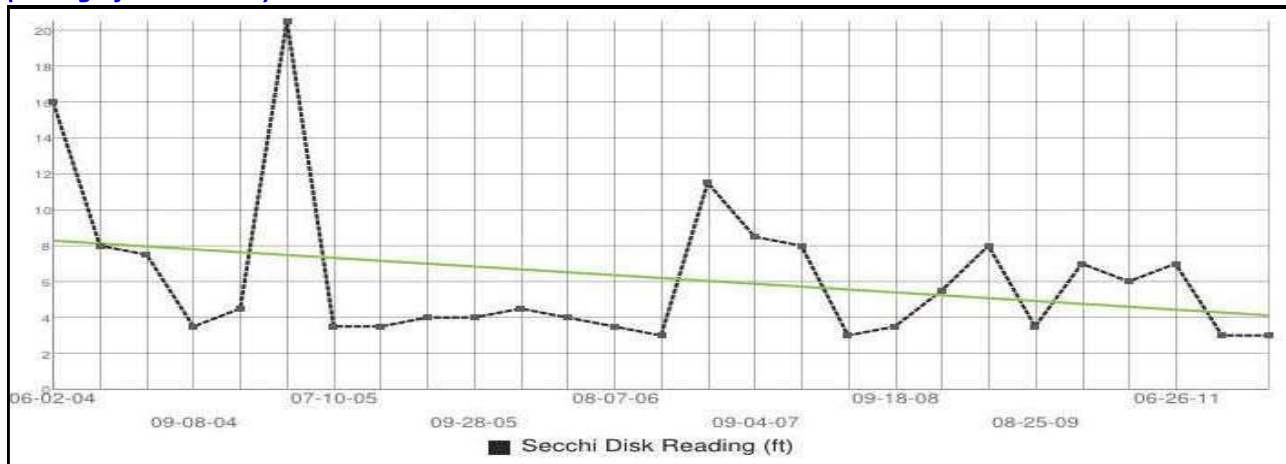


Some sample sites have been monitored for a long time. Site number 202 has been monitored for secchi from 1988-1994 and then from 2004-2012. From 1997-2000, secchi monitoring was continued on site number 203, and during studies (1988, 1989, 1991, and 1998) site 102 was monitored.

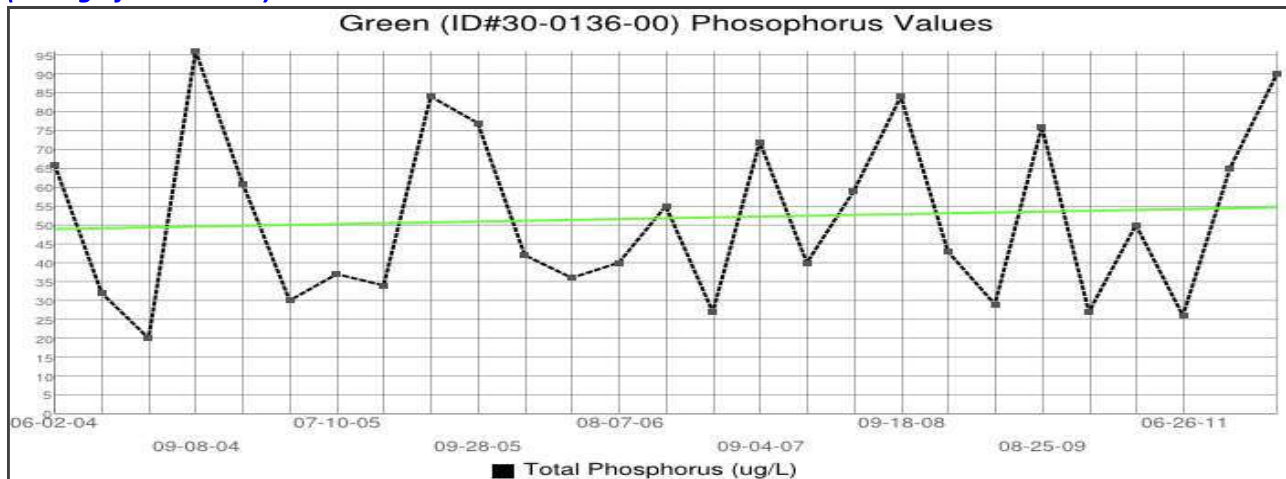
In 2004, Total Phosphorus and Cl-a monitoring were added to site 202. In [Figure Ten](#), three graphs present the three parameters – secchi, t.phos, and cl-a from 2004 through 2011. Note the relationship between them. When phosphorus levels increase, so do chlorophyll-a and consequently the secchi levels decrease in clarity. There is a cause/effect relationship. It is important to manage the lake to decrease phosphorus and other nutrient inputs in the lake to prevent further degradation. Algae blooms will become increasingly common if land use practices do not change to decrease the input of nutrients.

Secchi Averages 2004 – 2011 Site #202
(No Significant Trend)

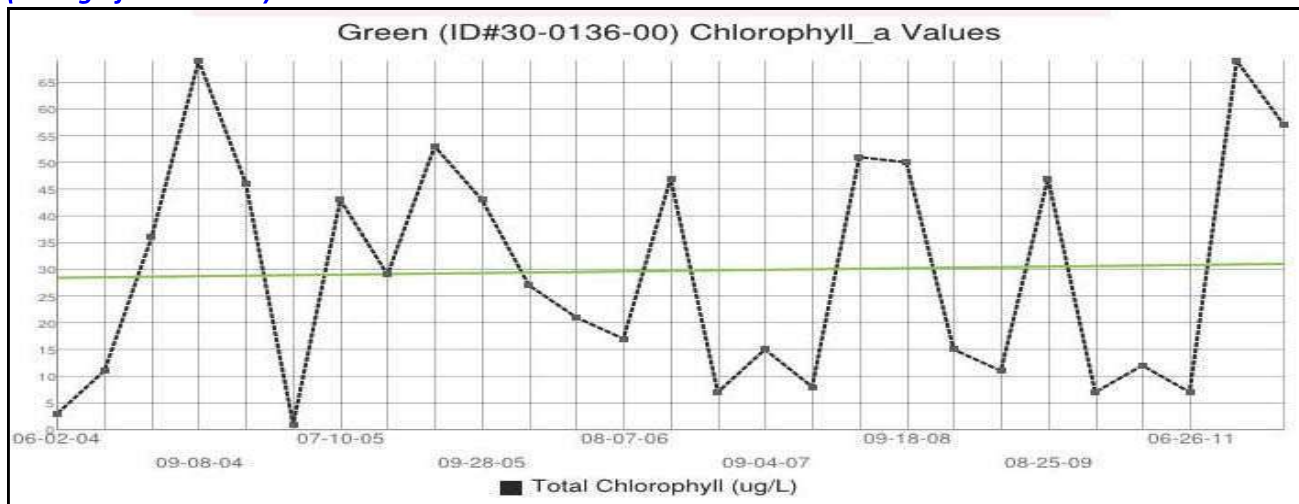
Figure Ten



Green Lake Site 202 Total Phosphorus Trend Analysis 2004 – 2011 by: RMB Laboratories
(No Significant Trend)



Green Lake Site 202 Chlorophyll-a Trend Analysis 2004 – 2011 by: RMB Laboratories
(No Significant Trend)



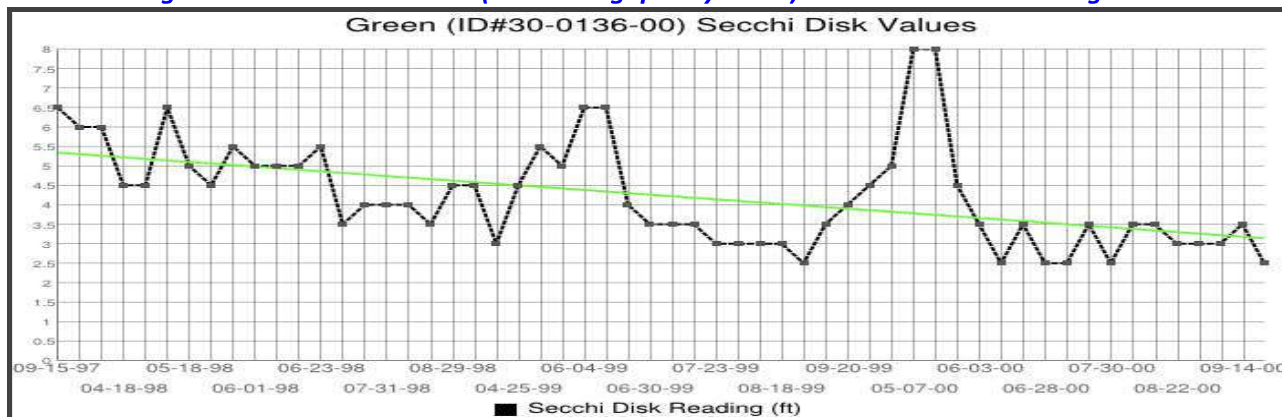
On site number 202, **Table Six** shows annual summer means for total phosphorus and chlorophyll-a. While the numbers vary from year to year, the average mean for the sum of the years is outside the typical range for the North Central Hardwood Forest Ecoregion. Green Lake was listed in 2008 by the Minnesota Pollution Control Agency as impaired for nutrients. This impairment will be addressed with the Rum River Watershed Assessment in 2014.

| Sample Site #202 - TSI Averages - 2004 through 2011 | | <i>Table Six</i> |
|--|----------------|------------------|
| <small>*RMB Lab note: prior to 2011, the reporting limit for total phosphorus was 5 ug/L. Starting in 2011, the reporting limit is 3 ug/L.</small> | | |
| Average Mean of data 2004 - 2011 | 51.8 | 29.7 |
| | TP ug/L | ChlA ug/L |
| 2004 Summer Mean | 55 | 33 |
| 2005 Summer Mean | 52.4 | 33.8 |
| 2006 Summer Mean | 43.3 | 28 |
| 2007 Summer Mean | 49.5 | 11 |
| 2008 Summer Mean | 61 | 36.3 |
| 2009 Summer Mean | 49.3 | 24.3 |
| 2010 Summer Mean | 38.5 | 9.5 |
| 2011 Summer Mean | 60.3 | 44.3 |

While sites numbers 102 and 203 (**Figure Eleven**) have limited data, it is important to look at these values and continue monitoring to establish trends. It is a valuable tool to help determine the areas of the lake that are contributing nutrients so that management strategies can be prioritized by area of the lake.

Secchi Averages 1997 – 2000 Site #203 (Decreasing quality trend)

Figure Eleven



Secchi Averages 1988 – 1998 Site #102

