## Lily Lake

## 2011 Lake Grade: N/A

• DNR ID #: 820023

• Municipality: City of Stillwater

• Location: NE <sup>1</sup>/<sub>4</sub> Section 32, T30N-R20W

Lake Size: 35.90 AcresMaximum Depth: 51 ft

• Ordinary High Water Mark: 844.8 ft

• 55%Littoral

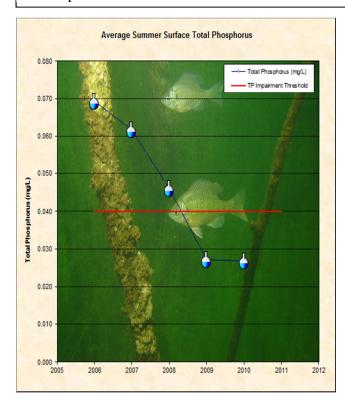
Note: Littoral area is the portion of the lake <15 ft and dominated by aquatic vegetation.

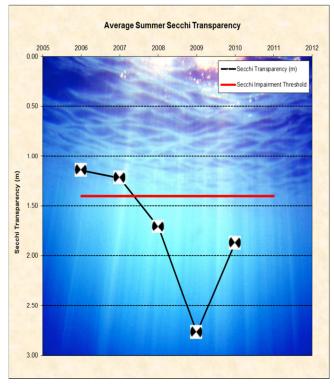
• Public access and public beach present



## **Summary Points**

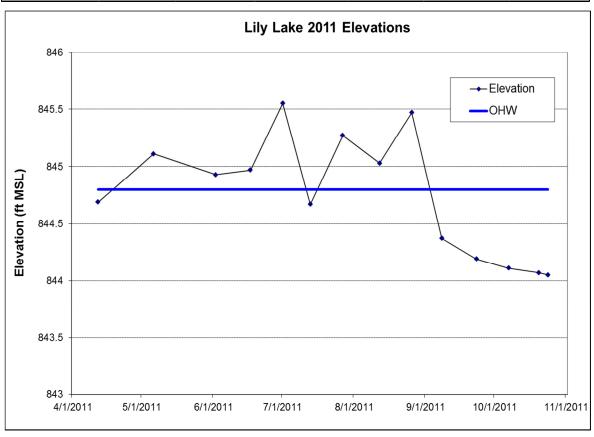
- Lily Lake was scheduled to be monitored by a volunteer in 2011, however the volunteer was unable to monitor once the season started. Therefore, no conclusions can be drawn for 2011.
- Lily Lake was considered mesotrophic in **2010**, based on the Carlson Trophic State Index.
- At this time no statistically significant trend can be determined for water quality.
- The major land use is urban/residential.
- Lily Lake is listed as impaired for nutrients on the Minnesota Pollution Control Agency's Impaired Waters List.





| Date   | Total<br>Phosphorus<br>(mg/l) | Chlorophyll-a<br>(ug/l) | Total Kjeldahl<br>Nitrogen (mg/L) | Secchi Disk<br>Depths (m) | Surface<br>Dissolved<br>Oxygen Levels<br>(mg/l) | Surface<br>Temperature<br>Levels<br>(Celsius) |  |  |  |  |  |
|--|-------------------------------|-------------------------|-----------------------------------|---------------------------|---|---|--|--|--|--|--|
| Sample I   | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Sample II  | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Sample III   | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Sample IV  | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Sample V   | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Sample VI  | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Sample VII   | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| 2011 Average   | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| 2011 Summer<br>Average   | N/A                           | N/A                     | N/A                               | N/A                       | N/A   | N/A   |  |  |  |  |  |
| Water quality thresholds are 0.04 mg/L TP, 14 µg/L CL-a, 1.4 m Secchi depth* |                               |                         |                                   |                           |   |   |  |  |  |  |  |
|  | High                          | High Date               | Low                               | Low Date                  | Average   |   |  |  |  |  |  |
| 2011 Elevation (ft)  | 845.55                        | 7/1/2011                | 844.05                            | 10/24/2011                | 844.75  |   |  |  |  |  |  |

"MPCA description of Impaired Lake's Listing criteria: "At a minimum, a decision that a given lake is impaired for the 303(d) list due to excessive nutrients will be supported by data for both causal and response factors. Data requirements for 303(d) listing consist of 12 or more TP measurements collected from June through September over the most recent 10-year period. Ideally this should represent 12 separate visits to the lake over the course of two summers; however it might also reflect four monthly samples over the course of three years (a typical sampling regimen for many lake monitoring programs). In addition to exceeding the TP guideline thresholds, lakes to be considered for 303(d) listing should have at least 12 Secchi measurements and 12 chlorophyll-a measurements. This amount of data will allow for at least one season (preferably more) of paired TP, chlorophyll-a, and Secchi disk data and provide a basis for evaluating their interrelationships and hence



| Lake Water Quality Summary |                       |                        |      |      |      |      |      |      |      |      |      |  |
|----------------------------|-----------------------|------------------------|------|------|------|------|------|------|------|------|------|--|
|                            | <b>Trophic Status</b> | Summertime Lake Grades |      |      |      |      |      |      |      |      |      |  |
|                            | 2011                  | 2011                   | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 |  |
| Total Phosphorus (mg/L)    | NA                    | NA                     | В    | В    | С    | С    | D    | С    | С    | С    | С    |  |
| Chlorophyll-a (ug/L)       | NA                    | NA                     | С    | Α    | С    | С    | С    | В    | В    | В    | В    |  |
| Secchi depth (ft) NA       |                       | NA                     | С    | В    | С    | С    | D    | С    | С    | С    | С    |  |
| Overall                    | NA                    | NA                     | C+   | B+   | С    | С    | D+   | C+   | C+   | C+   | C+   |  |