

# 15 SPRING LAKE

## HISTORY

Spring Lake is a small, meromictic lake. Meromictic lakes do not mix completely; the deeper layers of the lake remain continually stratified. It is located to the west of Loring Pond, adjacent to Kenwood Parkway in central Minneapolis. Highway 394 borders the northwest portion of the riparian zone. The lake is surrounded by parkland. Spring Lake lies inside of a 195-acre subwatershed within the larger Bassett's Creek watershed. In 2006, Blake School, Target Corporation's Technology Division, and committed neighbors removed invasive buckthorn and mulberry around the perimeter of Spring Lake.

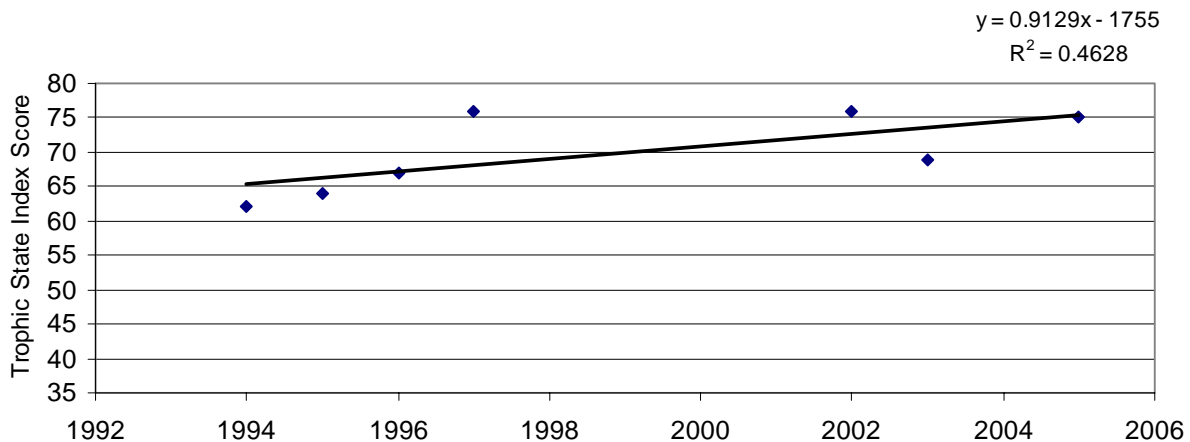
Spring Lake was not monitored in 2006. Table 15A shows the morphometric data on Spring Lake.

**Table 15A. Spring Lake morphometric data.**

Surface Area (acres)	Mean Depth (m)	Maximum Depth (m)	Volume (m <sup>3</sup> )	Watershed Area (acres)	Watershed: Lake Area (ratio)
3	3.0	8.5	3.65x10 <sup>4</sup>	45	15.0

## WATER QUALITY TRENDS (TSI)

Figure 15A shows the Spring Lake linear regression to be roughly increasing as the TSI scores decrease. A detailed explanation of TSI can be found in Section 1.

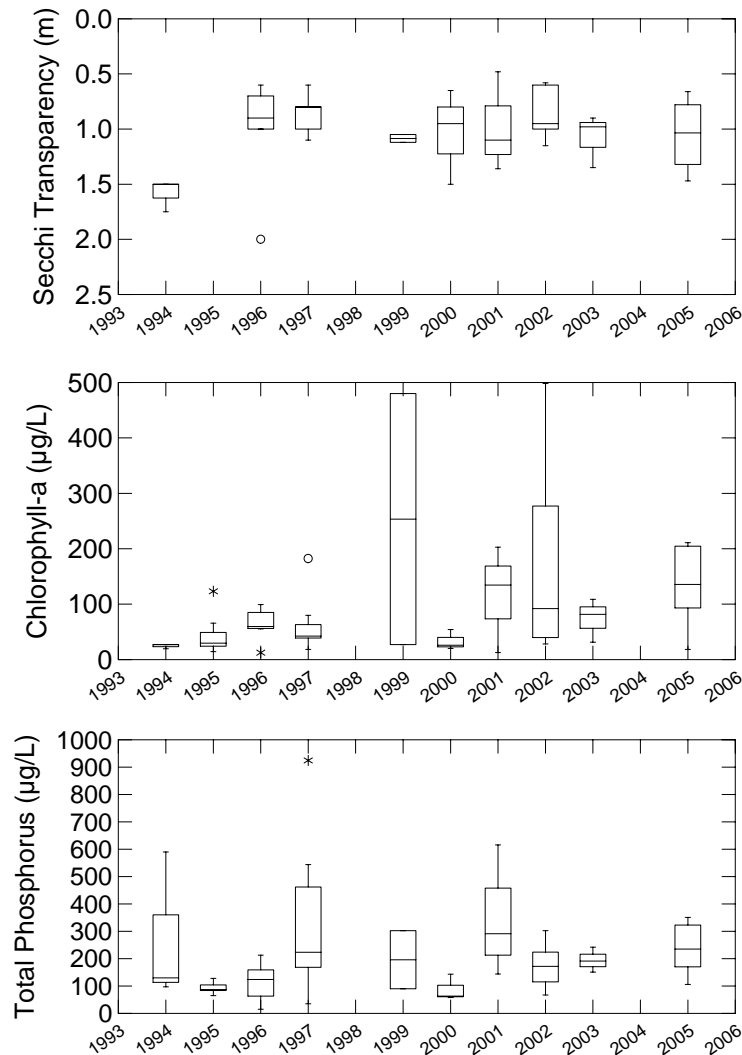


**Figure 15A. Spring Lake TSI scores and regression analysis.**

These scores must be viewed with caution as they are based on a limited number of samples. Spring Lake was not monitored in 1998. From 1999 – 2001 samples were collected quarterly, and only one sample per year was during the growing season. In 2002 and 2003, Spring Lake was sampled monthly to collect enough data to calculate a TSI score. Water quality improvements were seen in 2003 compared to 2002, but the overall trend analysis (1994 – 2005) indicates degradation.

## BOX AND WHISKER PLOTS

The box and whisker plots show the scatter within the years data set for the Secchi, chlorophyll-*a* and total phosphorus in more detail. Long-term lake monitoring is necessary to evaluate the seasonal and year-to-year variations seen in each lake and predict trends. The current sampling schedule is to monitor Spring Lake every other year. A detailed explanation of box and whisker plots can be found in Section 1. Figure 15B shows the box and whisker plots of TSI data.



**Figure 15B. Box and whisker plots of Spring Lake TSI data: 1994-2005.**

Spring Lake is eutrophic with considerable amounts of algae. The Spring Lake box plot is composed of only three data points for most years because of a limited sampling schedule. Analysis is difficult with so few historical data points. The limited number of samples are best viewed as snapshots of the lake's water quality with the understanding that lakes vary within each year, as well as from year to year. It is difficult to compare meromictic lakes with dimictic or polymictic lakes, since their chemical, physical, and trophic structures are so different. Chl-*a* and total phosphorus concentrations seem to be highly variable within Spring Lake. Secchi depths are generally shallow and have been stable at about 1 meter in recent years.

## WINTER ICE COVER

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The ice came off Spring Lake on April 2, 2006 which is two days later than the average for this lake. Ice covered Spring Lake on November 30, 2006, which is one day later than average. See Section 1 for details on winter ice cover records and Section 18 for a comparison with other lakes.