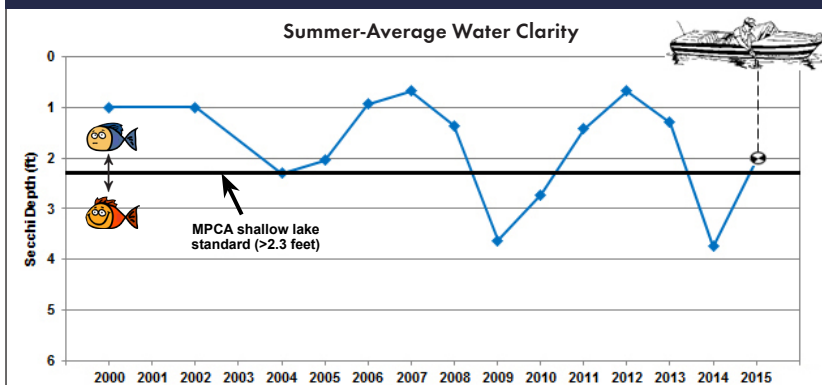


2015 Clean Water Summary: **Albert Lea Lake**

Watershed area: 93,370 acres • Lake surface area: 2,653 acres • Maximum lake depth: 6.0 feet • Average lake depth: 3.5 feet

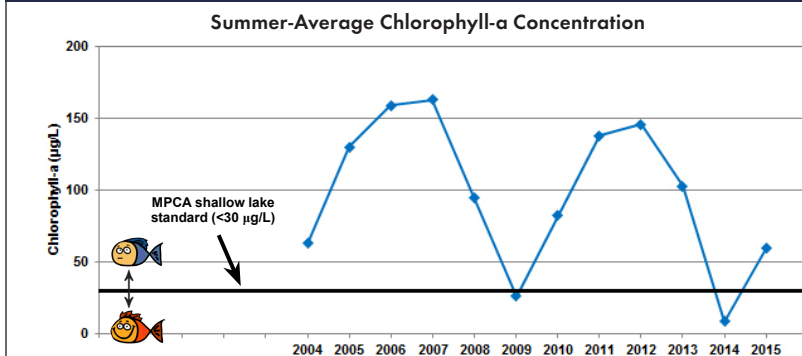
The Shell Rock River Watershed District (District) performs field surveys and collects water samples from Albert Lea Lake throughout the year to guide watershed and lake management activities. Data collected twice monthly from June through September are compared to the Minnesota Pollution Control Agency's shallow lake water quality standards.

Water Quality Indicator: **Water Clarity**



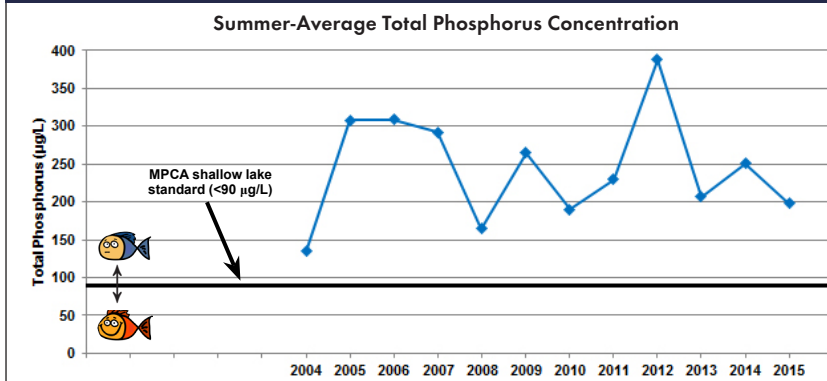
Albert Lea Lake's water clarity has been monitored regularly since 2000. The clarity of the water is measured by lowering a black and white disk (Secchi disk) into the water and identifying the depth at which the disk is no longer visible. The 2015 summer-average clarity of Albert Lea Lake did not meet the Minnesota Pollution Control Agency's (MPCA) clarity standard, after bettering the standard in the previous year.

Water Quality Indicator: **Chlorophyll-a**



The District monitors chlorophyll-a, the main photosynthetic pigment found in algae, to measure the abundance of algae in the lake. Dense populations of algae have a major impact on water clarity. The 2015 summer-average chlorophyll-a concentration in Albert Lea Lake was higher than the MPCA's standard for shallow lakes in southern Minnesota, contributing to the decrease in water clarity compared to 2014.

Water Quality Indicator: **Phosphorus**



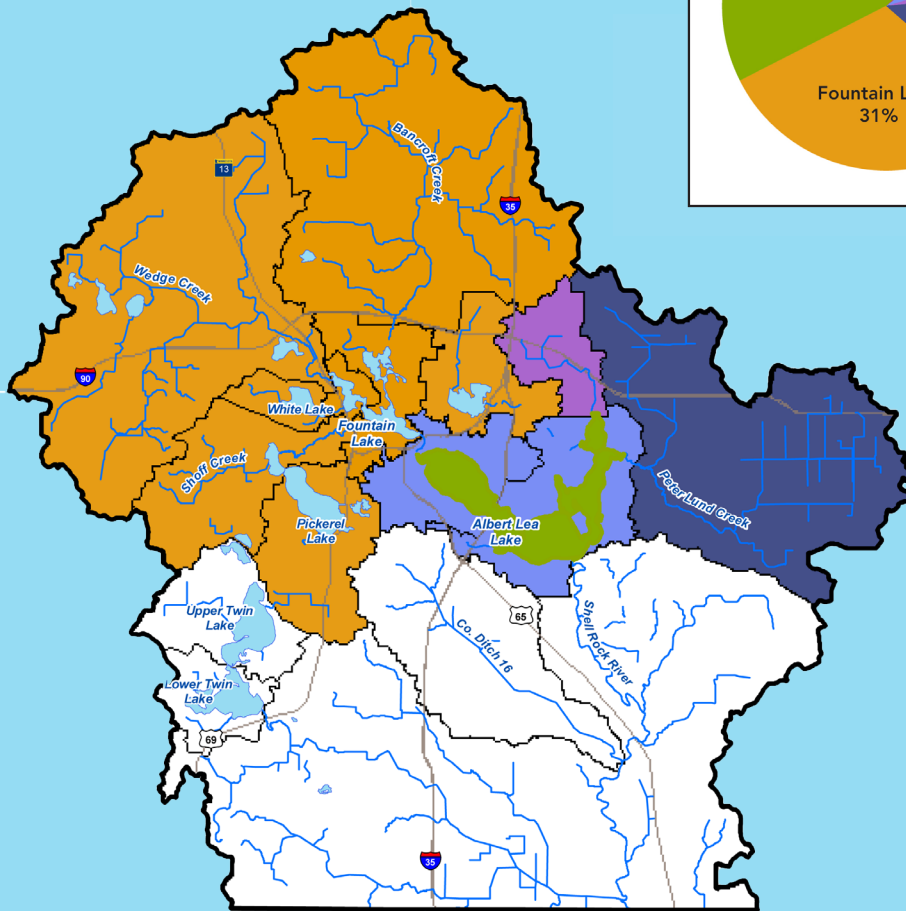
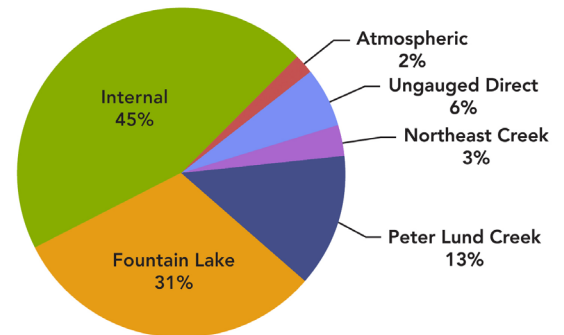
Phosphorus is an essential element for plant life, but when there is too much phosphorus in lake water, it stimulates the growth of algae. The summer-average phosphorus concentration in Albert Lea Lake is typically about two to three times the MPCA's standard, and 2015 was no exception. Sources of phosphorus to the lake (see reverse) include stormwater runoff from its direct watershed and tributary streams, water from Fountain Lake, and the release of phosphorus from lake sediments, a process aggravated by wave action and carp.

Continued on reverse

A Closer Look: Phosphorus Contributions to Albert Lea Lake

Contributions of phosphorus, a nutrient that can degrade water quality by stimulating algal blooms, were estimated based on water quality monitoring data collected by the District from Albert Lea Lake and the upstream lakes and streams. The pie chart at right shows a breakdown of the phosphorus sources to the lake from April through September of 2015. The areas that correspond to each of the sources are shown on the map below.

Sources of Phosphorus



Internal loading was the single largest source (about 45 percent) of phosphorus to Albert Lea Lake in 2015. Lakes accumulate phosphorus in their bottom sediment throughout the year from settling soil particles and dead organisms. Internal loading occurs as phosphorus in the sediment is reintroduced into the lake water and becomes available for uptake by floating plants and algae. Internal phosphorus loading is typically highest during the hot weather of July and August.

During 2015, abundant summer rainfall washed large amounts of phosphorus out of Albert Lea Lake and downstream through the Shell Rock River. The graph at right shows that, according to the District's monitoring, more phosphorus left the lake through its outlet than entered the lake from upstream sources, removing about five tons of phosphorus from the lake.

