoir holds approximately 250 ml. By squeezing the handle of the pump, the sample water was forced through a 1 micrometer (µm) glass-fiber filter, and the suspended planktonic algae were trapped on the filter. The filtered water was discarded. If possible, this process was repeated until a total of 1,000 ml of sample water was allowed to pass through the filter. However, if the water sample contained much suspended material, and the filter became clogged without allowing more water to pass through, the amount of water that did pass through the filter was recorded on the field data sheet and the sample label. The filter was then removed from the filter holder with a tweezers, and placed in a Petri dish. The Petri dish was then labeled, wrapped in aluminum foil to keep the sample in the dark, and frozen until pick-up and delivery to the laboratory for analysis.

The frozen samples were typically picked up by METC staff within approximately 15-75 days from sample collection, and were delivered to the MCES laboratory for analysis. For some CAMP lakes, sub-surface samples were also collected for analysis of TP, TKN, chloride, orthophosphate, and/or

total iron. These sub-surface samples were usually collected near the bottom of the lake using a Van Dorn sampler. Vertical profiles of dissolved oxygen and temperature measurements were also obtained on some lakes. However, subsurface samples and vertical profiles were done only by staff of local partner organizations, whose staff were monitoring via the CAMP.

CAMP Monitoring Form
Metropolitan Council Environmental Services

Lake Name: _____ Site #: _____
DNR ID#: _____

Sampling Date: _____ Time: _____ (military time)
(Use the same time on the sample labels.)

Name(s) of Volunteer(s):

_____ Quantity of samples collected: Nutrient: _____ CLA: _____

_____

SECCHI DISK DEPTH: _____meters

Check the box if the disk is visible on the bottom of the lake: ☐

Check the circle if the visibility of the disk is completely blocked by vegetation: ◯

SURFACE TEMPERATURE: _____°C

VOLUME OF FILTERED LAKE WATER (CLA): _____ml

GENERAL OBSERVATIONS
(Circle the one best choice)

Water Color

Clear Yellow
Green Gray
Brown Blue-Green
Comment:

Odor of Water

None Rotten Egg-like
Fishy Septic-like
Musty Other: _____
Comment:

Wind Conditions

Calm Light Breezy Strong

North South East West

(Choose one principal direction that the wind is mainly coming from.)

Water Surface

Calm Moderate Waves
Ripple Whitecaps
Small Waves
Comment:

Cloud Cover

0% 75%
25% 100%
50%

Lake Level

Above Normal
Normal
Below Normal
Staff Gage Reading _____

Amount of Aquatic Plants

None Moderate
Minimal Substantial
Slight

Air Temperature (°F)

< 40 81-90
41-60 > 90
61-80

Unusual Conditions in the past week: (e.g. storms, high winds, temp. extremes, fish kills, chemical applications). harvesting of vegetation, etc.)

Physical Condition

Crystal Clear (1)
Some Algae Present (2)
Definite Algae Present (3)
High Algal Color (4)
Severe Bloom (5)
(Odor, Scum)

Suitability for Recreation

Beautiful (1)
Minor Aesthetic Problem (2)
Swimming Slightly Impaired (3)
No Swimming / Boating OK (4)
No Aesthetics Possible (5)

ver. 2014

Figure 2. CAMP Field Data Sheet

Laboratory Analytical Methods

The chemical analyses of CAMP water samples were performed at the MCES-EQA laboratory, according to the methods shown in Table 1. Chlorophyll samples collected by the CAMP volunteers were analyzed according to the method shown in Table 1, except that the samples were not preserved with magnesium carbonate (MgCO3). The CAMP chlorophyll samples were preserved by freezing. Samples that were analyzed for TDP were filtered through a 0.45 µm membrane filter and then analyzed for TP.

Data Management

The field data from the volunteers' field data sheets and the analytical results from the MCES laboratory were entered into the Council's Environmental Information Management System (EIMS). The EIMS is a system for providing timely and reliable information for environmental planning and decision-making. The EIMS can be accessed via the internet at http://es.metc.state.mn.us/eims/. If there were questions concerning the data and lake observations, METC staff contacted the volunteer. The METC maintained contact with most volunteers throughout the season by telephone, in person during sample pick-up, or through their sponsor's CAMP coordinator.

Quality Assurance

CAMP uses a quality assurance (QA) program which includes quality control (QC) activities. The purpose of the QA program is to assure that CAMP produces and reports scientifically credible water quality data. The MCES laboratory follows its own internal QA program, which employs an extensive internal and external check and balance system to ensure credible data. Documentation of their QA program and QC procedures can be obtained from the laboratory.

The CAMP QA program has several components. One important component is training, which ensures that the volunteers are familiar with the CAMP monitoring methods prior to their first monitoring season. The training also ensures that the same monitoring methods are used by all the volunteers. Another component is that the volunteers' samples are checked by METC staff prior to submitting the samples to the MCES laboratory. The samples are checked for legible and correct labeling and sample integrity (e.g. cracked vials, missing caps, torn filters, etc.). Samples with poor integrity are discarded to avoid producing potentially erroneous data.

The CAMP sample data are reviewed after receipt from the MCES laboratory. The data are reviewed for outliers and other inconsistencies. Data that are determined to be suspect are flagged as such in the database. Data determined to be erroneous are censored and excluded from the database.

QC monitoring is another important component of the CAMP QA program. The purposes of QC monitoring are:

- To verify that the monitoring methods are producing reproducible data.
- To verify the monitoring performance of the volunteers with respect to professional staff.

A METC staff member performs QC monitoring throughout the monitoring season by visiting a volunteer's lake site during a scheduled monitoring week, but not necessarily on the same day as the volunteer's visit. The METC staff member monitors the lake site using the same methods and identical type of equipment as the volunteer. After the QC samples are collected, they are handled, stored, and submitted to the laboratory in the same manner as the volunteers' samples. Occasionally, an METC staff member accompanies a volunteer in the field during the monitoring season as a check on their monitoring methods. This latter method is used less commonly than the former

method. Accompanying a volunteer in the field is usually prompted by noting potential problems during the sample checking process, or if the volunteer expresses that they need further assistance or explanation.

If a problem is discovered during the course of the sample checking or QC monitoring processes, the volunteer is contacted to discuss the cause of the problem. If needed, a METC staff member visits with the volunteer to observe his/her monitoring activities, in an effort to help identify the cause of the problem. Once the cause is identified, the volunteer is given instructions on how to correct the situation. If the problem resulted in erroneous data, then the data are censored and excluded from the database.

Figures 3, 4, and 5 show the QC monitoring data for TP, CLA, and Secchi depth, respectively. The QC monitoring data are also shown in Appendix D which provides additional information such as dates of collection and TKN. Eight lake sites were selected in 2015 for the QA program. Out of the 8 lake sites selected and monitored, 5 lake sites were monitored within 4 days of the CAMP volunteer monitoring event. The monitoring event for Lily Lake was done concurrently with the volunteer.

The QC results showed good agreement between CAMP volunteer and METC staff collected samples and measurements. The TP comparison showed an R^2 value of 0.93 and a trend line close to a 1:1 relationship. The data points for the CLA comparison showed good agreement along the 1:1 relationship, with the exception of the one point for Lake O'Dowd, in which the volunteer results were lower than the METC staff results. The Secchi disk depth comparison had a very good R^2 value of 0.98. However the linear relationship skewed from the 1:1 relationship for clearer lakes.

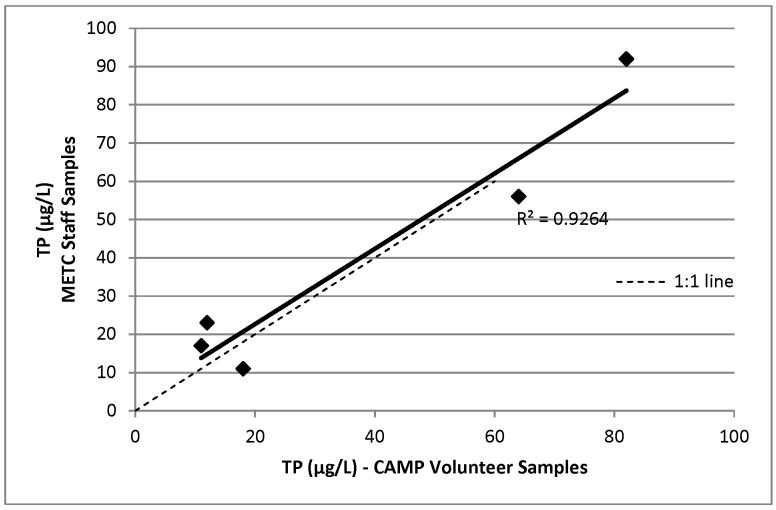


Figure 3. Total Phosphorus Quality Control Data

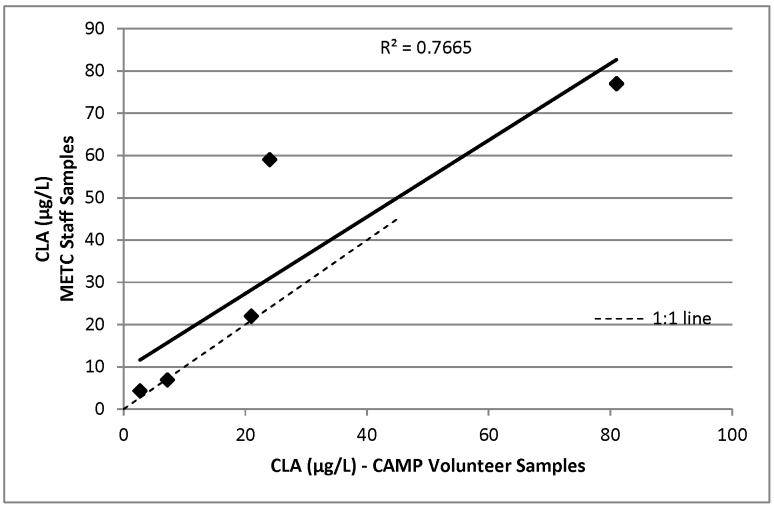


Figure 4. Chlorophyll-a Quality Control Data

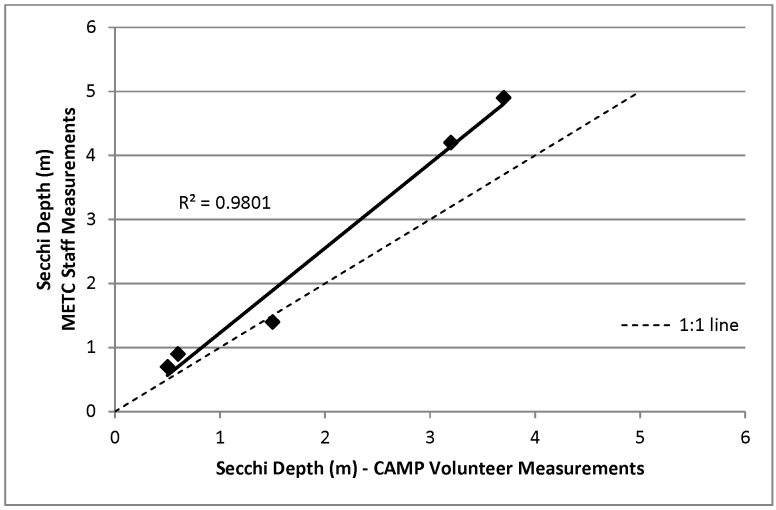


Figure 5. Secchi Depth Quality Control Data

Lake Quality Report Card

The Metropolitan Council, following its 1989 lake survey (Osgood 1989b), developed the lake quality report card. The idea is simply that lake water quality characteristics can be ranked by comparing measured values to those of other Metro Area lakes. In this way, technical information, which in the past had required professional analysis, can more easily be used by a less technical audience to visualize the water quality of their lake relative to other TCMA lakes. The lake grading curve (Table 2) represents percentile ranges for three water quality indicators: the summertime (May - September) average values for total phosphorus, chlorophyll-a, and Secchi depth. These percentiles use ranked data from 120 lakes that were monitored from 1980 – 1988:

Table 2. Lake Grading Curve

Grade	Percentile	TP (µg/L)	CLA (µg/L)	Secchi (m)
A	< 10	< 23	< 10	> 3.0
B	10 —30	23 — 32	10 — 20	2.2 — 3.0
C	30 — 70	32 — 68	20 — 48	1.2 — 2.2
D	70 — 90	68 — 152	48 — 77	0.7 — 1.2
F	> 90	> 152	> 77	< 0.7

The three variables used in the grading system (TP, CLA, Secchi depth) give an indication of the trophic status of the lake (Carlson 1977, Osgood 1982). The trophic status is the condition of the biological productivity of the lake ecosystem. The trophic status is strongly related to open-water nuisance-aspects of a lake (e.g. algal blooms, excess vegetation growth, poor water clarity), which can indicate accelerated aging (cultural eutrophication). For example, lake phosphorus concentration has been related to increased algal abundance, increased frequency of algal blooms, and to the increased abundance of blue-green algae (Osgood 1988). Chlorophyll-a, which is a pigment in plants (including algae) essential in the photosynthesis process, is used to estimate the algal abundance of a lake. Secchi depth relates to the appearance of a lake (generally the fewer algae, the better the transparency of a lake). TKN concentration was not included in the grading process because most lake nuisances in the area are related to the phosphorus concentration of the lake (Osgood 1988).

These water quality grades, however, only characterize the open-water quality of lakes. Other nuisances, such as the abundance of aquatic macrophytes, are not indicated in these grades.

The percentile curve can be used to assign individual grades for TP, CLA and Secchi depth to the monitored lakes. For example, a lake having a mean summertime Secchi depth of 1.7 m would receive a “C” grade for Secchi depth. A grade of C is considered average for TCMA lakes. Lakes were also assigned a single, overall grade, called a lake grade. Lake grades were determined by averaging the individual parameter grades. A lake grade generally corresponds to descriptive rankings and recreational use conditions of the lake. Lakes receiving an “A” grade (upper 10 percentile) can be deemed as having full recreational use capability. A lake receiving a “B” lake grade is considered to have very good water quality and some recreational use impairment. Lakes receiving a “C” lake grade are considered to have average water quality but are recreationally impaired. A “D” grade lake translates to a very poor ranking with severely impaired recreational use. Lakes receiving an “F” lake grade have extremely poor water quality with little to no possible recreational use.

In 2000, the percentiles determined from the 1980-1988 water quality database of 120 lakes were compared to calculated percentiles from a more current and expanded 1980-1999 water quality database of 230 lakes. It was found that the percentiles from the expanded database were very similar to those determined from the 1980-1988 database. For this reason, and in an attempt to maintain consistency, the original 1980-1988 percentiles continued to be used for lake quality grading purposes (Anhorn 2003b).

2015 Lake Grades

Each lake monitoring site was given a lake grade if there were sufficient data to calculate the grade. At least 5 monitoring events are required to calculate a lake grade, and these 5 events must occur during the May-September (summer) period. Some lakes were not monitored sufficiently, so they did not receive a lake grade. Lakes that had more than one monitored lake site received a single grade based on the average of the lake site grades. The distribution of lake grades for lake sites monitored in 2015 is shown in Figure 6.

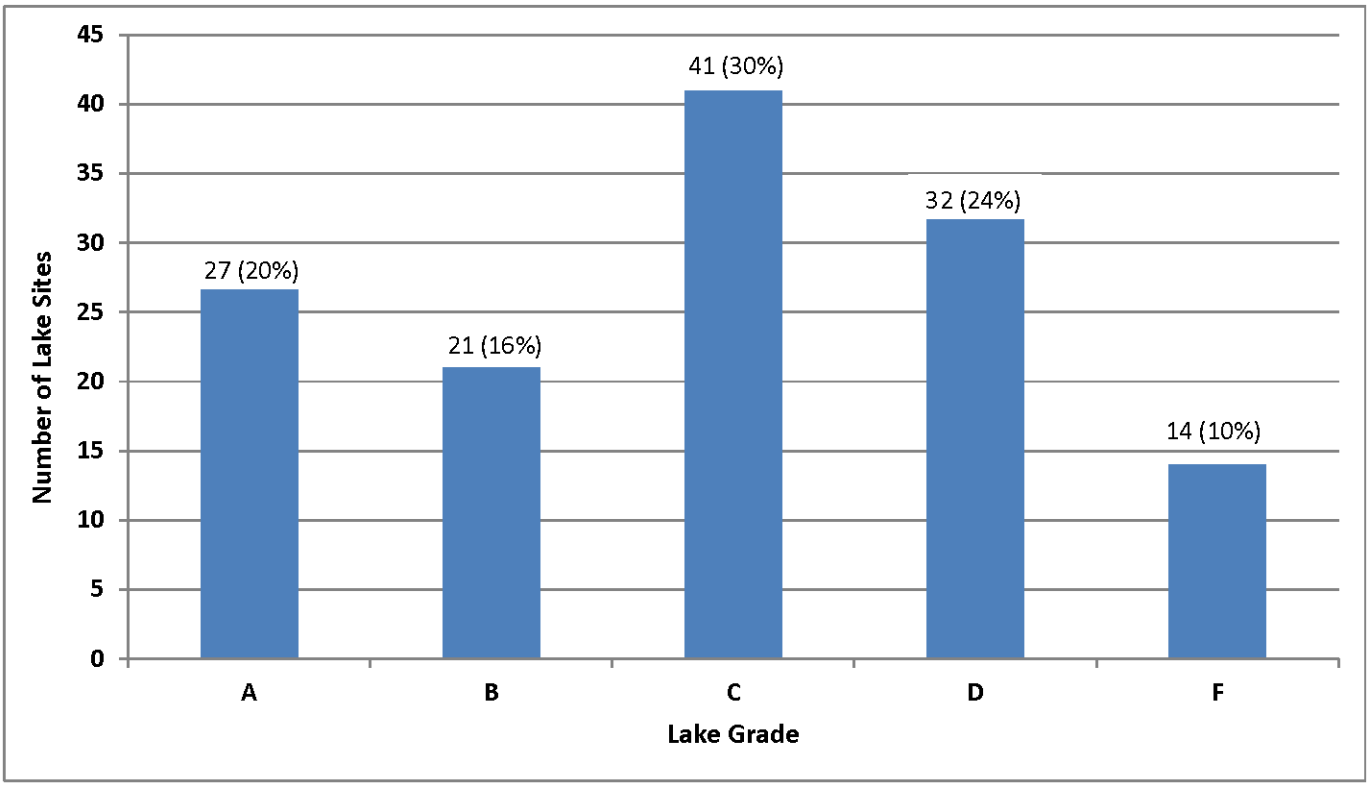


Figure 6. Distribution of 2015 Lake Grades

For those lake sites with sufficient data to calculate a lake grade, approximately one third of the lake sites (30%) received a lake grade of C. The water quality of these sites is considered average as compared to other lake sites in the TCMA. More lake sites (36%) were above average (A and B lakes) than lakes below average (D and F lakes at 34%).

Similar to past years, there is no distinct pattern as to where lakes with specific water quality were located. The lakes with below average lake grades (D's and F's) were not area specific. They were located throughout the TCMA. The majority of lakes with D and F grades are generally shallower with higher watershed-to-lake ratios. Lakes with high watershed-to-lake ratios have a more difficult time handling larger pollutant loads than larger lakes in watersheds of similar size and land-use. Shallow lakes typically do not stratify during the summer months, allowing the potential release of phosphorus from sediments to mix through the water column and become available for plant growth during the summer season.

Similarly, the lake sites with above-average grades (A's and B's) were not area specific. They were located throughout the TCMA. Common characteristics of the above-average lakes were deeper maximum and mean depths, development of a thermocline, and small contributing watersheds relative to the lake's surface area.

If there are questions pertaining to the lake data or descriptions contained in this report, inquiries about CAMP, or suggestions of lakes that the METC should consider monitoring in the future, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

Monitoring Results for CAMP Lakes 2015

The water quality of each volunteer-monitored lake is discussed in the following section. Each lake report includes a description of the lake's water quality condition, the year's wateer quality data, shown in tables and figures, and the water quality grades from 1980 through 2015.

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.

Medicine Lake [Site 1, Southwest Bay] (27–0104) *Bassett Creek Watershed Management Commission*

Volunteer: David, Josie, and Karl Nelson

Medicine Lake is located mainly in the City of Plymouth (Hennepin County). The lake is considered a Priority Lake by the Metropolitan Council for its high regional recreational value. The lake has a surface area of 886 acres. The maximum depth of the lake is 14.9 m (49 ft). Approximately 45 percent of the surface area of the lake is littoral zone, which is the shallow 0 – 15 feet depth zone that is typically dominated by aquatic plants.

The MPCA listed the lake as impaired with respect to aquatic recreational use (nutrient/eutrophication biological indicators) in 2004 and aquatic consumption (mercury in fish tissue) in 2004. The MN DNR designated the lake as being infested with Eurasian water milfoil (*Myriophyllum spicatum*) in 2007.

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

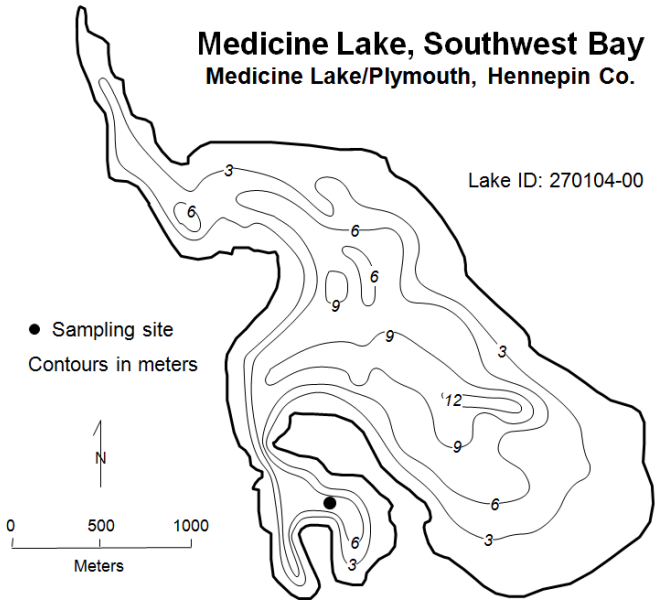
Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	43	14	89	C
CLA (µg/l))	26	3.8	73	C
Secchi (m)	2.3	0.9	4.5	B
TKN (mg/l)	1.03	0.73	1.40	
			Lake Grade	C

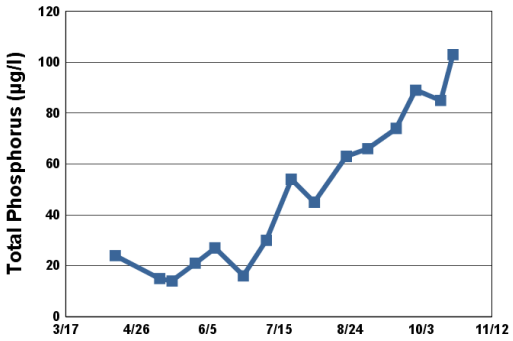
This lake site received a lake grade of C this year. This lake site received a B grade for CLA for first time in 2015. Continued monitoring is recommended to continue to build the water quality database.

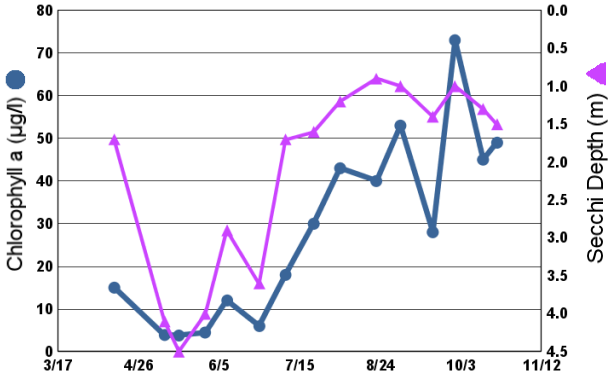
During each monitoring visit, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

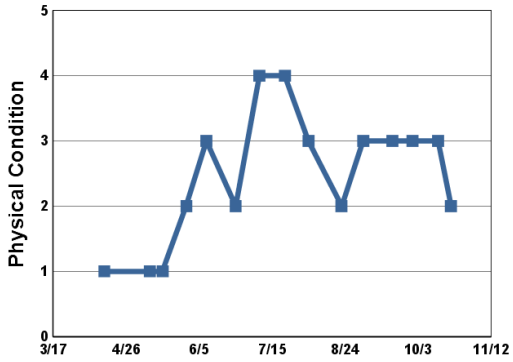
The Fisheries Section of the Minnesota Department of Natural Resources (MDNR) has conducted a fisheries survey on the lake. Information on the survey can be obtained through the MDNR Fisheries Section by calling (651) 259-5831 or by downloading the information off the Internet at http://www.dnr.state.mn.us/lakefind/.

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.

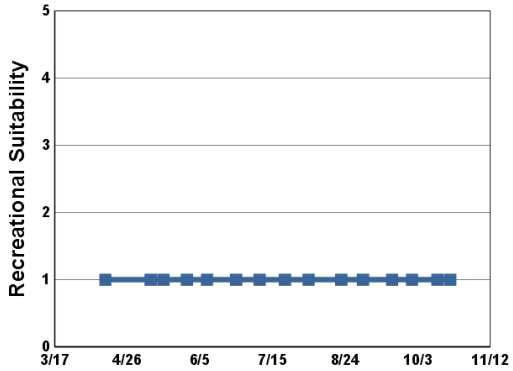








1 = Crystal Clear
2 = Some Algae Present
3 = Definite Algal Presence
4 = High Algal Color
5 = Severe Algal Bloom



1 = Beautiful
2 = Minor Aesthetic Problem
3 = Swimming Impaired
4 = No Swimming; Boating OK
5 = No Aesthetics Possible

2015 Data

Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
4/14/15	9.1		15.0	24	1.7	1	1
5/9/15	15.7		3.9	15	4.1	1	1
5/16/15	15.4		3.8	14	4.5	1	1
5/29/15	19.1		4.5	21	4.0	2	1
6/9/15	22.0		12.0	27	2.9	3	1
6/25/15	23.8		6.0	16	3.6	2	1
7/8/15	23.3		18.0	30	1.7	4	1
7/22/15	25.0		30.0	54	1.6	4	1
8/4/15	24.4		43.0	45	1.2	3	1
8/22/15	22.0		40.0	63	0.9	2	1
9/3/15	23.5		53.0	66	1.0	3	1
9/19/15	19.9		28.0	74	1.4	3	1
9/30/15	19.5		73.0	89	1.0	3	1
10/14/15	14.4		45.0	85	1.3	3	1
10/21/15	12.8		49.0	103	1.5	2	1

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP												
CLA				C								
Secchi				C								
Lake Grade												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP			C					C				
CLA												
Secchi			C					C				
Lake Grade												

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP			C		C		C	C	C	C	C	C
CLA							C	C	C	C	C	C
Secchi			C		C		C	C	C	C	C	B
Lake Grade							**C**	**C**	**C**	**C**	**C**	**C**

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

Medicine Lake [Site 2, Main Lake] (27–0104) *Bassett Creek Watershed Management Commission*

Volunteer: Patrick Anderson, Kirsten Erickson

Medicine Lake is located mainly in the City of Plymouth (Hennepin County). The lake is considered a Priority Lake by the Metropolitan Council for its high regional recreational value. The lake has a surface area of 886 acres. The maximum depth of the lake is 14.9 m (49 ft). Approximately 45 percent of the surface area of the lake is littoral zone, which is the shallow 0 – 15 feet depth zone that is typically dominated by aquatic plants.

The MPCA listed the lake as impaired with respect to aquatic recreational use (nutrient/eutrophication biological indicators) in 2004 and aquatic consumption (mercury in fish tissue) in 2004. The MN DNR designated the lake as being infested with Eurasian water milfoil (*Myriophyllum spicatum*) in 2007.

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	34	10	65	C
CLA (µg/l))	17	1.8	41	
Secchi (m)	2.5	1.0	4.5	B
TKN (mg/l)	0.90	0.63	1.00	
			Lake Grade	

There was an insufficient quantity of valid chlorophyll-a results to determine a CLA grade. A lake grade was not given because all three parameter grades are required to issue a lake grade. Continued monitoring is recommended to continue to build the water quality database.

During each monitoring visit, 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/.

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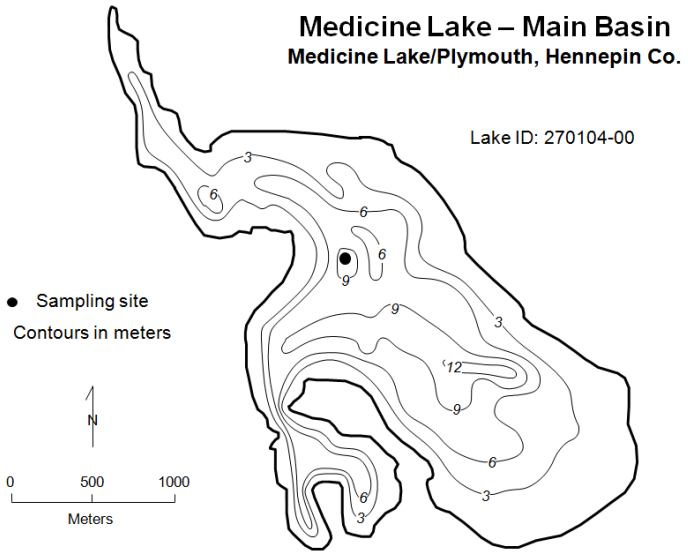
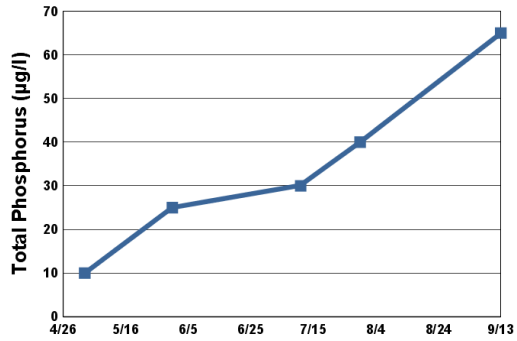
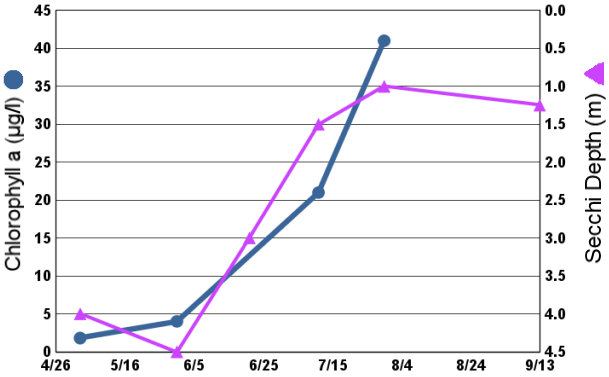
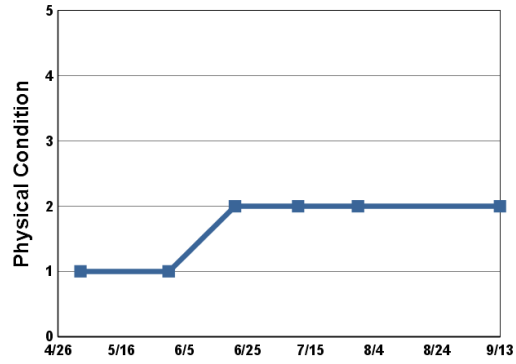


2015 Data

Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
5/3/15	18.3		1.8	10	4.0	1	1
5/31/15	18.6		4.0	25	4.5	1	1
6/21/15	24.5				3.0	2	1
7/11/15	25.4		21.0	30	1.5	2	1
7/30/15	25.5		41.0	40	1.0	2	1
9/13/15	21.4			65	1.3	2	1







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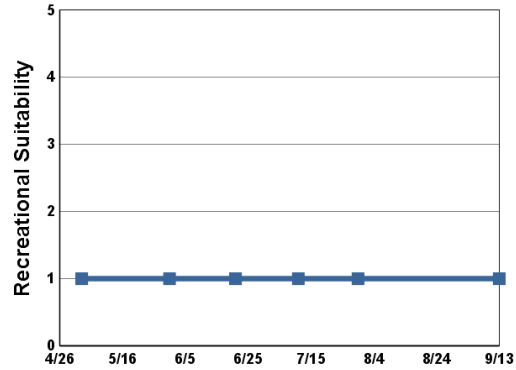


1 = Beautiful
2 = Minor Aesthetic Problem
3 = Swimming Impaired
4 = No Swimming; Boating OK
5 = No Aesthetics Possible

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP		C		C							C	C
CLA		D		C							D	C
Secchi		C		C							C	C
Lake Grade		**C**		**C**							**C**	**C**

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP			C	C				C				
CLA												
Secchi			C	C				C				
Lake Grade												

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP	C		C	C	C	C	C	C	C	C	C	C
CLA								C	B	C	B	
Secchi	C		C	C	C	C	C	C	C	C	C	B
Lake Grade								**C**	**C**	**C**	**C**	

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

Northwood Lake (27–0627) *Bassett Creek Watershed Management Organization*

Volunteer: Robert White

Northwood Lake is a 15-acre lake located within the City of New Hope (Hennepin County). The mean and maximum depths of the lake are 0.8 m (2.5 ft) and 1.5 m (4.9 ft), respectively. The entire surface area is considered littoral zone, which is the 0 — 15 feet depth zone typically dominated by aquatic vegetation. Since the lake is relatively shallow, it does not permanently stratify and maintain a thermocline which is a density gradient caused by changing water temperatures throughout portions of the water column. The lake's 1,341-acre immediate watershed translates to a large watershed-to-lake area ratio of 89:1. The greater the ratio, the greater the potential stress on the lake from surface runoff.

The MPCA listed the lake as impaired with respect to aquatic recreational use (nutrient/eutrophication biological indicators) in 2004.

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

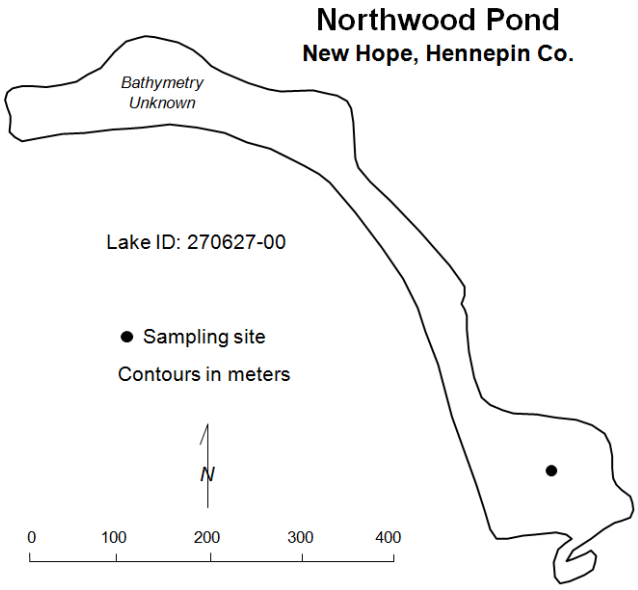
Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	173	96	243	F
CLA (µg/l))	36	6.4	63	C
Secchi (m)	>1.1	>0.9	>1.2	
TKN (mg/l)	1.01	0.64	2.00	
			Lake Grade	

> indicates that the visibility of the Secchi disk was blocked by aquatic vegetation at the depth indicated.

There was an insufficient quantity of valid Secchi transparency measurements to determine a Secchi grade. An invalid measurement occurred if the Secchi disk was either visible on the lake bottom or the disk's visibility was blocked by aquatic vegetation. In both of these situations the water clarity would have been greater than that indicated by the measurement. A lake grade was not given because all three parameter grades are required to issue a lake grade.

During each monitoring visit, 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.

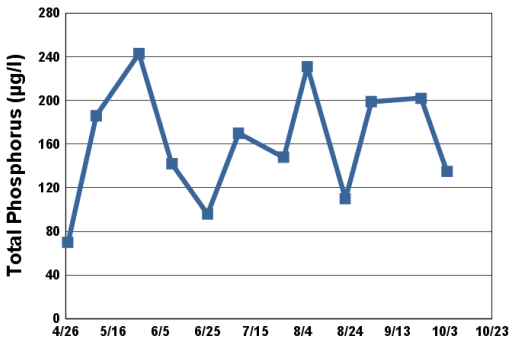
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

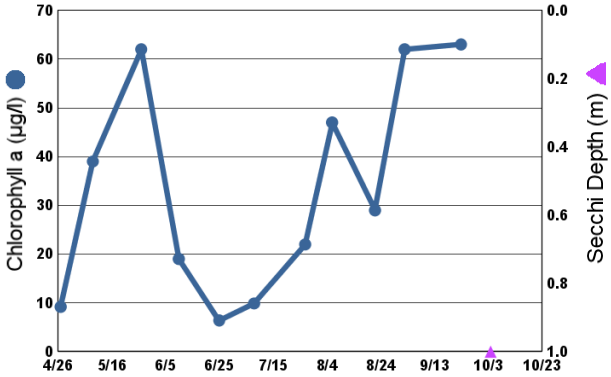


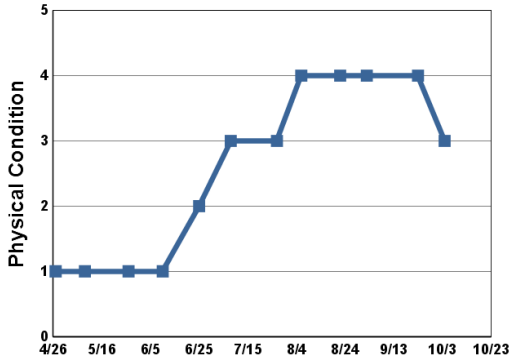
2015 Data

Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
4/27/15	16.2		9.2	70	+ 1.3	1	3
5/9/15	21.2		39.0	186	> 0.9	1	4
5/27/15	22.2		62.0	243	> 1.0	1	4
6/10/15	26.4		19.0	142	> 1.1	1	4
6/25/15	28.2		6.4	96	> 1.1	2	5
7/8/15	25.2		9.9	170	> 1.2	3	4
7/27/15	28.2		22.0	148	> 1.1	3	5
8/6/15	23.4		47.0	231	> 1.1	4	5
8/22/15			29.0	110	> 1.2	4	5
9/2/15	23.2		62.0	199	> 1.0	4	5
9/23/15	21.5		63.0	202	> 0.9	4	4
10/4/15	15.2			135	1.0	3	4

+ indicates that the Secchi disk was visible on the bottom of the lake at the depth indicated.
> indicates that the visibility of the Secchi disk was blocked by aquatic vegetation at the depth indicated.







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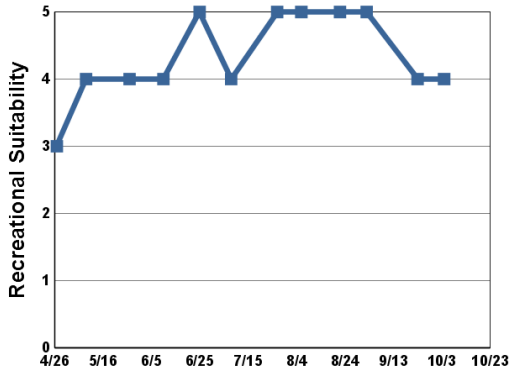

1 = Beautiful
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Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP												
CLA												
Secchi												
Lake Grade												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP									F	F	D	F
CLA									B	C	B	C
Secchi									D	D	D	D
Lake Grade									**D**	**D**	**C**	**D**

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP	D	D	F	F	D	F	D	F	F	F	D	F
CLA	B	B	B	C	C	B	C	C	C	C	A	C
Secchi	D	D	D	D	D	D	D	D	D	D		
Lake Grade	**C**	**C**	**D**	**D**	**D**	**D**	**D**	**D**	**D**	**D**		

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

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

Volunteer: David Parker

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 lake's size and mean depth result in an approximate lake volume of 1,164 ac-ft. Approximately 70 percent of the lake's surface area is considered littoral zone, which is the 0-15 feet depth zone of aquatic plant dominance. The lake's 950-acre immediate watershed translates to a moderate watershed-to-lake area ratio of 10:1. The greater the ratio, the greater the potential stress on the lake from surface runoff.

The MPCA listed the lake as impaired with respect to aquatic consumption (mercury in fish tissue) in 1998 and aquatic life (chloride) in 2014. The MN DNR has designated the lake as being infested with Eurasian water milfoil (*Myriophyllum spicatum*).

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	22	9	35	A
CLA (µg/l))	13	1.0	35	B
Secchi (m)	3.7	1.1	6.5	A
TKN (mg/l)	0.79	0.53	1.10	
			Lake Grade	A

The lake received a lake grade of A this year, 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 35 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 2015. Continued monitoring is suggested to determine potential trends in the lake's water quality.

During each monitoring visit, 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.

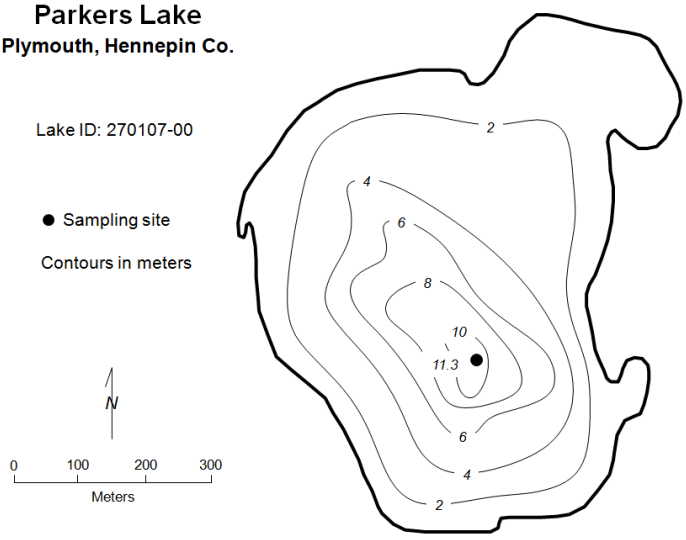
Parkers Lake

Plymouth, Hennepin Co.

Lake ID: 270107-00

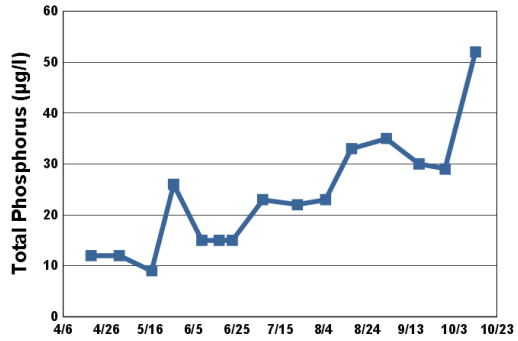
● Sampling site

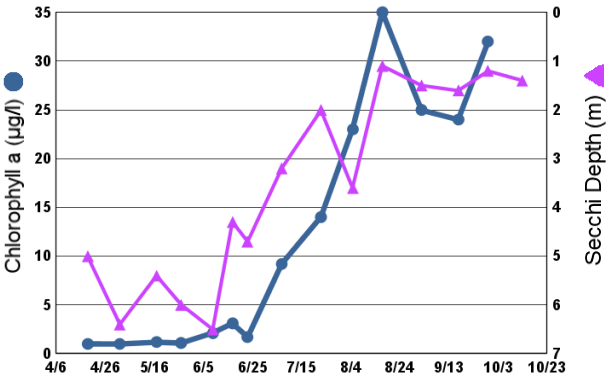
Contours in meters

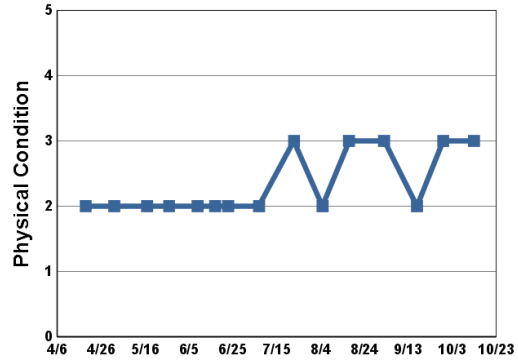


2015 Data

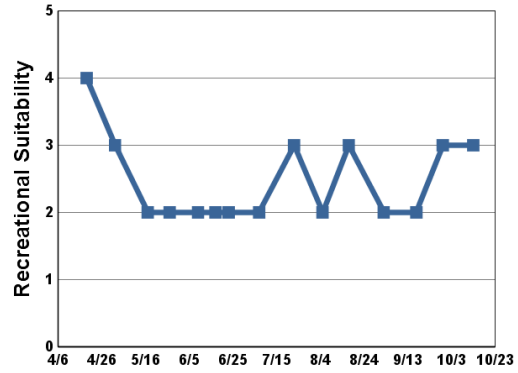
Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
4/19/15	14.3		1.0	12	5.0	2	4
5/2/15	15.6		1.0	12	6.4	2	3
5/17/15	15.0		1.2	9	5.4	2	2
5/27/15	17.9		1.1	26	6.0	2	2
6/9/15	24.4		2.1	15	6.5	2	2
6/17/15			3.1	15	4.3	2	2
6/23/15	24.2		1.7	15	4.7	2	2
7/7/15	23.5		9.2	23	3.2	2	2
7/23/15	26.6		14.0	22	2.0	3	3
8/5/15	26.7		23.0	23	3.6	2	2
8/17/15	25.3		35.0	33	1.1	3	3
9/2/15	23.3		25.0	35	1.5	3	2
9/17/15	21.6		24.0	30	1.6	2	2
9/29/15	19.9		32.0	29	1.2	3	3
10/13/15	14.7			52	1.4	3	3







1 = Crystal Clear
2 = Some Algae Present
3 = Definite Algal Presence
4 = High Algal Color
5 = Severe Algal Bloom



1 = Beautiful
2 = Minor Aesthetic Problem
3 = Swimming Impaired
4 = No Swimming; Boating OK
5 = No Aesthetics Possible

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP	C											
CLA	C										B	
Secchi	C										B	
Lake Grade	**C**											

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP				C				C	A		A	B
CLA				B				B	A		A	B
Secchi				C				C	B		A	B
Lake Grade				**C**				**C**	**A**		**A**	**B**

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP	B	C	C	B	B	C	A		C			A
CLA	A	B	A	A	A	A	A		A			B
Secchi	C	B	A	B	B	B	B		B			A
Lake Grade	**B**	**B**	**B**	**B**	**B**	**B**	**A**		**B**			**A**

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

Sweeney Lake [Site-1, South Site] (27-0035–01) *Bassett Creek Watershed Management Commission*

Volunteer: Shanna Hanson

Sweeney Lake is located in the City of Golden Valley (Hennepin County). The lake has a surface area of 66 acres and mean and maximum depths of 3.6 m (12 ft) and 8.0 m (26 ft), respectively. The lake's surface area and a watershed area of 2,400 acres give a large watershed-to-lake area ratio of 36:1. The greater the ratio, the greater the potential stress on the lake from surface runoff. The Sweeney Lake branch of Bassett Creek flows into the lake on the south end and discharges at the north end over a dam. Sweeny Lake is connected to Twin Lake during periods of high water levels by a channel. The surface elevations of the two lakes are about the same.

The MPCA listed the lake as impaired with respect to aquatic recreational use (nutrient/eutrophication biological indicators) in 2004 and for aquatic life (chloride) in 2014.

The lake has a hypolimnetic aeration system which generally operates year round. The aeration system keeps the lake mixed, so it does not develop a thermocline when the system is operational. A thermocline is a density gradient caused by changing water temperatures throughout the water column. The aeration system was turned off during the monitoring seasons of 2007 and 2008 as part of a total maximum daily load (TMDL) study. The TMDL study was initiated in response to the lake being listed as impaired for aquatic recreational use.

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	37	31	45	C
CLA (µg/l))	23	14	29	C
Secchi (m)	1.2	1.0	1.4	C
TKN (mg/l)	0.86	0.78	1.00	
			Lake Grade	C

The south site received a lake grade of C this year, which is consistent with its historical database. Over the period of the monitoring database, the water quality of the lake seems represented by a lake grade of C. Further monitoring is suggested to continue to build the water quality database for increasing power to detect water quality trends.

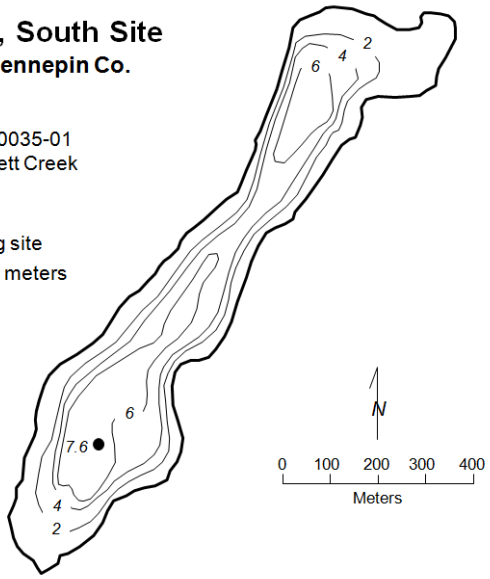
During each monitoring visit, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

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.

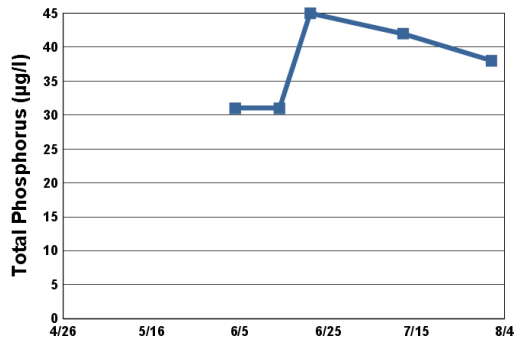
Sweeney Lake, South Site
Golden Valley, Hennepin Co.

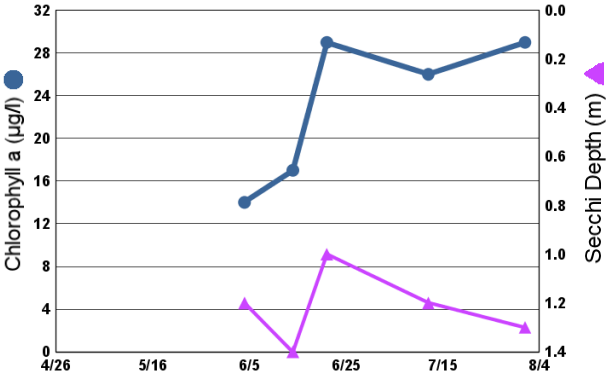
Lake ID: 270035-01
WMO: Bassett Creek

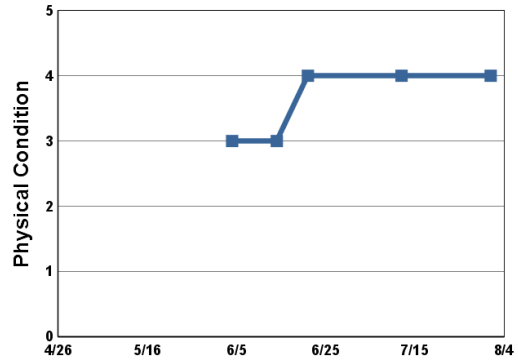


2015 Data

Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
6/4/15	20.6		14.0	31	1.2	3	2
6/14/15	21.8		17.0	31	1.4	3	2
6/21/15	23.3		29.0	45	1.0	4	2
7/12/15	25.5		26.0	42	1.2	4	4
8/1/15	26.0		29.0	38	1.3	4	3







1 = Crystal Clear
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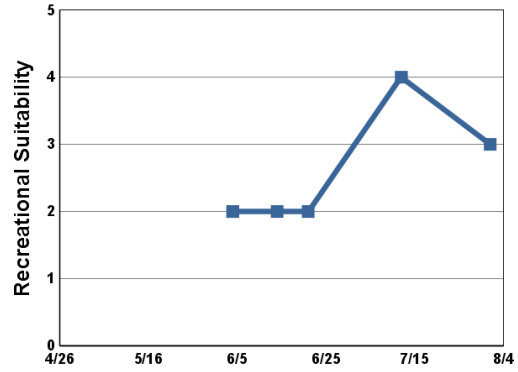
3 = Definite Algal Presence
4 = High Algal Color
5 = Severe Algal Bloom



1 = Beautiful
2 = Minor Aesthetic Problem
3 = Swimming Impaired
4 = No Swimming; Boating OK
5 = No Aesthetics Possible

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP												
CLA												
Secchi												
Lake Grade												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP									C	C	C	C
CLA									C	B	B	B
Secchi									D	C	C	C
Lake Grade									**C**	**C**	**C**	**C**

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP	C	C	D	C	C	C	C	C	C	C	C	C
CLA	B	C	C	B	B	C	B	B	B	B	C	C
Secchi	C	C	D	D	C	C	C	C	D	D	C	C
Lake Grade	**C**	**C**	**D**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

Twin Lake [Golden Valley] (27–0035–02) *Bassett Creek Watershed Management Commission*

Volunteer: Jonathon Burris

Twin Lake is located in the City of Golden Valley (Hennepin County). The surface are of the lake is 19 acres. Approximately 42 percent of the surface is considered littoral zone which is the 0-15 feet depth zone of aquatic plant dominance. The lake has a maximum depth of approximately 17 m (56 ft).

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	7	3	17	A
CLA (µg/l))	2.3	1.1	3.4	A
Secchi (m)	4.4	3.9	5.3	A
TKN (mg/l)	0.61	0.41	0.93	
			Lake Grade	A

The lake received a lake grade of A this year which is consistent with its limited historical water quality database.

There were limited historical data available for this lake according the MPCA's Environmental Data Access System: 3 days in 1977, 1 day in 1996, 2 days in 1997. Continued monitoring is recommended to continue to build the water quality database.

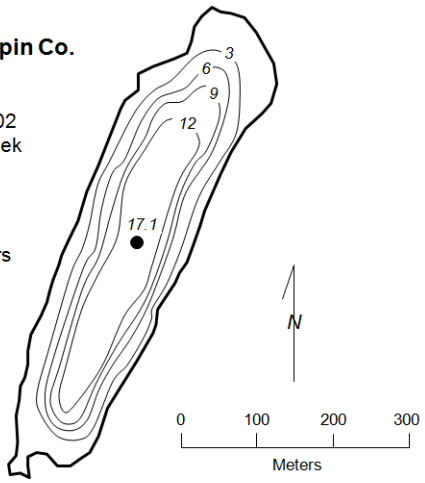
During each monitoring visit, the volunteer's opinions of the lake's physical condition and recreational suitability were ranked on a 1-to-5 scale. These user perception rankings are shown on the following page.

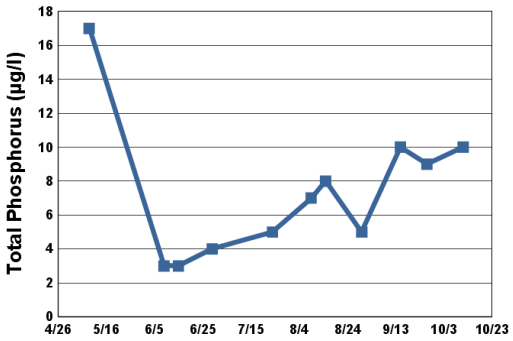
If you notice any errors in the lake's data or physical information, or are aware of any additional or missing information, please contact Brian Johnson of the Metropolitan Council at (651) 602-8743 or brian.johnson@metc.state.mn.us.

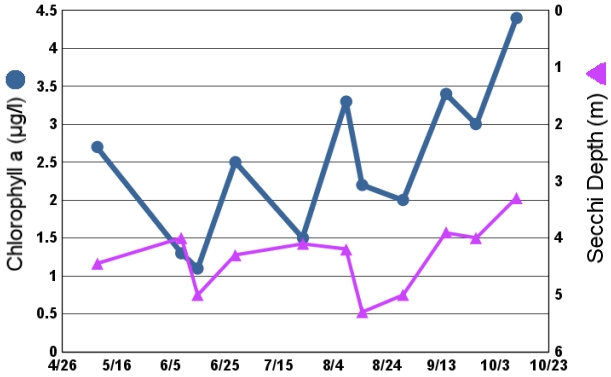
Twin Lake
Golden Valley, Hennepin Co.

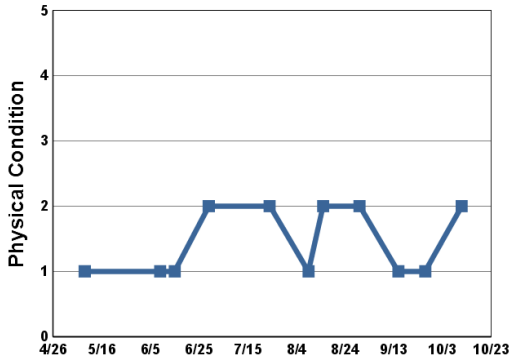
Lake ID: 270035-02
WMO: Bassett Creek

● Sampling site
Contours in meters









1 = Crystal Clear
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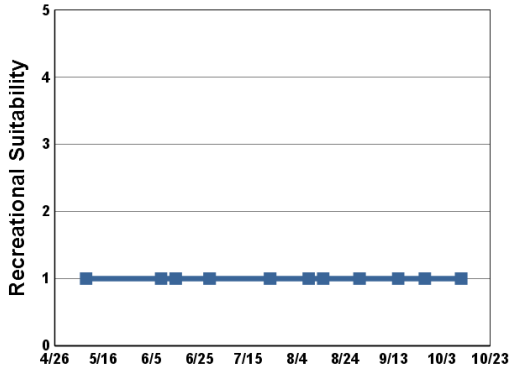
3 = Definite Algal Presence
4 = High Algal Color
5 = Severe Algal Bloom



1 = Beautiful
2 = Minor Aesthetic Problem
3 = Swimming Impaired
4 = No Swimming; Boating OK
5 = No Aesthetics Possible

2015 Data

Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
5/9/15	19.0		2.7	17	4.5	1	1
6/9/15	23.6		1.3	3	4.0	1	1
6/15/15	23.2		1.1	3	5.0	1	1
6/29/15	25.5		2.5	4	4.3	2	1
7/24/15	26.5		1.5	5	4.1	2	1
8/9/15	27.0		3.3	7	4.2	1	1
8/15/15	26.7		2.2	8	5.3	2	1
8/30/15	21.0		2.0	5	5.0	2	1
9/15/15	20.0		3.4	10	3.9	1	1
9/26/15	21.6		3.0	9	4.0	1	1
10/11/15	17.7		4.4	10	3.3	2	1

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP												
CLA												
Secchi												
Lake Grade												

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP												
CLA												
Secchi												
Lake Grade												

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP							A			A	A	A
CLA							A	A		B	A	A
Secchi							A	B		A	A	A
Lake Grade							**A**			**A**	**A**	**A**

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

Westwood Lake (27–0711) *Bassett Creek Watershed Management Organization*

Volunteer: Nancy Ebner

Westwood Lake is located in the city of St. Louis Park (Hennepin County). The lake has a surface are of 41 acres and a maximum depth of 2.0 m (6.6 ft). The entire surface area is considered littoral zone, which is the 0 — 15 feet depth zone typically dominated by aquatic vegetation. Since the lake is relatively shallow, it does not permanently stratify and maintain a thermocline which is a density gradient caused by changing water temperatures throughout portions of the water column.

On each sampling day surface samples were collected for laboratory analysis of total phosphorus (TP), total Kjeldahl nitrogen (TKN), and chlorophyll including chlorophyll-a (CLA). Secchi transparency and surface temperature were measured during each monitoring visit. The resulting data are summarized in tables and figures on the following pages.

2015 summer (May - September) data summary

Parameter	Mean	Minimum	Maximum	Grade
TP (µg/l)	16	11	23	A
CLA (µg/l))	3.9	3.1	6.3	A
Secchi (m)	+1.6	>1.4	>2.0	
TKN (mg/l)	0.96	0.89	1.10	
			Lake Grade	

+ indicates that the Secchi disk was visible on the bottom of the lake at the depth indicated.
> indicates that the visibility of the Secchi disk was blocked by aquatic vegetation at the depth indicated.

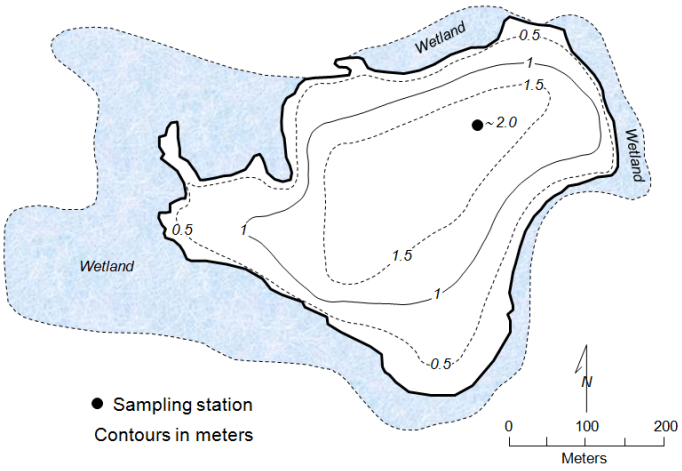
There was an insufficient quantity of valid Secchi transparency measurements to determine a Secchi grade. An invalid measurement occurred if the Secchi disk was either visible on the lake bottom or the disk's visibility was blocked by aquatic vegetation. In both of these situations the water clarity would have been greater than that indicated by the measurement. A lake grade was not given because all three parameter grades are required to issue a lake grade. The relatively low CLA concentrations in combination with the observations of moderate to substantial macrophyte growth, indicate that the primary production of the lake is focused on production of aquatic macrophytes rather than algae.

During each monitoring visit, 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.

Westwood Lake,
St. Louis Park, Hennepin Co.

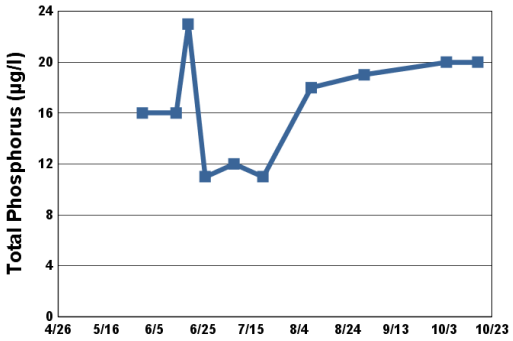
Lake ID: 270711-00

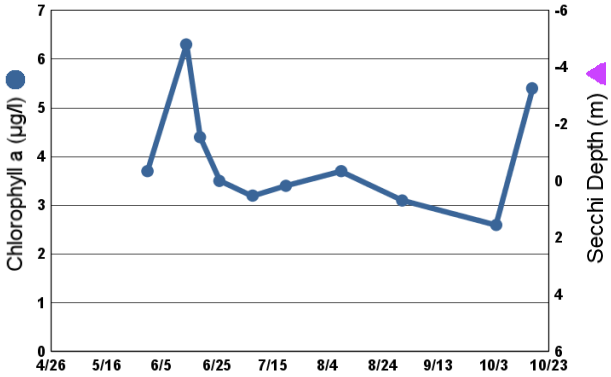


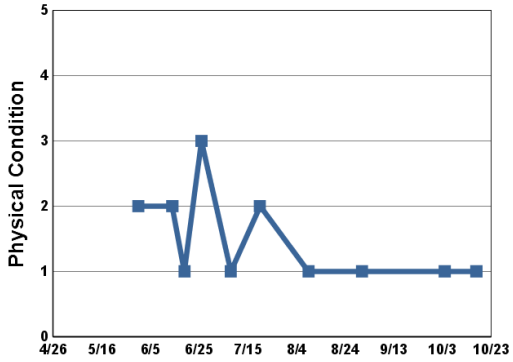
2015 Data

Date	SURF TEMP (°C)	SURF DO (mg/L)	CLA (µg/l)	SURF TP (µg/l)	Secchi (m)	PC	RS
5/31/15	20.3		3.7	16	+ 1.7	2	4
6/14/15	27.5		6.3	16	> 1.4	2	
6/19/15	21.5		4.4	23	> 1.5	1	4
6/26/15	26.7		3.5	11	> 2.0	3	4
7/8/15	24.1		3.2	12	> 1.6	1	4
7/20/15	27.0		3.4	11	> 1.5	2	
8/9/15	27.8		3.7	18	> 1.5	1	4
8/31/15	24.5		3.1	19	> 1.4	1	4
10/4/15	17.3		2.6	20	+ 2.5	1	4
10/17/15	10.5		5.4	20	> 2.5	1	4

+ indicates that the Secchi disk was visible on the bottom of the lake at the depth indicated.
> indicates that the visibility of the Secchi disk was blocked by aquatic vegetation at the depth indicated.







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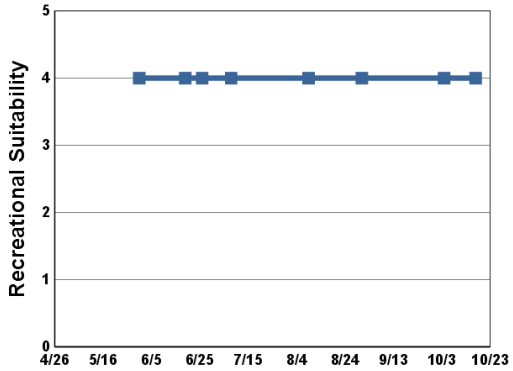

1 = Beautiful
2 = Minor Aesthetic Problem
3 = Swimming Impaired
4 = No Swimming; Boating OK
5 = No Aesthetics Possible

Lake Water Quality Grades Based on Summertime Averages

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TP			F									
CLA			C									
Secchi			D									
Lake Grade			**D**									

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
TP		C							B	B	C	C
CLA		C							B	C	B	A
Secchi		C							C	C	C	C
Lake Grade		**C**							**B**	**C**	**C**	**B**

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
TP	C	D	D	C	B	C	A	C	D	C	B	A
CLA	A	C	B	B	A	B	A	A	A	A	A	A
Secchi	C	C	C	C	D	D	C	D	C			
Lake Grade	**B**	**C**	**C**	**C**	**B**	**C**	**B**	**C**	**C**			

Source: Metropolitan Council, EPA STORET, and/or MPCA EQuIS database(s)

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Appendix A

Lakes Sampled by Metropolitan Council Staff and the CAMP, 1980 - 2015
(Numbers indicate monitoring events per year. A "v" indicates monitoring performed through CAMP.)

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Acorn Lake	82010200		1																											v14		v 6	v 6	v 7					
Alimagnet Lake	19002100		1																v 12	v10	v10	v10	v10	v10	v8	v9	v12	v10	v10	v8	v10	v 12	v 10	v 13	v 12	v 11	v 10	v 12	v 12
Alice Lake	82028700		1																																		v 12	v 14
Anderson Pond	19009400		1																															v 12	v 9	v 3		v 6	
Ann Lake	10001200		1						5				13													13										6			
Ardmore Lake	27015300		1																												v4	v 11	v 14	v 12					
Armstrong Lake	82011602	south basin	1																			v15	v10	v13	v14	v15	v14	v14	v14	v7	v7	v 7	v 14	v 7	v 7	v 7	v 7	v 5	v 8
Assumption Lake	10006300		1																				v1																
Auburn Lake	10004401	west	1				10			17	18				12			13																						
Auburn Lake	10004402	east	1				10																																
Aue Lake	10002800		1																				v1																
Bald Eagle Lake	62000200	site 1	1	4	5		5																					13	13									
Bald Eagle Lake	62000200	site 2	2																									13	13									
Baldwin Lake	2001300		1																																v 2				
Barker Lake	82007600		1																					v5	v5	v7	v7	v7	v7	v7	v7	v 7	v 7				v 12	v 12	
Barnes Lake	10010900		1																				v1																

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Bass Lake	27001500	St. Louis Park	1																							v12			v12	v2									
Bass Lake	27009800	Plymouth	1	4														v16			v15		v15		v13		v9		v15		v14		v 12		v 14				v 12
Bass Lake	82003500	May Township	1																					v14	v5	v7	v7	v7	v7	v7	v7	v 7	v 7			v 7	v 12	v 12	
Bass Lake	82012300	west [Grant Twnshp]	1																											v7	v8	v 7	v 7	v 14	v 14	v 14	v 12	v 12	v 14
Bass Lake	82012400	east [Grant Twnshp]	1																											v7	v7	v 7	v 7	v 14	v 14	v 14	v 12	v 12	v 15
Battle Creek Lake	82009100		1														v14	v13	v11	v13																		9
Bavaria Lake	10001900		1				5			17	18							13		v11	v12	v15	v12	v14	v14	v14	v19	v16	v18	v16	v14	v 14	v 14	v 15	v 15	v 14	v 14	v 13	v 14
Bay Pond	82001100		1																											v14	v14	v 11	v 7	v 7		v 6	v 7	v 6	
Benton Lake	10006900		1																				v13	v14	v14		v15		v14		v13	v 14	v 14	v 14	v 14	v 14	v 13	v 12	v 13
Benz Lake	82012000		1																			v8							v14	v14	v14	v 14	v 14	v 14	v 15	v 14	v 12	v 12	v 15
Berliner Lake	10010300		1																				v1																
Beutel Pond	82039900		1																													v 7	v 5	v 3					
Big Carnelian Lake	82004900		1					5					13					13			13			v14	v7	v14	v14	v14	v14	v7	v7	v 6	v 7	v 7		v 6	v 12	v 12	v 14
Big Comfort Lake	13005300		1																		v3			v14	v14	v14	v14	v14	v13	v14	v14	v 14	v 13	v 14	v 13	v 14	v 22	v 22	v 26
Big Marine Lake	82005204		1	4	5			5					13					13			13			v14	v7	v14	v14	v14	v14	v7	v7	v 7	v 7	4 & v 7	12		v 12	v 12	v 14
Big Marine Lake	82005204		2																															4	11				
Big Woods Lake	10024900		1																																			v 12	v 14
Birch Lake	13004200		1																										v10	v7	v7								

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Birch Lake	62002400		1	2																									v14										
Bluebill Bay Lake	19044900		1																		v8																		
Bone Lake	82005400		1					5					13				v7		v14		v14	v14	v14		v14	v14	v14	v14	v14	13	v10	v 15	v 12	v 11	v 15	v 13	v 25	v 22	v 26
Brand Lake	10011000		1																				v1																
Braunworth Lake	10010700		1																				v1																
Brick Pond	82030800		1																													v 7	v 6	v 7	v 7	v 6	v 6		
Brickyard Clayhole Lake	10022500		1																							v14	v13	v14	v14	v14	v13	v 14	v 15	v 14	v 14	v 14	v 13	v 13	v 13
Bryant Lake	27006700		1	2	5	16		5					13	13	12																					v 2				
Buck Lake	70006500		1																																			v 13	v 13
Burandt Lake	10008400		1																				v7	v13	v9			v18	v22				v 4	v 14	v 14	v 14	v 13	v 12	v 14
Bush Lake	27004700		1					5									13	13					13		13			13		v13	v15	v 13	v 13	v 13	v 12	v 13	v 12	v 12	v 14
Byllesby Lake	19000600	deepest point	1														v14	v14	v13																				
Byllesby Lake	19000600	east end of lake	2																																		12	11	
Byllesby Lake	19000600	center of lake	3																																		12	11	
Calhoun Lake	27003100		1		5			5																															
Campbell Lake	10012700		1																				v2	v14		v10			v14	v14									
Capaul Pond	82036500	east basin	1																													v 7	v 3	v 7					
Capaul Pond	82036500	west basin	2																													v 7	v 1						
Carol Lake	82001700		1																					v5	v5	v7	v7	v7	v7	v7	v7	v 7	v 6			v 5	v 10		

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Carver Lake	82016600		1									20					v15	v15	v16	v9																			
Cates Lake	70001800		1																							v14	v13	v15	v13	v14	v13	v 12	v 13	v 13	v 12	v 9	v 11		
Cedar Island Lake	27011900		1																v13						v13		v11			v9			v 11						
Cedar Lake	27003900	Minneapo-lis	1					5																															
Cedar Lake	70009100	Scott Co.	1	4	5			5						13			14					13			13				13	v14	v14	v 14	v 14	v 14	v 14	v 14	v 12	v 10	v 13
Cedar Lake	70009100	Scott Co.	2																																v 11	v 13	v 10	v 13
Cenaiko Lake	2065400		1																		v12	v11	v13	v11	v13	v12	v12	v14	v14	v14	v12	v 13	v 13	v 13	v 13	v 14			
Centerville Lake	2000600		1	4	5		5																	13	13/ v4	v1	13	13				2						
Charley Lake	62006200		1						5																														
Christmas Lake	27013700		1	4	5				5												13	13	13			13	13						1	4	4	2		
Chub Lake	19002000		1	2													v14	v14	v11														10	10				
Clear Lake	82004500	May Township	1																													v 14	v 14	v 7	v 8	v 7	v 7	v 12	v 14
Clear Lake	82009900	north lobe [Lake Elmo]	1																														v 4						
Clear Lake	82009900	south lobe [Lake Elmo]	2																														v 6						
Clear Lake	82016300	Forest Lake	1	4				5						13			v11	v12	v12	v11	v10	v11	v10	v9	v12	v12	v12	v6		13			3					
Cleary Lake	70002200		1					5																															
Cloverdale Lake	82000900		1																						v10	v10	v11	v13	v12	v11	v10	v 9	v 11	v 10	v 9	v 9	v 8		
Cobblecrest Lake	27005300		1																							v4		v14	v16	v13	v13	v 13	v 10	v 9	v 6	v 4	v 7	v 4	v 7

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Cobblestone Lake	19045600		1																										v14	v14	v12	v 14	v 13	v 14	v 14	v 13	v 12	v 10	v 5
Cody Lake	66006100		1																												v3								
Colby Lake	82009400		1															v13	v14	v13	v13	v12	v12	v9	v10	v10	v10	v10	v6	v7	v7	v 9	v 3	v 9	v 14	v 14	v 13	v 12	v 14
Coon Lake	2004200		1	4				5										13			13												2						
Cornelia Lake	27002800		1																								v7		v11	v14	v14	v 13	v 14				v 5	v 6	v 7
Courthouse Lake	10000500	Chaska	1																	v2	v14	v13	v13	v14	v14	v14	v14	v14	v14	v13	v13	v 14	v 14	v 14	v 14	v 14	v 13	v 13	v 13
Cowley Lake	27016900		1																	v12										v10	v1		v 4	v 6					
Crane Lake	27073400		1														v9																					v 12	
Crooked Lake	2008400		1				5						13				v15	v15	v14	v14	v12	v14	v14																
Crystal Lake	19002700	Burnsville	1	2			5						13					13	13	13	13	13	v12	v10	v14	v15	v15	v15	v16	v14	v14	v 14	v 14	1 & v 14	4 & v 14	4 & v 14	2 & v 13	v 13	v 15
Crystal Lake	27003400	Robbins-dale	1							17	19	19						v15			v11				v8				v7			v 7		v 8				v 5	
Crystal Lake	70006100	Spring Lake	1																		v12		v11																
Cynthia Lake	70005200		1	2																																			
Dan Patch Lake	70001600		1																		v15																		
Dean Lake	70007400		1																							v7	v7	v6	v7	v8	v9	v 10	v 12	v 8	v 3				
Deeg Lake	19011700		1																						v12														
Deep Lake	62001800		1						5																														
Demontreville Lake	82010100		1	4				5							12		v15		14						13			13	v14	v7	v7	v11	v 20	v 12	v 14	v 20	v 14	v 12	v 14	v 14

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Diamond Lake	27012500	Dayton	1	2														v13										13											
Downs Lake	82011000		1																				v14		v9	v9	v6	v7	v9	v7	v5	v 2	v 9	v 1		v 7	v 7	v 6	v 7
Dubay Lake	27012900		1																																	v 14	v 8	v 1	
Duck Lake	27006900		1																																			v 8	v 12
Dutch Lake	27018100		1					5																															
Eagle Lake	10012100	Young America	1	4	5				5											12		v15	v14	v14	v12	v14	v14	13	v14	v14	v13	v 13	v 14	v 14	v 14	v 14	v 13	v 13	v 15
Eagle Lake	27011101	Maple Grove	1	4			5			17	18				11		v15			v14	v14	v14		v6		v4			v6				v 6			11			
Eagle Point Lake	82010900		1			2											v14												v5	v2	v 2	v 2		v 7	v 6	v 7	v 6	v 7
Earley Lake	19003300		1															v10	v11	v9	v10	v10	v9	v8	v6	v10	v9	v6	v7	v9	v12	v 9	v 10	v 11	v 8	v 12	v 13	v 14	v 14
East Boot Lake	82003400		1																					v14	v14	v14	v14	v14	v14	v7	v7	v 7	v 7	v 7	v 7	v 7	v 12	v 12	v 15
East Lake	19034900		1																										v13	v6	v14	v 13		v 14	v 11	v 13	v 11	v 12	v 12
East Twin Lake	2013300		1	2	5		5						13						13			13										3	6					
Echo Lake	82013500		1																											v10	v8	v 4		v 7		v 7	v 7	v 6	v 7
Edina Lake	27002900		1																									v10	v10										
Edith Lake	82000400		1																										v6	v12	v12	v 15	v 17		v 15	v 15	v 16	v 14	v 11
Egg Lake	82014700		1																						v3														
Elmo Lake	82010600		1	4	5	16		5				19			12			v11											v9	v8	v8	v 18	v 9	v 19	v 9	v 9	v 6	v 6	v 6
Fahlstrom Pond	82000500	east basin	1																													v 3	v 8	v 4					
Fahlstrom Pond	82000500	west basin	2																													v 5	v 5	v 5					

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Farquhar Lake	19002300		1	4														v15	v16	v14	v15		v15	v13	v11	v13	v14	v14	v15	v13	v13	v 13	v 14	v 14	v 14	v 14	v 13	v 14	v 14
Fireman's Clay-hole Lake	10022600		1																						v12	v14	v14	v14	v14	v13	v13	v 14	v 14	v 14	v 14	v 14	v 13	v 13	
Fish Lake	19005700	Eagan	1										13																										
Fish Lake	27011800	Maple Grove	1	4	5	16			5					13																									
Fish Lake	70006900	Scott Co.	1	4				5						13					13		v2	v13	v8	v12	v9	v14	v13	v11	v13	v11	v13	v 11	v 12	v 11	v 10	v 14	v 13		
Fish Lake	82006400	Washing-ton Co.	1																					v5	v14	v7	v7	v7	v7	v7	v7	v 7	v 8	v 7	v 7				v 14
Fish Lake	82009300	Woodbury	1																															v 14	v 14	v 14	v 12	v 12	v 14
Fish Lake	82013700	Grant Township	1																							v5	v5	v4							v 13	v 14	v 4		v 15
Forest Lake	82015900	west basin	1					5						13			v7			v12	v14	v15	v14	v14	v14	v14	v14	v14	v14	13	v14	v 14	v 14	v 14	v 13	v 15	v 24	v 26	v 28
Forest Lake	82015900	middle basin	2					5						13			v7			v12						13			13	13			v 11		v 12	v 14	v 24	v 25	v 25
Forest Lake	82015900	east basin	3	4				5						13			v7			v12						13			13	13			v 8	v 8	v 7	v 16	v 20	v 24	v 28
Forest Lake	82015900	east basin	4																																				v 9
Fourth Lake	13002200		1																																		v 10	v 14
French Lake	27012700		1																						v11	v10	v7	v7											
Friedrich's Pond	82010800		1																											v13	v14	v 11	v 1						
Gables Lake	82008200		1																			v8	v5																
Gaystock Lake	10003100		1																				v2	v14	v14				v14	v14									
George Lake	2009100		1	4	5	16		5					13					13				13											v 14						
George Watch Lake	2000500		1																	v14	v12	v11	v11	v6	v7	v8	v9	v10	v12	v7	v8	v 12	v 14	v 14	v 14	v 12	v 8	v 9	v 11

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
German Lake	82005600		1																							v7	v7	v7	v7	v7	v7	v 7	v 7			v 7		v 12	v 14
Gervais Lake	62000700		1						5																														11
Glen Lake	27009300		1																											v13	v7	v 4							
Goetschel Lake	82031300		1																							v11	v9	v4	v15	v9	v5	v 7	v 7	v 7					
Goggins Lake	82007700		1																				v13	v14	v14	v14	v14	v14	v14	v14	v14	v 14	v 14	v 14	v 14	v 14	v 14	v 13	v 12	v 15
Golden Lake	2004500		1	2											12		14			v13	v11	v15	v13	v13	v12	v11	v11	v10	v11	v11	v10	v 9	v 13	v 12					
Goose Lake	10008900	Waconia	1																v9	v7	v15	v15	v14	v11	v14	v14	v14	v14	v14	v14	v13	v 14	v 14	v 14	v 14	v 14	v 13	v 13	v 14
Goose Lake	19036000	Lakeville	1																v13	v13																			
Goose Lake	82005900	New Scandia	1															v15	v15	v13	v13	v15						v7	v7	v7	v7	v 14	v 7	v 7	v 7	v 7	v 12	v 12	v 14
Goose Lake	82011300	north basin [Lake Elmo]	1																													v 7	v 7	v 7		v 7	v 7	v 6	v 7
Goose Lake	82011300	south basin [Lake Elmo]	2																													v 7	v 7	v 7		v 7	v 7	v 6	v 7
Grace Lake	10021800		1																							v11	v14	v14		v14		v 14	v 14	v 14	v 14	v 14	v 14	v 12	v 14
Grass Lake	27068100		1																		v12																		
Haas Lake	70007800		1																																		v 4	v 4	v 5
Hafften Lake	27019900		1																					13	13			13	v15	v13				v 13			v 12	v 8	
Ham Lake	2005300		1					5									v15	v13		v13	v9	v14																	
Harriet Lake	27001600		1					5																															
Hart Lake	2008100		1																									v6	v4	v8									

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Harvey Lake	27067000		1																									v10											
Haughey Lake	27018700		1																							v4													
Hay Lake	82006500		1																			v14	v13	v14	v14	v4	v7	v7	v7	v7	v7	v 14	v 7	v 7	v 7		v 12	v 12	v 14
Hazeltine Lake	10001400		1																				v1	v14	v14				v14	v14			v 14	v 14	v 14	v 14	v 13	v 12	v 14
Heims Lake	13005600		1																														v 10					v 12	v 14
Henry Lake	27017500		1																v10										v11	v11	v6	v 7	v 7	v 5	v 10				
Herber Pond	82001501		1																									v14	v14	v7	v7								
Hidden Lake	27069300		1																																v 9				
Highland Lake	2007900		1																				v13	v11	v13	v12	v12	v14	v14	v14	v12								
Holland Lake	19006500		1				10	16	15			20					13						13											1	4	4	2		
Hornbeam Lake	19004700		1																											v11	v8	v 7	v 5	v 2				v 11	v 14
Horseshoe Lake	19003200	Dakota Co.	1																v11	v10												v 1							
Horseshoe Lake	19005100	Sunfish Lake	1																											v11	v11	v 8	v 14	v 13	v 10	v 11	v 11	v 13	v 12
Horseshoe Lake	82007400	center	1																				v1																
Horseshoe Lake	82007400	west basin	2																														v 8						
Horseshoe Lake	82007400	east basin	3																														v 7	v 7	v 7	v 7	v 7	v 6	v 7
Hydes Lake	10008800		1						5						12		13			12			v11	v4	v9	v14	v15	v14	v14	v14	v13	v 13	v 14	v 14	v 14	v 14	v 13	v 13	v 14
Independence Lake	27017600		1	4	5		5							13			v14	v15																					
Isabelle Lake	19000400		1															v14																					

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Island Lake	2002200	Linwood	1				7																				v12	v14	v14	v14	v13	v 13	v 14	v 14	v 14			
Jackson WMA	82030500		1																															v 14	v 14	v 14	v 13	v 12	v 14
Jane Lake	82010400		1					5		17	18				12			v12						13				v15	v13	v10	v12	v 16	v 11	v 9	v 9	v 5	v 4	v 3	v 14
Jellums Lake	82005202	Site 1	1																					v14	v14	v12	v14	v14	v14	v7	v7	v 7	v 7	v 7	v 7				v 14
Jellums Lake	82005202	Site 2	2																							v11	v11												
Johanna Lake	62007800		1		5				5				13																										
Jonathan Lake	10021700		1																							v13				v14		v 14	v 14	v 14	v 14	v 14	v 13	v 12	v 14
Josephine Lake	62005700		1						5				13																										
Jubert Lake	27016500		1																					v11															v 5
July Lake	82031800		1																											v7	v7	v 7	v 5		v 14	v 14	v 13	v 12	v 15
Karth Lake	62007200		1																												v11	v 13	v 14	v 14	v 13	v 14	v 13	v 14	v 13
Keller Lake	19002500	Burnsville	1																	13	13	v13	v15	v14	v12	v13	v15	v15	v14	\14	v12	v 8	v 12	v 14	v 13	v 14	v 13	v 14	v 12
Keller Lake	62001000	Maple-wood	1						5																														
Kingsley Lake	19003000		1														5		v11	v10	v9			v14	v14	v15	v14	v15	v16	v14	v14	v 13	v 14	v 14	v 12	v 13	v 11	v 12	v 13
Kismet Lake	82033400		1																			v14	v13	v14	v14	v14	v14	v14	v13	v14	v14	v 14	v 14	v 14	v 14	v 14	v 12	v 12	v 15
Klawitter Pond	82036800		1																							v13	v13	v14	v13	v12	v12	v 13	v 14	v 11	v 12	v 13	v 11	v 10	v 12
Kohlman Lake	62000600		1						5																														
Kramer Pond	82011700		1																													v 7	v 7	v 7		v 7	v 7	v 6	
La Lake	82009700		1															v13	v11	v13	v11	v10	v10	v8	v6	v5	v6	v3	v13	v12	v14	v 11	v 12	v 10	v 10	v 11	v 10	v 9	v 11

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Lac Lavon Lake	19044600		1																		v11	v10	v10	v9	v2	v7	v12	v12	v12	v12	v13	v 12	v 14	v 13	v 13	v 14	v 13	v 13	v 12
Laddie Lake	2007200		1	4													v13	v14	v12					v13	v13	v14	v10												
Lake Forest	82018700		1																													v 12	v 11						
Lake of the Isles	27004000		1					5																															
Lake Minnetonka	27013302	lower	1	4	5																																		
Lake Minnetonka	27013305	upper	1	2	5																																		
Langdon Lake	27018200		1					5																															
Langton Lake	62004900	north site	1																										v14	v7	v13	v 13	v 13	v 13	v 13	v 12	v 10		v 12
Langton Lake	62004900	south site	2																										v14	v13	v13	v 13							
Langton Lake	62020400	north basin	1																										v14										
Laura Lake	27012300		1																																	v 12	v 3	v 3
Lee Lake	19002900		1															v14	v15	v14	v13			v12	v13	v11	v9	v15	v9	v14	v14	v 13	v 14	v 14	v 12	v 13	v 11	v 12	v 13
Legion Pond	82046200		1																										v14	v10		v 7	v 2						
Lemay Lake	19008200		1																												v11	v 11	v 9	v 11	v 10	v 5	v 7	v 3	v 1
Lendt Lake	13010300		1																																		v 12	v 14
LeVander Pond	19008800		1																															v 11	v 9	v 3		v 6	
Libbs Lake	27008500		1																								v10												
Lily Lake	82002300		1																v15	v14	v14	v15	v13	v14	v14	v14	v7	v7	v7	v7	v7	v 14	v 12	v 9		v 11	v 12	v 14	v 12
Linwood Lake	2002600		1	4	5		7						13				13				13											v 13							

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Lippert Lake	10010400		1																				v1																
Little Carnelian Lake	82001400		1																					v14	v7	v14	v14	v14	v14	v7	v7	v 7	v 7	v 7		v 1	v 12	v 12	v 14
Little Comfort Lake	13005400		1																											v14	v13	v 12	v 12	v 12	v 13	v 11	v 19	v 17	v 19
Little Johanna Lake	62005800		1																						v12	v16	v15	v8	v6	v3		v 14	v 13	v 12	v 10	v 14	v 11		v 12
Little Long Lake	27017901		1	4				5						13								13			13		13			v11	v2		v 13	v 14		10			
Lochness Lake	2058500		1																												v12	v 11	v 13	v 10	v 7	v 11	v 9	v 10	v 11
Lone Lake	27009400		1																														v 15	v 13	v 11				
Long Lake	10001600	Carver Co.	1																				v2		v13		v5												
Long Lake	19002200	Apple Valley	1																		v16					v11	v13	v12	v15	v14	v13	v 14	v 13	v 14	v 14	v 13	v 11	v 14	v 14
Long Lake	27016000	Orono	1				5																																
Long Lake	62006700	north site [New Brighton]	1						5																														
Long Lake	62006700	south site [New Brighton]	1						5																														
Long Lake	82002100	north basin [Stillwater]	1																v14	v7		v14	v13	v14	v14	v14	v14	v14	v14	v14	v14	v 14	v 14	v 14	v 14	v 14	v 13	v 12	v 14
Long Lake	82002100	middle basin [Stillwater]	2																														v 4	v 4	v 4	v 4	v 4	v 4	
Long Lake	82002100	south basin [Stillwater]	3																														v 4	v 4	v 4	v 4	v 4	v 4	
Long Lake	82003000	May Township	1														v14	v14	v14	v13	v14		v14	v14	v14	v14	v14	v7	v7	v7	v7	v 7	v 7	v 7	v 7		v 12	v 12	v 14
Long Lake	82006800	Scandia	1																					v5	v14	v7	v7	v7	v7	v7	v7	v 8	v 6	v 7	v 7				v 15
Long Lake	82011800	Pine Springs	1														v14										13	v15	v14	v14	v14	v 14	v 14		v 21	v 14	v 13	v 14	v 14

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Long Lake	82013000	Mahtomedi	1																								v11	v9	v12	v10	v10	v 10	v 10	v 9	v 9	v 8	v 10	v 10	v 8
Loon Lake	82001502		1								2	18												v14	v14	v7	v7	v7	v7	v7	v7	v 14	v 7	v 12	v 1	v 5			
Lost Lake	27010300		1														v13																				v 3	v 4	v 5
Lost Lake	82013401	north basin	1																											v13	v13	v 11							
Lotus Lake	10000600		1						5					13									13	13			v5	v10	v8	v11	v9	v 11	v 10	v 11	v 8	v 2			v 3
Louise Lake	82002500		1																					v5	v5	v7	v7	v7	v7	v7	v7	v 14	v 7	v 7	v 7				
Lucy Lake	10000700		1						5																								v 13	v 12	v 13	v 12	v 10	v 10	v 13
Lynch Lake	82004200	north	1																												v7	v 14	v 13	v 14	v 14	v 14	v 13	v 12	v 15
Lynch Lake	82004200	south	2																															v 14	v 14	v 14	v 12	v 12	v 15
MacDonald Lake	82006200		1																								v14	v14	v7	v7								
Magda Lake	27006500		1																				v14	v13			v11			v12			v 9			v 13			v 12
Maple Marsh Lake	82003800		1																					v5	v5	v7	v7	v7	v7	v7	v7								
Marcott (Rosen-berg) Lake	19004100		1																v15	v13	v10	v10	v12	v10	v6	v5										v 7	v 7		
Marcott (Ohmans) Lake	19004200	east basin	1																																		v 7	v 7		
Marcott (Ohmans) Lake	19004200	west basin	2																																		v 6	v 7		
Marcott Lake	19026300		1																v15																					
Maria Lake	10005800		1																				v2	v14	v14				v13							5			
Marion Lake	19002601		1	2	5		5						13					v15					v15	v14	v13	v14	v14	v15	v16	v15	v14	v 13	v 14	v 14	v 13	v 14	v 14	v 13	v 14
Markgraf Lake	82008900		1															v15	v11	v12	v10	v15	v10	v10	v9	v13	v14	v14	v14	v15	v14	v 14	v 13	v 14	v 13	v 11	v 13	v 12	v 14

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Markley Lake	70002100		1																		v11	v13	v12	v14	v13	v9	v6	v4		v10	v7									
Marsh Lake	10005400		1																				v1																
Marshan Lake	2000700		1																	v10	v13	v10	v9	v8	v7														
Martin Lake	2003400		1				7															13										v 13							
Masterman Lake	82012600		1																											v14	v14	v 14	v 14	v 14	v 14	v 14	v 12	v 12	v 15
Mays Lake	82003300		1																													v 14	v 14	v 7	v 8	v 7	v 7	v 12	v 14
McCarrons Lake	62005400		1					12	20	17	18	19	13	13	12		14	13	16	13			18	13	13	13		13	13										
McDonald Lake	82001000		1																				v11		v14	v9	v12	v12	v14	v10	v9	v 15	v 7		v 8	v 7	v 7	v 6	v 7
McDonough Lake	19007600		1						5														13																
McKnight Lake	10021600		1																											v14		v 14	v 14	v 14	v 14	v 13	v 13	v 12	v 14
McKusick Lake	82002000		1															v14	v14	v14	v14	v14	v13	v14	v14	v14	v14	v14	v14	v14	v14	v 15	v 14	v 14	v 14	v 14	v 12	v 12	v 14
McMahon Lake	70005000		1	2				5											13			13			13				13	v14	v10	v 11	v 10	v 11	v 9	v 9	v 10	v 10	v 12
Meadow Lake	27005700		1																	v12			v12			v9			v10			v 14			v 13			v 11	
Medicine Lake	27010400	main lake	2		5		10							13	12																				v 10	v 12	v 9	v 7	v 6
Medicine Lake	27010400	southwest bay	1	4			9																											v 13	v 15	v 14	v 14	v 14	v 15
Medina Lake	27014600		1																																	v 7			
Mergens Pond	82048200		1																					v10			v3	v2	v6			v 6	v 1					
Meuwissen Lake	10007000		1																				v1									v 11							
Miller Lake	10002900		1																	v6	v13		v12	v14	v13	v13	v14	v14	v14	v12	v13	v 14	v 14	v 13	v 14	v 14	v 11	v 9	v 14

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Minnetoga Lake	27008800		1																												v14	v 12		v 14	v 13	v 13	v 9	v 11	v 12
Minnewashta Lake	10000900	main lake	1					5						13			13				13	13	13			13	13													
Minnewashta Lake	10000900	south bay	2																															v 13	v 11	v 12	v 10	v 8	v 4
Mitchell Lake	27007000		1																13				13	13			13	v14	v14	v14	v13	v 13	v 14	v 13	v 13	v 11	v 12	v 13	v 14
Moody Lake	13002300		1																										v14	v14	v14			v 12	v 10	v 10	v 22	v 26	v 26
Mooney Lake	27013400		1														v14	v10																					
Moore Lake	2007502		1																				v14																
Mud Lake	82002602		1																					v5	v5	v7	v7	v7	v7	v7	v7			v 14	v 7				
Myers Lake	10006800		1																				v1																
Nokomis Lake	27001900		1	4				5																															
Normandale Lake	27104500		1																											v5	v3		v 11	v 13	v 9	v 14			
North Twin Lake	82001800		1																					v5	v5	v7	v7	v7	v7	v7	v7	v 7	v 7	v 7		v 7	v 12		
Northwood Lake	27062700		1																					v12	v10	v13	v12	v12	v10	v10	v10	v 9	v 11	v 11	v 12	v 11	v 11	v 12	v 12
Oak Lake	10009300	site 1	1																				v2		v14	v13	v12	v14	v14	v14		v 15							
Oak Lake	10009300	site 2	2																											v10									
Oak Lake	10009300	site 3	3																											v10									
O'Connor Lake	82000200		1																										v8	v15	v12	v 15	v 10	v 9	v 7	v 6	v 6	v 6	v 6
O'dowd Lake	70009500		1					5										13			13			13		13			13	v12	v13	v 14	v 14	v 14	v 14	v 14	v 13	v 14	v 13
Olson Lake	82010300		1												12		v15		14					13			13	v14	v7	v7	v11	v 19	v 13	v 12	v 18	v 13	v 11	v 11	v 12

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Oneka Lake	82014000		1																				v13	v11	v11	v9	v6	v5						v 13	v 10	v 10		v 4	v 4
Orchard Lake	19003100		1	4	5		5						13				13					13	v15	v13	v13		v14	v14	v14	v14	v14	v 12	v 14	v 13	v 13	v 13	v 13	v 12	v 12
Otter Lake	2000300		1	2			5																																
Owasso Lake	62005600		1	4			5																																
Ox Yoke Lake	27017800		1																													v 1						
Pamela Lake	27067500		1																										v10									
Parkers Lake	27010700		1	4										13					13				13	v12		v14	v15	v15	v15	v14	v14	v 13	v 14	v 13		v 10			v 16
Parley Lake	10004200		1					5		17	18				12					12			13		13		13			13								
Pat Lake	82012500		1																											v7	v7	v 8	v 7	v 14	v 14	v 14	v 12	v 12	v 15
Patterson Lake	10008600		1																				v2																
Peltier Lake	2000400		1				5										v14	v16	v15	v14	v14	v13	v13	v14	v13	v17	v15	v15	v16	v17	v16								
Penn Lake	27000400		1																														v 14	v 14	v 12	v 14	v 13	v 13	v 11
Pepin Lake	40002800		1																												v13								
Peter Lake	27014702	north bay	1																														v 13	v 6	v 2				
Phalen Lake	62001300		1	4	5				5																														
Pickerel Lake	2013000	Anoka Co.	1	2															13																6	7				
Pickerel Lake	19007900	Dakota Co.	1																																				v 7
Pierson Lake	10005300		1	2	5		5						13						13						13	13	13			13									
Pike Lake	27011102	Maple Grove	1																	v14	v15	v13		v13							v4		v 8		v 10				

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Pike Lake	62006900	Ramsey Co.	1																				v14	v10	v14	v14	v14	v15	v15	v11	v14	v 13							
Pike Lake	70007600	site 1 [Scott Co.]	1																		v9		v10	v9	v9	v11	v15	v15	v13										
Pike Lake	70007600	site 2 [Scott Co.]	2																							v11													
Pine Tree Lake	82012200		1						5								v14	v14	v16	v14	v15	v15	v13	v14	v9	v12	v7	v8	v12	v10	v9	v 7	v 12	v 8	v 12	v 12	v 11	v 10	v 12
Plaisted Lake	82014800		1																													v 7	v 8	v 14	v 14	v 14	v 13	v 12	v 15
Pleasant Lake	62004600	North Oaks	1						5																														
Pleasant Lake	70009800	New Prague	1														13																	5					
Pomerleau Lake	27010000		1																	v9			v10		v6		v3										v 12	
Powers Lake	82009200		1															v12	v13	v13	v12	v9	v10	v8	v5	v7	v14	v14	v14	v14	v14	v 14	v 14	v 14	v 14	v 14	v 13	v 12	v 14
Priebe Lake	62003600		1																													v 13	v 10	v 9	v 7	v 8			
Prior Lake - Lower	70002600	Site 1	1					5						13						13	v15	v14	v13	v9	v14	v16	v13	v12	v12	v12	v12	v 12	v 14	v 14	v 12	v 14	v 6		
Prior Lake - Lower	70002600	Site 2	2																			v14	v13	v9	v14	v15										v 5	v 9	v 13
Prior Lake - Upper	70007200	Site 1	1	4	5			5						13						13	v15	v14	v13	v9	v14	v12	v13	v10	v9	v9	v5	v 11	v 14	v 14	v 13	v 11	v 9		
Prior Lake - Upper	70007200	Site 2	2																							v12												
Raven Lake	19036900		1																v13	v6	v8																	
Rebecca Lake	19000300		1																																			v 12
Rebecca Lake	27019200		1				10	12	12																													
Red Rock Lake	27007600		1																				12	13			13	13		13					v 2			v 12	v 12
Regional Park Lake	82008700		1																			v12	v14	v12	v13	v14	v15	v15	v14	v7	v7	v 7	v 7	v 7	v 7	v 7	v 7	v 7	v 6	v 7

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Reitz Lake	10005200		1						5						12		13						v15	v13	v7	v13	v14	v14	15	v14	v14	v 11	v 11	v 12	v 11	v 14	v 12	v 12	v 13
Reshanau Lake	2000900		1	2																			v7	v1	v6					v13	v9	v 7	v 9	v 11	v 10	v 10	v 7	v 2	
Rest Area Pond	82051400		1																											v13	v10	v 13	v 12	v 10	v 9	v 14	v 12	v 14	v 14
Rice Lake	10007800	Carver Co.	1	2																			v1																7
Rice Lake	27011600	Maple Grove	1																												v10	v 10	v 12	v 14	v 12				
Riley Lake	10000200		1	2	5	16			5	17	18			13	12		13				13			13		13	v14	v15	v14	v10	v15	v 12	v 14	v 13	4 & v 11	4 & v 14	2 & v 11	v 11	v 14
Rogers Lake	19008000		1																												v12	v 9	v 11	v 11	v 9	v 11	v 9	v 9	v 11
Rose Lake	27009200	Minneton-ka	1																											v14	v13	v 13							
Rose Lake	82011200	north basin [Lake Elmo]	1																													v 7	v 7	v 7					
Rose Lake	82011200	south ba-sin [Lake Elmo]	2																													v 7	v 7	v 7					
Rutz Lake	10008000		1																				v1	v14	v14	v14				v14	v7	v 5	v 8	v 5	v 7				
Ryan Lake	27005800		1																	v14		v5		v9		v4	v6					v 13		v 10		v 4			
Sanborn Lake	40002700		1																												v2								
Sand Lake	82006700		1														v7	v14	v14	v13						v14	v7	v7	v7	v7	v7	v 14	v 7	v 7	v 7		v 12	v 12	v 14
Sarah Lake	27019100		1	4			5																																
Scheuble Lake	10008500		1																				v1																
Schmidt Lake	27010200		1																v14			v12		v12	v9			v14	v9		v9				v 9				
School Lake	13005700		1																										v14	v7	v7		v 6						

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Schroeder Pond	82030100		1																									v14	v14	v7	v7								
Schultz Lake	19007500		1					5	5														13																
Schutz Lake	10001800		1					5																v6	v10	v6	v8	v9	v11										
Scout Lake	19019800		1																												v14	v 14	v 14	v 14	v 14	v 14	v 14	v 14	v 14
Sea Lake	82005300		1																													v 12	v 7						
Seidl Lake	19009500		1																v15	v14	v14	v15	v16	v14	v14	v15	v8	v14	v14	v14	v8	v 4	v 2	v 12	v 9	v 3		v 6	
Shady Oak Lake	27008902	middle bay	1																														v 12	v 11					
Shavers Lake	27008600	east basin	1																										v14	v13									
Shavers Lake	27008600	west basin	2																											v6									
Shields Lake	82016200		1														v6	v14	v14	v13	v13	v14	v14	v14	v14	v14	v14	v14	v14	v14	v7				v 7	v 12	v 12	v 14
Silver Lake	62000100	North St. Paul	1																											v12								
Silver Lake	82001600	Washing-ton Co.	1																					v14	v5	v7	v7	v7	v7	v7	v7	v 7	v 7	v 7					
Simley Lake	19003700		1																v10	v16	v14	v15	v16	v14	v12	v14									v 7	v 7		
Smetana Lake	27007300		1																																		v 10		
Snail Lake	62007300		1	4					5																														
South Oak Lake	27066100		1																							v12	v15			v9	v8	v 5	v 7	v 13	v 14	v 12	v 10	v 13	v 10
South Rice Lake	27064500		1																					v9	v14	v15	v14	v14	v15	v14	v12	v 6							
South School Section Lake	82015100		1																v14	v7		v14							v14	v14	v14	v 14	v 14	v 14	v 14	v 14	v 13	v 12	v 15
South Twin Lake	82001900		1																					v5	v5	v7	v7	v7	v7	v7	v7	v 7	v 7	v 7	v 7				

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Spring Lake	2007100	Anoka Co.	1																						v11														
Spring Lake	70005400	Prior Lake	1	4	5	16		5						13						13	v12			v6	v11	v13	v14	v14	v13	v9	v8	v 5	v 10	v 15	v 8	v 8	v 10		
Square Lake	82004600		1	4	5	16	6	7	7				13				v11	v14	v14	v13	v14	19	v14	v14	v15	v14	v14	v14	v14	v14	v14	v 7	v 7	v 14	v 14	v 14	v 12	v 12	v 12
St. Croix Lake	82000100	site 1, Bayport Pool	1																											v2				v 12	v 11	v 3			
St. Croix Lake	82000100	site 1N, Bayport Pool	1N																																	v 11	v 12	v 8	v 5
St. Croix Lake	82000100	site 2, Bayport Pool	2																										v10	v10	v9	v 9		v 12	v 11	v 12	v 13	v 9	v 6
St. Croix Lake	82000100	site 3, Troy Beach Pool	3																										v11	v9	v9	v 10		v 12	v 15	v 16	v 13	v 12	v 4
St. Croix Lake	82000100	site 4, Troy Beach Pool	4																															v 6	v 6	v 6	v 7	v 4	v 5
St. Croix Lake	82000100	site 5, Troy Beach Pool	5																										v8	v10	v7	v 8		v 15	v 10	v 6	v 6	v 4	v 5
St. Croix Lake	82000100	site 6, Black Bass Pool	6																										v11	v10	v10	v 9		v 16	v 16	v 16	v 17	v 15	v 16
St. Croix Lake	82000100	site 7, Kinnickinnic Pool	7																										v8	v8	v10	v 5		v 13	v 6	v 12	v 11	v 7	v 11
St. Joe Lake	10001100		1																								v17	v8	v9	v9	v 9	v 5	v 7	v 9	v 7	v 3	v 7	v 8
Staples Lake	82002800		1																					v14	v5	v7	v7	v7	v7	v7	v7	v 7	v 7			v 12	v 12	v 14
Staring Lake	27007800		1	4					5										13				13		13			13		13								
Stieger Lake	10004500		1					12					13						13																				
Success Lake	27063400		1																	v10							v11			v11		v 10			v 14			v 12	
Sucker Lake	62002800		1						5																														

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Sullivan Lake	2008000		1														v14	v14	v15		v15	v14	v13	v11	v11	v12	v12												
Sunfish Lake	19005000	Sunfish Lake	1																										v13	v13	v 13	v 14	1 & v 15	4 & v 14	4 & v 13	2 & v 13	v 13	v 14
Sunfish Lake	82010700	Lake Elmo	1																					v10					v13	v11		v 7			v 7	v 7	v 7	v 6	v 7
Sunnybrook Lake	82013300		1																				v14		v13	v10	v12	v10	v16	v14	v14	v 14	v 14	v 13	v 14	v 14		v 6	v 7
Sunset Lake	82015300		1					5									v14	v14	v12	v13	v16	v12	v10	v13	v13	v18	v20	v15	v17	v12	v10	v 9	v 7	v 8	v 10	v 8	v 7	v 8	v 8
Sunset Pond	19045100		1															v14	v14	v14	v12	v10		v13	v11	v10	v12	v11		v14	v14	v 14	v 14	v 14	v 14	v 14	v 12	v 13	v 14
Susan Lake	10001300		1																											v7	v11	v 12	v 13	v 14	v 13	v 14	v 13	v 13	v 3
Swan Lake	10008200		1																				v1																
Swede Lake	10009500		1	2																13					13	v14	v16	v13	v14	v14	v13	v 14	v 14	v 14	v 14	v 14	v 13	v 14	v 12
Sweeney Lake	27003501	south basin	1																					v11	v9	v14	v13	v14	v11	v10	v15	v 12	v 13	v 14	v 12	v 9	v 9	v 14	v 5
Sweeney Lake	27003501	north basin	2																					v11	v9									v 10	v 9				
Sylvan Lake	27017100	Hennepin Co.	1																													v 10				v 14	v 13	v 10	
Sylvan Lake	82008000	Washing-ton Co.	1														v7			v14		v15	v14	v14	v14	v14	v14	v14	v14		v11	v 9	v 9	v 9	v 11	v 12	v 23	v 20	v 24
Tamarack Lake	10001000		1																						v10	v11	v12	v11	v11	v13	v14	v 11	v 13						
Tanners Lake	82011500		1	2								20					v14	v13	v12	v14																			
Terrapin Lake	82003100		1																									v7	v7	v7	v7	v 7	v 7	v 7	v 8	v 7	v 7	v 12	v 14
Third Lake	13002400		1																																			v 12	v 14
Thole Lake	70012001		1					5										13			13			13		13			13	v14			2	7	9				v 13

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Thomas Lake	19006700		1	2																																			
Tiger Lake	10010800		1																				v1																
Turtle Lake	62006100	Ramsey Co.	1	4	5		5																																
Turtle Lake	82003600	Washing-ton Co.	1																					v5	v5	v7	v7	v7	v7	v7	v7	v 7	v 7	v 7		v 7	v 12	v 12	
Twin Lake	19002800	Burnsville	1																				v6		v13	v11	v6	v2	v11	v8	v8	v 14	v 14	v 13	v 14	v 13	v 13	v 14	v 14
Twin Lake	27003502	Golden Valley	1																															v 9	v 9		v 8	v 8	v 11
Twin Lake	27004201	upper [Br. Center]	1												12		v14			11		v15		v11		v13		v14		v13		v 12		v 12				v 11	
Twin Lake	27004202	middle [Crystal]	1						5						12					13	v11		v13	13			v13		v8			v 13		v 13				v 3	
Twin Lake	27004203	lower [Robbins-dale]	1												12		v14			13		v5		13			v13		v8					v 9				v 5	
Twin Lake	27065600	St. Louis Park	1																							v12	v14	v14	v11	v14	v10	v 10	v 11	v 13	v 11	v 14	v 13	v 13	v 6
Twin Lake	82004800	south [May Twnshp]	1																		v13	v13										v 14	v 7	v 7	v 7	v 6	v 12	v 12	v 14
Vadnais Lake	62003801		1						5																														
Valentine Lake	62007100		1																						v14	v13	v12	v12	v9	v10	v12	v 13						
Valley Lake	19034800		1																v15	v14	v11		v8	v14	v14	v14	v14	v14	v13	v14	v14	v 13	v 14	v 14	v 12	v 13	v 11	v 12	v 12
Virginia Lake	10001500		1																					v11	v12	v14	v12	v15	v13									
Wabasso Lake	62008200		1	4	5		5						12																										
Waconia Lake	10005900		1	4	5				5					13				v16	v13	v15	v17	v15	v14	v14	v14	v15	v14	12	v14	v14	v13	v 13	v 14	v 14	v 14	v 14	v 13	v 12	v 14
Wasserman Lake	10004800		1				5			17	18							13			13	13	13			13	13			13									

Lake	DNR ID	Location	Site	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Weaver Lake	27011700		1				5			17	18																												
Weber Lake	82011900		1																											v12		v 7	v 7	v 7					
West Boot Lake	82004400		1																					v14	v14	v14	v14	v14	v14	v7	v7	v 7	v 7	v 7		v 7	v 12	v 13	v 14
West Lakeland Basin	100	south basin	2																													v 3							
West Lakeland Basin	82048800	north basin	1																					v2								v 7	v 7	v 7					
Westwood Lake	27071100		1														v13							v15	v14	v10	v9	v7	v7	v8	v8	v 7	v 7	v 10	v 9	v 6	v 13	v 11	v 10
Whaletail Lake	27018400	north basin	1																									13	13				3						
Whaletail Lake	27018400	south basin	2	4				5														13			13			13	13				3						
White Bear Lake	82016700		1	4	5			5																															
White Rock Lake	82007200		1																											v11	v14	v 13	v 15	v 14	v 15	v 14	v 13	v 13	v 14
Wilmes Lake	82009000		1															v14	v15	v14	v15	v15	v14	v13	v13	v10	v12	v12	v10	v12	v11	v 11	v 11	v 11	v 11	v 13	v 13	v 12	v 15
Windsor Lake	27008200		1																									v12	v14									
Wing Lake	27009100		1																											v14	v14	v 12	v 9	v 14	v 11	v 9	v 9	v 11	v 12
Winkler Lake	10006600		1																					v8	v6	v6		v13		v14		v13	v 13		v 13	v 13			
Wolsfeld Lake	27015700		1	4																																			
Wood Lake	19002400		1																	v10	v14	v15	v15	v14	v13	v14	v14	v14	v14	v13	v13	v 12	v 9	v 13	v 12	v 13	v 12	v 10	v 6
Woodpile Lake	82013200		1																											v7	v7	v 15	v 14	v 14	v 14	v 14	v 12	v 12	v 14
Young America Lake	10010500		1																				v1																
Zumbra Lake	10004100		1					5						13												13													

Appendix B

Lake Characteristics

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Acorn Lake	82010200		44	296	6.7	3.0	0.7	101.0239-9999999-999	100	Y	N	
Alice Lake	82028700		28	2,806	100.2	2.7			100	Y	Y	
Alimagnet Lake	19002100		109	1,094	10.0	3.0	1.5	545	100	Y		
Anderson Pond	19009400		2									
Ann Lake	10001200		116	1,247	10.8	13.7			41		Y	
Ardmore Lake	27015300		10.1			6.1	2.4	78	89		N	
Armstrong Lake	82011602		39			1.5	1	128	100	Y	N	
Auburn Lake	10004400		287	8,027	28.0	25.6			56		Y	
Baldwin Lake	2001300		220			1.5			100	Y	N	
Barker Lake	82007600		45	823	18.3	9.0	4.4	648			N	
Bass Lake	27001500	St. Louis Park	95									
Bass Lake	27009800	Plymouth	194	3,100	16.0	9.4	3.1	1,979	82		N	
Bass Lake	82003500	May Township	81			4.3			100	Y	N	
Bass Lake	82012300	Grant Township							100		N	
Bass Lake	82012400	Grant Township							100		N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Battle Creek Lake	82009100		105	4,264	40.6	4.6			100	Y	Y	
Bavaria Lake	10001900		200	711	3.6	18.3	5.6	3,674	40		Y	Centrarchid
Bay Pond	82001100		10.19999-9999999-999	849	83.2	1.1				Y		
Benton Lake	10006900		115	322	2.8	2.0			100	Y	N	
Benz Lake	82012000		36			2.7			100	Y	N	
Beutel Pond	82039900					1.1				Y		
Big Carnelian Lake	82004900		455	1,900	4.2	20.0	9.8	14,560	28		Y	
Big Comfort Lake	13005300		219			14.3			41		Y	
Big Marine Lake	82005200		1,706	2,659	1.6	15.2	7.6	42,527	67		Y	
Big Woods Lake	10024900		33	1,421	43.1	2.5				Y	N	
Birch Lake	13004200		65									
Bone Lake	82005400		212	5,177	24.4	9.8	3.7	2,820	59		Y	
Brick Pond	82030800					1.5				Y		
Brickyard Clayhole Lake	10022500		17			13.1			35		N	
Bryant Lake	27006700		176			13.7			36		Y	
Buck Lake	70006500		65	3,925	60.4						N	
Burandt Lake	10008400		96			7.3			70		N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Bush Lake	27004700		172			8.5			64		Y	
Byllesby Lake	19000600		1,368.5	733,166	535.7	15.2			71		Y	
Campbell Lake	10012700		72			2.0			100	Y	N	
Carol Lake	82001700		63	375	6.0	1.8	0.9	186	100	Y	N	
Cates Lake	70001800		27			4.0			100	Y	N	
Cedar Lake	70009100		742	11,104	15.0	4.7	2.1	5,194	100		Y	
Cedar Island Lake	27011900		80	800	10.0	2.1	1.4	368	100	Y	N	
Cenaiko Lake	2065400		29			9.1			40		N	Stocked w/Trout - Fishing Pier
Centerville Lake	2000600		473	1,640	3.5	5.8			58		Y	
Christmas Lake	27013700		268	741	2.8	26.5			29		Y	Trout Lake
Clear Lake	82004500		31			8.2			94		N	
Clear Lake	82009900											
Clear Lake	82016300		400			8.5	3.7	4,800	67		Y	Walleye
Cloverdale Lake	82000900		45	819	18.2	8.5	3	450	86		N	
Cobblecrest Lake	27005300		10								N	
Cobblestone Lake	19045600		37			6.0						
Cody Lake	66006100		256			3.7	2.4	78		Y		

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Colby Lake	82009400		71	8,088	113.9	3.4			100	Y	N	
Cornelia Lake	27002800		52			2.0				Y	N	
Courthouse Lake	10000500		10			17.4			30		N	Stocked w/Trout
Cowley Lake	27016900											
Crane Lake	27003400					1.5			100	Y	N	
Crystal Lake	19002700	Burnsville	292	2,001	6.9	11.3	3.1	2,920	72		Y	Panfish - Fishing Pier
Crystal Lake	27003400	Robbinsdale	76	1,272	16.7	10.4	3.7	917	68		Y	Centrarchid - Fishing Pier
Dean Lake	70007400		128						100		N	
DeMontreville Lake	82010100		160	1,108	6.9	7.3	2.4	1,280	90		Y	
Downs Lake	82011000		35	2,400	68.6	2.1	1.5	175	100	Y	N	
Dubay Lake	27012900		16.60000-0000000-001								N	
Duck Lake	27006900		45.6	199.8	4.4	2.6			100	Y	Y	
Eagle Lake	10012100	Carver	186	1,050	5.6	4.3	2.5	1,500	100	Y	Y	
Eagle Lake	27011101	Maple Grove	291	3,220	11.1	10.4	3.8	3,667	68		Y	Centrarchid
Eagle Point Lake	82010900		120	11,502	95.9	1.8	1	360	100	Y	N	
Earley Lake	19003300		29	1,629	56.2						N	
East Lake	19034900		40									

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
East Boot Lake	82003400		47	93	2.0	8.2	0.9	282	84		Y	
Echo Lake	82013500		41	194	4.7	1.8	0.8	107	100	Y	N	
Edina Lake	27002900					1.0			100	Y	N	
Edith Lake	82000400		81	1,576	19.5	13.0						
Elmo Lake	82010600		284	1,191	4.2	41.7			22			
Farquar Lake	19002300		63	353	5.6	3.0	1.4	290	100	Y	N	
Fireman's Clayhole Lake	10022600		8			7.0			88			
Fish Lake	70006900	Scott	171	660	3.9	8.5	4.4	2,468	43		Y	Centrarchid
Fish Lake	82006400	Scandia	72	683	9.5	3.0	1.5	360	100	Y	N	
Fish Lake	82009300	Woodbury	5.2									
Fish Lake	82013700	Grant Township	21			10.4			67			
Fourth Lake	13002200		33.29999-9999999-997	1,918	57.6	2.0			100	Y	N	
Forest Lake	82015900		2,249	4,285	1.9	11.5	3.4	24,986	68		Y	
French Lake	27012700		352	870	2.5	1.0				Y	Y	
Friedrich's Pond	82010800		14.5	360	24.8							
Gaystock Lake	10003100		105			5.0			100		N	
George Lake	2009100		488			9.8			80			

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
George Watch Lake	2000500		528			2.0	1.5	2,587	100	Y	Y	
German Lake	82005600		109									
Glen Lake	27009300		98			7.6			91		N	
Goetschel Lake	82031300		22	2,812	127.8	4.2	1.2	88	100	Y	N	
Goggins Lake	82007700		11						100		N	
Golden Lake	2004500		57	7,680	134.7	7.3	2.5	463	90		Y	
Goose Lake	82005900	Scandia	83			7.6	2.4	664	55		Y	
Goose Lake	10008900	Waconia	407	1,100	2.7	3.0	1.5	2,035	100	Y		Natural Environment
Grace Lake	10021800		22			6.7			79			
Haas Lake	70007800		32.20000-0000000-003								N	
Hafften Lake	27019900		43						60		Y	
Half Breed Lake (Syl-van Lake)	82008000		75	303	4.0	10.3	1.7	420	67		N	
Hart Lake	2008100		8						100		N	
Harvey Lake	27006700					0.7			100	Y	N	
Hay Lake	82006500		33								N	
Hazeltine Lake	10001400		236			2.0			100	Y	N	
Heims Lake	13005600											

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Henry Lake	10017500		77			1.5			100	Y	N	
Herber's Pond	82001501					2.0			100	Y	N	
Hidden Lake	27069300		9			8.5			56		N	
Highland Lake	2007900		22			1.0			100	Y	N	
Holland Lake	19006500		38			18.8			59		Y	
Hornbean Lake	19004700		22								N	
Horseshoe Lake	19005100		16								N	
Horseshoe Lake	82007400	West Lakeland Twp.	53			3.4				Y		
Hydes Lake	10008800		215	430	2.0	5.5	3	2,150	88		Y	
Island Lake	2002200		67			6.7			87		N	
Jackson WMA	82030500		14.3									
Jane Lake	82010400		155	1,402	9.0	12.0	3.7	1,860	72		Y	
Jellum’s Lake	82005202		72	333	4.6	4.9	2.4	569	100		N	
Jonathon Lake	10021700											
Jubert Lake	27016500		93			12.5			53		N	
July Lake	82031800											
Karth Lake	62007200											

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Keller Lake	19002500	Burnsville	51	1,387	27.2	3.0	1.8	300	100	Y	N	
Kingsley Lake	19003000		44	193	4.4	4.0			100	Y	N	
Kismet Lake	82033300										N	
Klawitter Lake	82036800		4.5	168	37.3				100			
Kramer Lake	82011700											
La Lake	82009700		35			3.5			100	Y	N	
Lac Lavon	19044600		55	306	5.6	9.8			47		N	Stocked w/Trout - Fishing Pier
Lake of the Isles	27004000		114			9.5			79		Y	
Langton Lake	62004900		30	257	8.6	1.5	1.2	120	100	Y		
Laura Lake	27012300		33.4	312	9.3	2.9			100	Y	N	
Lee Lake	19002900		25	324	13.0	5.2			100		N	
Legion Pond	82046200		16	224	14.0							
LeMay Lake	27008500		34			4.0	1.6	173		Y		
Lendt Lake	13010300		57.3	456.2	8.0	2.5			100	Y	N	
Levander Pond	19008800		2.5									
Libbs Lake	27008500		23			2.1			100	Y	N	
Lily Lake	82002300		52			17.4			73		Y	Centrarchid - Fishing Pier

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Little Carnelian Lake	82001400		162	565	3.5	21.3	10.7	5,686			N	
Little Comfort Lake	13005400		36			17.0			44		N	
Little Johanna Lake	62005800		35			12.0			67		N	
Little Long Lake	27017900		108			23.2			49		Y	
Lochness Lake	2058400		5.3			4.9						
Lone Lake	27009400		22			8.2			18		Y	
Long Lake	19002200	Appley Valley	36			1.5			100	Y	N	
Long Lake	82002100	Stillwater	71			6.7			96		N	
Long Lake	82003000	May Township	88			3.7			100	Y	Y	
Long Lake	82006800	Scandia	35	381	10.9	2.1	1.1	126	100	Y	N	
Long Lake	82011800	Pine Springs	62	2,060	33.2	10.4	3.6	744	55		N	
Long Lake	82013000	Mahtomedi	48			7.7			92		N	
Loon Lake	82001502		64	407	6.4	4.9	2.4	206	100		N	
Lost Lake	27010300	Plymouth	22			1.8			100	Y	N	
Lost Lake	82013400	Mahtomedi	22			7.9			34		Y	
Lotus Lake	10000600		246	1,033	4.2	8.8	4.3	3,500	74		Y	
Louise Lake	82002500		48	616	12.8	3.7	1.8	283	100	Y	N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Lucy Lake	10000700		87			6.4			99		N	
Lynch Lake	82004200		43									
MacDonald Pond	82006200		12			2.7			100	Y	N	
Magda Lake	27006500		15									
Maple Marsh Lake	82003800		38	148	3.9	3.4	1.7	212	100	Y	N	
Marcott Lake (Rosen-berg Lake)	19004100		20			8.2			90		N	
Marcott Lake (Oh-mans Lake)	19004200		34			10.1					N	
Maria Lake	10005800		169			1.0			100	Y	Y	
Marion Lake	19002600		560			6.4			81		Y	
Markgrafs Lake	82008900		46	413	9.0	2.4			100	Y	N	Rearing
Markley Lake	70002100		27			3.7			100	Y	N	
Masterman Lake	82012600		45									
McDonald Lake	82001000		54	1,051	19.5	3.7	1.8	324	100	Y	N	
McKnight Lake	10021600											
McKusick Lake	82002000		46			4.7			100		N	
McMahon Lake	70005000		110			4.5			100	Y	Y	
Meadow Lake	27005700		11	121	11.0	1.2			100	Y	N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Medicine Lake	27010400		886			14.9			45		Y	
Medina Lake	27014600		28						100		N	
Mergen's Pond	82048200		12	1,383	115.3	1.3			100	Y	N	
Miller Lake	10002900		145	16,701	115.2	4.3	3.1	1,479	100	Y	N	
Minnewashta Lake	10000900		677			21.3			55		Y	
Minnetoga Lake	27008800		14.4			8.2	3.9	183				
Mitchell Lake	27007000		112			5.8			97		Y	
Moody Lake	13002300		35			14.6			63		N	
Mud Lake	82002602		62	899	14.5	2.1	1.1	224	100	Y	N	
Normandale Lake	21104500		103			3.7			100	Y		
North Twin Lake	82001800		69	187	2.7	1.8	0.9	207	100	Y	N	
Northwood Lake	27062700		15	1,341	89.4	1.5	0.8	41	100	Y	N	
O'Connor Lake	82000200		38								N	
O'Dowd Lake	70009500		258			6.7			91		Y	
Oak Lake	10009300		339			3.4			100	Y	N	
Olson Lake	82010300		89	200	2.2	4.5	2.1	623	100	Y	Y	
Oneka Lake	82014000		381			2.1	1.2	1,524	100	Y	N	Wildlife

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Orchard Lake	19003100		250	2,012	8.0	10.0	3	2,500	75		Y	Centrarchid
Pamela Lake	27067500		18			1.5			100	Y	N	
Parkers Lake	27010700		97	950	9.8	11.3	3.7	1,164	70		Y	
Pat Lake	82012500		13									
Peltier Lake	2000400		174	68,082	391.3	4.9	2.1	3,255	100		Y	Gamefish
Penn Lake	27000400		31			2.1			100	Y	Y	
Pepin Lake	40002800		326			3.4	1.1	1,150		Y	Y	
Peter Lake	27014700		46			20.7			35		N	
Pickerel Lake	2013000	Nowthen	246	616	2.5	1.5	1.5	369	100	Y	Y	
Pickerel Lake	19007900	Lilydale	114			3.4			100	Y	Y	Floodplain lake
Pike Lake	27011102	Maple Grove	59	919	15.6	6.7	2	395	95		Y	Centrarchid
Pike Lake	62006900	New Brighton	35			4.9	2.1	252	100		N	Gamefish
Pike Lake	70007600	Prior Lake	57	1,991	34.9	2.7			100	Y	N	
Pine Tree Lake	82012200		174			7.9	3	1,740	91		N	Centrarchid
Pleasant Lake	70009800		300			1.5			100	Y	Y	
Pomerleau Lake	27010000		27			7.9	2.7	243	73		N	
Powers Lake	82009200		57	1,238	21.7	12.5			57		N	Centrarchid

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Priebe Lake	62003600					1.5			100	Y	N	
Lower Prior Lake	70002600		827	19,560	23.7	18.3	4.1	11,120	46		Y	Centrarchid
Upper Prior Lake	70007200		340	16,460	48.4	15.2	3.1	3,460	93		Y	Centrarchid
Rebecca	19000300	Hastings	58			4.6			100	Y	Y	Floodplain lake
Red Rock Lake	27007600		96.9			4.9			94		Y	
Regional Park Lake	82008700		16	600	37.5	5.8			100		N	
Reitz Lake	10005200		79	3,711	47.0	11.0	4	1,027	58		Y	
Reshnanau Lake	2000900											
Rest Area Pond	82051400		12.6	17,781	1,411.2							
Rice Lake	27011600		252			3.4	1.9	1,570		Y	Y	
Riley Lake	10000200		297	4,796	16.1	15.0	6.6	6,429	34		Y	
Rogers Lake	19008000		94			2.4	1.3	393		Y	Y	
Rose Lake	27009200		17									
Ryan Lake	27005800		20	5,510	275.5	10.7	64.8	312	56		N	
South School Section Lake	82015100		125			8.0			41			
Sanborn Lake	40002700					1.2	0.9			Y	Y	
Sand Lake	82006700		46			5.5	2.4	368	91		N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Schmidt Lake	27010200		37	190	5.1	9.1	1.5	207	92		N	
School Lake	13005700		48									
Schroeder Pond	82030100					3.0			100	Y	N	
Schutz Lake	10001800		105	943	9.0	15.0	6	2,100	27		N	
Scout Lake	19019800					2.9				Y		
Seidl's Lake	19009500		14	415	29.6	5.0			100		N	Rearing
Shady Oak Lake	27008900		85			10.7			66		Y	
Shaver Lake	27008600		11								N	
Shields Lake	82016200		27			8.2			74		N	
Silver Lake	82001600		98	455	4.6	3.4	1.7	549	100	Y	N	
Silver Lake	62000100		72			5.5			99		Y	
Simley Lake	19003700		14			5.2					Y	
Smetana Lake	27007300		48.2			3.7			90	Y	N	
South Oak Lake	27066100										N	
South Rice Lake	27064500		3.2	63	19.7	2.5	0.5	5.4	100	Y	N	
South Twin Lake	82001900		54	63	1.2	4.0	2	356	100	Y	N	
Spring Lake	19000501	Nininger Township	1,839	23,780,000	12,930.94072-8656878	5.2			100		Y	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Spring Lake	70005400	Prior Lake	630	13,500	21.4	11.3	5.6	11,500	50		Y	
Square Lake	82004600		193	782	4.1	20.7	9	5,694	65		Y	Stocked w/Trout
St. Croix Lake	82000100		8,600	4,918,790	572.0	23.8					Y	
St. Joe Lake	10001100		14			15.9			46		Y	
Staples Lake	82002800		24	127	5.3	4.3	2.1	165	100	Y	N	
Success Lake	27063400		7.7									
Sunfish Lake	19005000		49			9.8					N	
Sunfish Lake	82010700		50	526	10.5						N	
Sunnybrook Lake	82013300		16	630	39.4	6.1	2	104			N	
Sunset Lake	82015300		124			5.2			100		N	Gamefish
Sunset Pond	19045100		60			3.7			100	Y	N	
Susan Lake	10001300		93			5.2			81		Y	
Swede Lake	10009500		376			4.0			100	Y	Y	
Sweeney Lake	27003501		66	2,400	36.4	8.0	3.6	790	52		N	Panfish
Sylvan Lake	27017100		134			4.0			100	Y	N	
Tamarack Lake	10001000		24			20.0			41		N	
Terrapin Lake	82003100		86			4.6			100		N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
Third Lake	13002400		61.9	196.8	3.2	2.5			100	Y	N	
Thole Lake	70012000		105			3.7			100	Y	Y	
Turtle Lake	82003600		44	699	15.9	2.4	1.2	172	100	Y	N	
Twin Lake	19002800	Burnsville	11						100			
Twin Lake	27003502	Golden Valley	19			17.0			42		N	
Twin Lake, lower	27004200	Robbinsdale	35.6	5,322	149.5	6.7	2.3	340	83		Y	Centrarchid
Twin Lake, middle	27004200	Crystal	56.9	4,053	71.2	13.4	4.9	918	57		Y	Centrarchid
Twin Lake, upper	27004200	Brooklyn Park	120.3	3,657	30.4	2.4	0.9	397	100	Y	N	Centrarchid
Twin Lake	27065600	St. Louis Park	12.4								N	
Valentine Lake	62007100		60	2,237	37.3	4.0	1.5	300	100	Y		
Valley Lake	19034800		8	117	14.6	3.2			100	Y	N	
Virginia Lake	10001500		110	772	7.0	10.4	3.3	1,210	88		Y	
Waconia Lake	10005900		3,000	7,880	2.6	11.3	4	38,632	53		Y	Centrarchid
Weber Lake	82011900		7.5	1.4	0.2	1.5			100	Y	N	
West Boot Lake	82004400		110	209	1.9	11.9	5.9	2,090	56		Y	
West Lakeland Stor-age Site	82048800		27	1,139	42.2						N	
Westwood Lake	27071100		41			2.0			100	Y	N	

Lake	DNR ID	Location	Surface Area (ac)	Watershed Area (ac)	Watershed to Surface Area Ratio	Max Depth (m)	Mean Depth (m)	Volume (ac-ft)	% Lit-toral	Shallow Lake	Public Access	DNR Classification
White Rock Lake	82007200		65									
Wilmes Lake	82009000		41	2,247	54.8	5.5					Y	
Windsor Lake	27008200		14								N	
Wing Lake	27009100		11									
Winkler Lake	10006600		129	2,758	21.4							
Wood Lake	19002400		9	157	17.4	4.5			100	Y	N	Panfish
Woodpile Lake	82013200		19									

Appendix C

2015 CAMP Volunteers

Sponsor	Lake	DNR ID #	Volunteer Name
Apple Valley, City of	Cobblestone Lake	19045600	Jeff Sluiter
Apple Valley, City of	Farquar Lake	19002300	Jeff Christianson
Apple Valley, City of	Long Lake	19002200	Joan Kettelkamp
Apple Valley, City of	Long Lake	19002200	Brook Simpson-Sullivan
Apple Valley, City of	Scout Lake	19019800	Dan Stanek
Basset Creek WMC	Lost Lake	27010300	Barrie Froseth
Basset Creek WMC	Medicine Lake, site 1	27010400	David Nelson
Basset Creek WMC	Medicine Lake, site 1	27010400	Karl Nelson
Basset Creek WMC	Medicine Lake, site 2	27010400	Patrick Anderson
Basset Creek WMC	Medicine Lake, site 2	27010400	Kirsten Erickson
Basset Creek WMC	Northwood Lake	27062700	Robert White
Basset Creek WMC	Parkers Lake	27010700	David Parker
Basset Creek WMC	Sweeney Lake	27003501	Shanna Hanson
Basset Creek WMC	Twin Lake	27003502	Jonathon Burris
Basset Creek WMC	Westwood Lake	27071100	Nancy Ebner
Black Dog WMO	Crystal Lake	19002700	Joe Tranchilla
Black Dog WMO	Keller Lake	19002500	Randy Koenig
Black Dog WMO	Keller Lake	19002500	Jamie Mancini
Black Dog WMO	Kingsley Lake	19003000	Lakeville staff
Black Dog WMO	Lac Lavon Lake	19044600	Wally Shaver
Black Dog WMO	Orchard Lake	19003100	Tom Goodwin
Burnsville, City of	Alimagnet Lake	19002100	John Ritter
Burnsville, City of	Earley Lake	19003300	Mike Zytkovicz
Burnsville, City of	Sunset Pond	19045100	Steve Behnke

Sponsor	Lake	DNR ID #	Volunteer Name
Burnsville, City of	Twin Lake	19002800	Bernie DeMaster
Burnsville, City of	Wood Lake	19002400	Laurie de Perez
Carver County	Bavaria Lake	10001900	Steve Norton
Carver County	Benton Lake	10006900	Carver County staff
Carver County	Big Woods Lake	10024900	Carver County staff
Carver County	Brickyard Clayhole Lake	10022500	Carver County staff
Carver County	Burandt Lake	10008400	Lynn Ayers
Carver County	Burandt Lake	10008400	David Crown
Carver County	Burandt Lake	10008400	Craig Zimmerman
Carver County	Courthouse Lake	10000500	Carver County staff
Carver County	Eagle Lake	10012100	Carver County staff
Carver County	Goose Lake	10008900	Carver County staff
Carver County	Grace Lake	10021800	Carver County staff
Carver County	Hazeltine Lake	10001400	Carver County staff
Carver County	Hydes Lake	10008800	Carver County staff
Carver County	Jonathan Lake	10021700	Carver County staff
Carver County	McKnight Lake	10021600	Carver County staff
Carver County	Miller Lake	10002900	Carver County staff
Carver County	Reitz Lake	10005200	Mark McMullen
Carver County	Reitz Lake	10005200	Pauline McMullen
Carver County	Swede Lake	10009500	Carver County staff
Carver County	Waconia Lake	10005900	Carver County staff
Chanhassen, City of	Lotus Lake	10000600	Chanhassen staff
Chanhassen, City of	Lucy Lake	10000700	Sharon McCotter
Chanhassen, City of	Lucy Lake	10000700	Tim McCotter
Chanhassen, City of	Minnewashta Lake, site 2	10000900	Steve Aldritt
Chanhassen, City of	Riley Lake	10000200	David Florenzano

Sponsor	Lake	DNR ID #	Volunteer Name
Chanhassen, City of	St. Joe Lake	10001100	Sue Morgan
Chanhassen, City of	St. Joe Lake	10001100	Linda Scott
Chanhassen, City of	Susan Lake	10001300	Chanhassen staff
CLFLWD	Big Comfort Lake	13005300	Wally Ostlie
CLFLWD	Bone Lake	82005400	Julie Morse
CLFLWD	Forest Lake, site 1	82015900	Steve Schmaltz
CLFLWD	Forest Lake, site 2	82015900	Doug Joens
CLFLWD	Forest Lake, site 3	82015900	David Schutta
CLFLWD	Forest Lake, site 3	82015900	Judy Weninger
CLFLWD	Forest Lake, site 4	82015900	Jerry Grundtner
CLFLWD	Halfbreed Lake	82008000	Curt Sparks
CLFLWD	Little Comfort Lake	13005400	Steve Schreiber
CLFLWD	Moody Lake	13002300	Douglas Toavs
Eden Prairie, City of	Duck Lake	27006900	Rod Fisher
Eden Prairie, City of	Mitchell Lake	27007000	Fran Warner
Eden Prairie, City of	Mitchell Lake	27007000	Gordon Warner
Eden Prairie, City of	Red Rock Lake	27007600	Mark David
Elm Creek WMC	Jubert Lake	27016500	Patty Gardner
Elm Creek WMC	Laura Lake	27012300	Chris Foley
Hastings, City of	Rebecca Lake	19000300	Hastings Environmental Protectors
Lakeville, City of	East Lake	19034900	Lakeville staff
Lakeville, City of	Lee Lake	19002900	Lakeville staff
Lakeville, City of	Marion Lake	19002601	Curt Savstrom
Lakeville, City of	Valley Lake	19034800	Lakeville staff

Sponsor	Lake	DNR ID #	Volunteer Name
Lower Mississippi River WMO	Pickerel Lake	19007900	Dakota SWCD staff
Mendota Heights, City of	Lemay Lake	19008200	Mendota Heights staff
Mendota Heights, City of	Rogers Lake	19008000	Doug Hennes
Nine Mile Creek WD	Bush Lake	27004700	Elizabeth Erdmann
Nine Mile Creek WD	Bush Lake	27004700	Paul Erdmann
Nine Mile Creek WD	Cornelia Lake	27002802	Stephen Sando
Nine Mile Creek WD	Minnetoga Lake	27008800	Holly Birkeland
Nine Mile Creek WD	Minnetoga Lake	27008800	Julie Brokaw
Nine Mile Creek WD	Penn Lake	27000400	Lisa McIntire
Nine Mile Creek WD	Wing Lake	27009100	John Burton
Prior Lake Spring Lake WD	Buck Lake	70006500	Steve Beckey
Prior Lake Spring Lake WD	Haas Lake	70007800	Thomas Chaklos
Prior Lake Spring Lake WD	Lower Prior Lake, site 2	70002600	Prior Lake-Spring Lake WD staff
Rice Cr WD	George Watch Lake	2000500	Wargo Nature Center
Rice Cr WD	Karth Lake	62007200	Andrew Elmquist
Rice Cr WD	Karth Lake	62007200	Gary Gerding
Rice Cr WD	Langton Lake	62004901	Dick McGehee
Rice Cr WD	Langton Lake	62004901	Tam McGehee
Rice Cr WD	Little Johanna Lake	62005800	Jennifer Marrone
Rice Cr WD	Little Johanna Lake	62005800	David Short
Rice Cr WD	Lochness Lake	2058500	Kristen Genet
Rice Cr WD	Lochness Lake	2058500	Jake Johnson
Rice Cr WD	Lochness Lake	2058500	Steve LaVasseur
Rice Cr WD	Long Lake	82013000	Kitty Francy-Payton
Rice Cr WD	Oneka Lake	82014000	Paul Bolstad
Rice Cr WD	Pine Tree Lake	82012200	Gene Berwald

Sponsor	Lake	DNR ID #	Volunteer Name
Rice Cr WD	Sunset Lake	82015300	Diane Coderre
Rice Cr WD	White Rock Lake	82007200	David Bluhm
Saint Croix Basin Team	St. Croix Lake, site 1N	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 1N	82000100	Roberta Harper
Saint Croix Basin Team	St. Croix Lake, site 2	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 2	82000100	Roberta Harper
Saint Croix Basin Team	St. Croix Lake, site 3	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 3	82000100	Roberta Harper
Saint Croix Basin Team	St. Croix Lake, site 4	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 4	82000100	Roberta Harper
Saint Croix Basin Team	St. Croix Lake, site 5	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 5	82000100	Roberta Harper
Saint Croix Basin Team	St. Croix Lake, site 6	82000100	Rick Meierotto
Saint Croix Basin Team	St. Croix Lake, site 6	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 6	82000100	Roberta Harper
Saint Croix Basin Team	St. Croix Lake, site 7	82000100	Carpenter Nature Center
Saint Croix Basin Team	St. Croix Lake, site 7	82000100	Jim Harper
Saint Croix Basin Team	St. Croix Lake, site 7	82000100	Roberta Harper
Saint Louis Park, City of	Cobblecrest Lake	27005300	Jim Kellogg
Saint Louis Park, City of	South Oak Lake	27066100	John Johnson
Saint Louis Park, City of	Twin Lake	27065600	Paul O'Brien
Scott County	Cedar Lake, site 1	70009100	Lowell Mohn
Scott County	Cedar Lake, site 2	70009100	Lowell Mohn
Scott County	McMahon Lake	70000500	Diane Williamson
Scott County	McMahon Lake	70000500	Joe Williamson
Scott County	Thole Lake	70012001	Mark Vierling

Sponsor	Lake	DNR ID #	Volunteer Name
Shakopee, City of	O'Dowd Lake	70009500	Mike Boyce
Shakopee, City of	O'Dowd Lake	70009500	Sandy Boyce
Shingle Creek WMC	Bass Lake	27009800	Marvin Groth
Shingle Creek WMC	Magda Lake	27006500	Carolyn Dindorf
Sunfish Lake, City of	Hornbeam Lake	19004700	Scott Spaeth
Sunfish Lake, City of	Horseshoe Lake	19005100	Jim Nayes
Sunfish Lake, City of	Sunfish Lake	19005000	James Stowell
VBWD	DeMontreville Lake	82010100	Steve Iverson
VBWD	Edith Lake	82000400	Joseph Reithmeyer
VBWD	Edith Lake	82000400	Kimberly Reithmeyer
VBWD	Elmo Lake	82010600	Wendy Griffin
VBWD	Jane Lake	82010400	Kyle Brown
VBWD	Jane Lake	82010400	Krista Leuthe
VBWD	Klawitter Pond	82036800	Pat Barrett
VBWD	Klawitter Pond	82036800	Hailey Jostes
VBWD	Klawitter Pond	82036800	Bonnie Juran
VBWD	Long Lake	82011800	Bill Feely
VBWD	Olson Lake	82010300	Bob Meier
VBWD	Rest Area Pond	82051400	MnDOT staff
Washington CD	Alice Lake	82028700	WCD staff
Washington CD	Armstrong Lake	82011600	WCD staff
Washington CD	Bass Lake	82012300	WCD staff
Washington CD	Bass Lake	82012400	WCD staff
Washington CD	Benz Lake	82012000	WCD staff
Washington CD	Big Carnelian Lake	82004900	WCD staff

Sponsor	Lake	DNR ID #	Volunteer Name
Washington CD	Big Comfort Lake	13005300	WCD staff
Washington CD	Big Marine Lake	82005200	WCD staff
Washington CD	Bone Lake	82005400	WCD staff
Washington CD	Clear Lake	82004500	WCD staff
Washington CD	Downs Lake	82011000	WCD staff
Washington CD	Eagle Point Lake	82010900	WCD staff
Washington CD	East Boot Lake	82003400	WCD staff
Washington CD	Echo Lake	82013500	WCD staff
Washington CD	Edith Lake	82000400	WCD staff
Washington CD	Fish Lake	82006400	WCD staff
Washington CD	Fish Lake	82009300	WCD staff
Washington CD	Fish Lake	82013700	WCD staff
Washington CD	Forest Lake, site 1	82015900	WCD staff
Washington CD	Forest Lake, site 2	82015900	WCD staff
Washington CD	Forest Lake, site 3	82015900	WCD staff
Washington CD	Fourth Lake	13002200	WCD staff
Washington CD	German Lake	82005600	WCD staff
Washington CD	Goggins Lake	82007700	WCD staff
Washington CD	Goose Lake	82005900	WCD staff
Washington CD	Goose Lake, site 1	82011301	WCD staff
Washington CD	Goose Lake, site 2	82011302	WCD staff
Washington CD	Halfbreed Lake	82008000	WCD staff
Washington CD	Hay Lake	82006500	WCD staff
Washington CD	Heims Lake	13005600	WCD staff
Washington CD	Horseshoe Lake	82010400	WCD staff
Washington CD	Jackson WMA	82030500	WCD staff
Washington CD	Jellums Lake	82005202	WCD staff
Washington CD	July Lake	82031800	WCD staff
Washington CD	Kismet Lake	82033400	WCD staff

Sponsor	Lake	DNR ID #	Volunteer Name
Washington CD	Lendt Lake	13010300	WCD staff
Washington CD	Lily Lake	82002300	Kathy Warren
Washington CD	Little Carnelian Lake	82001400	WCD staff
Washington CD	Little Comfort Lake	13005400	WCD staff
Washington CD	Long Lake	82002100	WCD staff
Washington CD	Long Lake	82003000	WCD staff
Washington CD	Long Lake	82006800	WCD staff
Washington CD	Lynch Lake, site 1	82004200	WCD staff
Washington CD	Lynch Lake, site 2	82004200	WCD staff
Washington CD	Masterman Lake	82012600	WCD staff
Washington CD	Mays Lake	82003300	WCD staff
Washington CD	McDonald Lake	82010600	WCD staff
Washington CD	McKusick Lake	82002000	WCD staff
Washington CD	Moody Lake	13002300	WCD staff
Washington CD	O'Connors Lake	82000200	Jeff Keene
Washington CD	Pat Lake	82012500	WCD staff
Washington CD	Plaisted Lake	82014800	WCD staff
Washington CD	Regional Park Lake	82008700	WCD staff
Washington CD	Sand Lake	82006700	WCD staff
Washington CD	Shields Lake	82016200	WCD staff
Washington CD	South School Section Lake	82015100	WCD staff
Washington CD	Square Lake	82004600	Leif Hembre
Washington CD	Staples Lake	82002800	WCD staff
Washington CD	Sunfish Lake	82010700	WCD staff
Washington CD	Sunnybrook Lake	82013300	WCD staff
Washington CD	Terrapin Lake	82003100	WCD staff
Washington CD	Third Lake	13002400	WCD staff
Washington CD	Twin Lake	82004800	WCD staff
Washington CD	West Boot Lake	82004400	WCD staff

Sponsor	Lake	DNR ID #	Volunteer Name
Washington CD	Woodpile Lake	82013200	WCD staff
Woodbury, City of	Colby Lake	82009400	WCD staff
Woodbury, City of	La Lake	82009700	Tim Weber
Woodbury, City of	Markgraf Lake	82008900	WCD staff
Woodbury, City of	Powers Lake	82009200	WCD staff
Woodbury, City of	Wilmes Lake	82009000	WCD staff

Appendix D

CAMP Quality Control Data 2015

Lake Name	DNR ID#	Date	Date	TP, ug/L	TP, ug/L	CLA, ug/L	CLA, ug/L	Secchi, m	Secchi, m	TKN, mg/L	TKN, mg/L
		METC	CAMP	METC	CAMP	METC	CAMP	METC	CAMP	METC	CAMP
DeMontreville	82010100	8/7/15	8/11/15	17	11	6.9	7.2	4.2	3.2	0.61	0.73
Jane	82010400	8/7/15	8/9/15	11	18	4.3	2.7	4.9	3.7	0.54	0.79
Lily	82002300	8/11/15	8/11/15	23	12	22	21	1.4	1.5	0.89	1.00
O'Dowd	70009500	8/21/15	8/20/15	56	64	59	24	0.9	0.6	1.40	1.60
Thole	70012001	8/21/15	8/23/15	92	82	77	81	0.7	0.5	2.00	1.90