

Fish Lake

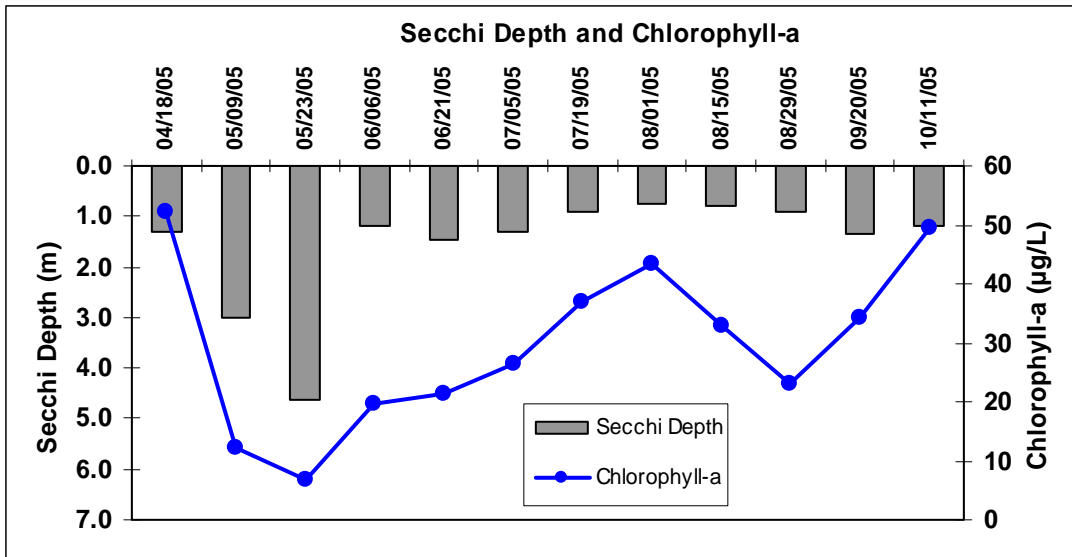
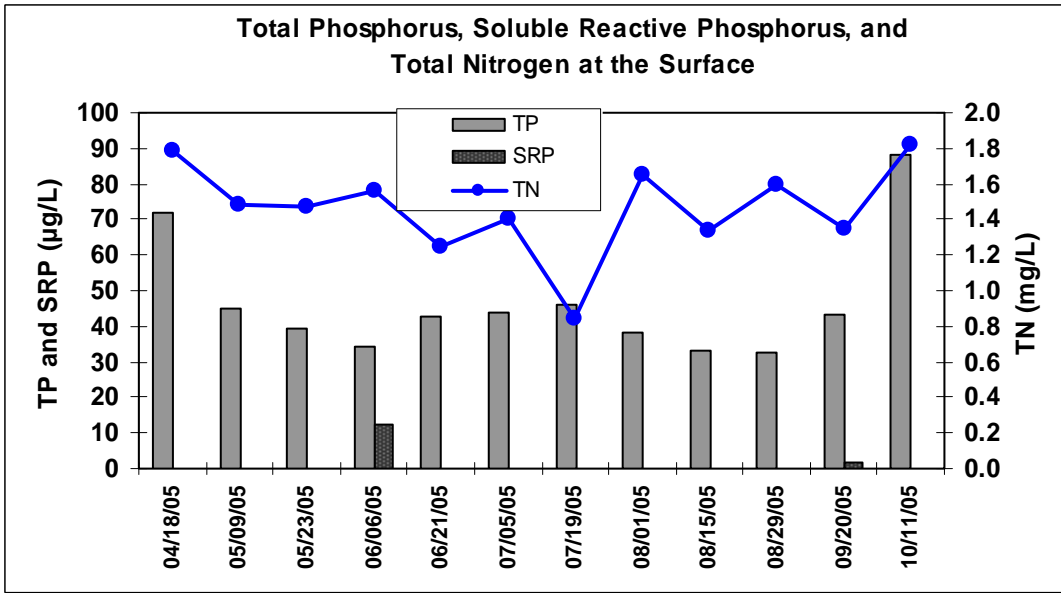
The Three Rivers Park District in-lake phosphorus concentration goal to support direct contact recreational use for Fish Lake is 36 $\mu\text{g/L}$. The average phosphorus concentration for Fish Lake in 2005 was 39 $\mu\text{g/L}$, which was slightly less than the Minnesota Pollution Control Agency impaired water criteria of 40 $\mu\text{g/L}$. The highest phosphorus concentrations in 2005 coincided with the time period of lake turn-over in the spring and fall. The process of lake turn-over re-suspended nutrients throughout the water column and contributed to high total phosphorus concentrations in April (72 $\mu\text{g/L}$) and October (88 $\mu\text{g/L}$). Despite the elevated concentrations in the spring and fall, the total phosphorus was relatively low throughout the remaining portion of the year ranging between 33 and 43 $\mu\text{g/L}$. Although these phosphorus concentrations can potentially inhibit recreational use, the phosphorus concentrations have gradually decreased from 2003 to 2005. The variations in phosphorus concentrations were partially due to the amount of precipitation that contributed to changes in watershed loading.

The excess in-lake phosphorus was conducive for the development of algae blooms. In 2005, the Fish Lake average chlorophyll-a concentration was 26 $\mu\text{g/L}$, which is significantly higher than the water quality goal of 12 $\mu\text{g/L}$. Despite the high chlorophyll-a concentrations, the water clarity was not as significantly impaired. The average secchi depth transparency of 1.7 m in 2005 achieved the water clarity goal of 1.2 m for recreational use. The secchi depth transparency achieved the water clarity goal because of a clear water phase that occurred in May and contributed to secchi depth measurements of 3.2 m and 4.6 m. The clear water phase is due to an abundance of zooplankton that reduced the amount of phytoplankton within Fish Lake. The water clarity in Fish Lake did not begin to degrade until June when conditions were more conducive for algae growth. Consequently, the warmer weather conditions resulted in higher chlorophyll-a concentrations that persisted throughout the summer. The secchi depth transparency ranged between 0.75 and 0.9 m during this time period.



Water Quality Data.

Fish Lake, 2005



Historical Water Quality Data.

