

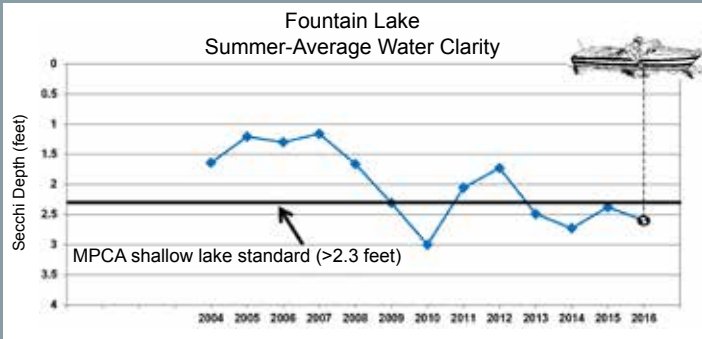
2016 | Fountain Lake Water Monitoring Summary



Photo by Dan Borland

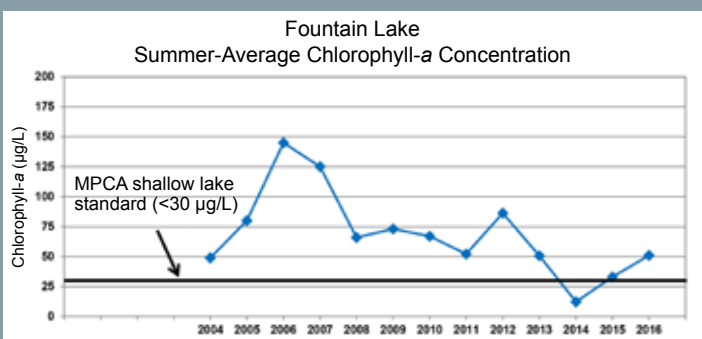
Fountain Lake

Watershed area: 62,700 acres • Lake surface area: 555 acres
 Maximum lake depth: 9.5 feet • Average lake depth: 6.0 feet



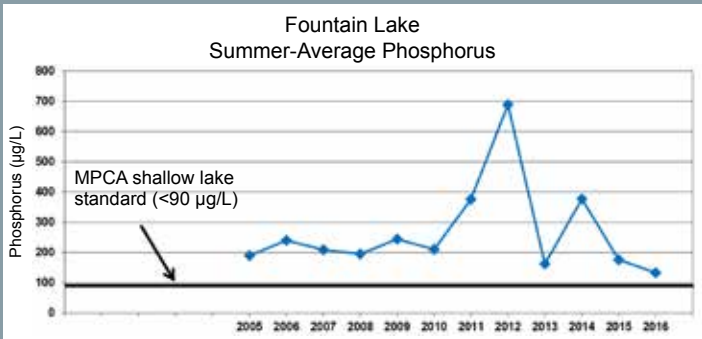
Water Clarity

Water clarity in Fountain Lake has been monitored regularly since 2004. The clarity of the water is measured by lowering a black-and-white disk (Secchi disk) into the water and identifying the depth at which the disk is no longer visible. As shown in the figure, Fountain Lake's summer-average clarity in 2016 met the Minnesota Pollution Control Agency's (MPCA) standard for shallow lakes in southern Minnesota, the fourth year in a row that the clarity standard was met.



Chlorophyll-a

Chlorophyll-a, the main photosynthetic pigment in algae, has been monitored by the SRRWD since 2004. Summer-average chlorophyll-a concentrations in 2016 did not meet the MPCA's standard for shallow lakes in southern Minnesota. Samples collected from Edgewater Bay had lower chlorophyll-a concentrations than Main Bay, particularly after July 1. Data from the two sites are combined to calculate a single summer-average value for the lake.



Phosphorus

Phosphorus is a plant nutrient that stimulates the growth of algae in lake water. Although the 2016 summer-average phosphorus concentration was the lowest recorded since the SRRWD began its monitoring program, it failed to meet the MPCA standard. Sources of phosphorus to Fountain Lake include stormwater runoff from the lake's direct watershed, water from upstream lakes and tributary streams, and the release of phosphorus from lake sediments (see reverse).

A Closer Look: Phosphorus Contributions

The Wedge Creek and Bancroft Creek watersheds were the largest sources of phosphorus to Fountain Lake during the 2016 monitoring season, contributing 32 percent and 30 percent of the phosphorus load, respectively. When it rains, stormwater runoff carries dissolved phosphorus, soil, and the phosphorus attached to soil particles into nearby lakes and streams. Above-average rainfall and runoff during 2016 resulted in large amounts of phosphorus being carried to Fountain Lake.

Internal phosphorus loading is another major phosphorus contributor to Fountain Lake. Like many lakes, Fountain Lake accumulates phosphorus in its bottom sediment from the settling of soil particles and dead organisms. Internal loading occurs as phosphorus in the sediment is reintroduced into the lake water and becomes available again for uptake by floating plants and algae. This complex process can be affected by water temperature, oxygen, pH, wind mixing, and disturbance by bottom-feeding fish such as carp. In many years, internal loading is the largest contributor of phosphorus to Fountain Lake. During 2016, internal loading made up a smaller—but still significant—portion of Fountain Lake's phosphorus load.



Sources of Phosphorus

