

Several lakes within the Elm Creek Watershed area were monitored by other organizations. The City of Maple Grove conducts a lake monitoring program through their Lake Quality Commission. In 1992 they sampled Fish, Weaver and Rice Lakes.

The data from their sampling programs was combined with that of the Elm Creek Watershed Commission and is presented in the appendix. A comparison of the mean values calculated using data for the individual sampling programs and the data combined is also shown. The three monitoring programs were coordinated at the beginning of the season so that the sampling events occurred spaced out over the period from May to October, without much overlap in sampling dates.

Mean values for the three parameters, phosphorus, chlorophyll and transparency were quite comparable between the programs and combined. A table and graphs of the data are included in the appendix. With the combined monitoring program, Weaver Lake was sampled eleven times. It has been shown that a minimum of ten samples per year is necessary for good statistical analysis of a lake (Osgood 1989). This number may be reduced when a lake is sampled multiple years. The combined mean for Weaver Lake was 46.2 ug/L for phosphorus, 9.4 ug/L for chlorophyll, and 8 feet for transparency. A herbicide treatment to control algae occurred on July 1, 1992. For Fish Lake the combined means were 65.6 ug/L, 27.5 ug/L and 4.7 feet. Nine readings were taken at Fish Lake.

At this time Rice Lake is not classified in the Elm Creek Plan. No data were available to characterize the lake. The 1991-1992 monitoring program of the Maple Grove Lake Quality Commission provided this data. Rice Lake is actually an impoundment created by a dam in Elm Creek. It is fairly large (306 acres) but shallow. The maximum depth is 11 feet. Rice Lake has a history of nuisance algal blooms. The data collected in 1991 and 1992 indicate Rice Lake is eutrophic to hypereutrophic. Mean values for phosphorus, chlorophyll and transparency were 218 ug/L, 32 ug/L and 4.1 feet in 1992 based upon 9 sampling events. Phosphorus concentrations in Rice Lake are extremely high. Algal blooms in the lake are limited by other factors such as turbidity, as evidenced by the lower chlorophyll, mean value. Rice Lake also received two herbicide treatments to control algae (July 23 and August 13). The approximate dates of these treatments are shown on the graphs in the appendix. Transparency was fairly low throughout the summer. The mean of 4.1 feet was influenced by an unusually high transparency of 10 feet on October 1. The mean transparency without that value is only 3.3 feet. Based upon the phosphorus concentration measured for Rice Lake, it could exhibit potentially much worse conditions than observed. A mean phosphorus concentration of 218 ug/L could support severe algal blooms and very limited transparencies. Dissolved oxygen and temperature was measured in Rice Lake. Although it is shallow and has stream flow through it, Rice Lake was stratified, with oxygen concentration dropping below 1 mg/L at depths of about 8-10 feet. Surface dissolved oxygen concentrations ranged from 8-10 ug/L.