

Blackwater Lake Trend Analysis

For detecting trends, a minimum of 8–10 years of data with 4 or more readings per season are recommended. Minimum confidence accepted by the MPCA is 90%. This means that there is a 90% chance that the data are showing a true trend and a 10% chance that the trend is a random result of the data. Only short-term trends can be determined with just a few years of data, because there can be different wet years and dry years, water levels, weather, etc, that affect the water quality naturally.

There is not enough historical data to perform trend analysis for total phosphorus or chlorophyll a on Blackwater Lake. Site 201 had over 8 years of transparency data, which was enough data to perform a long-term trend analysis (Table 8). The data was analyzed using the Mann Kendall Trend Analysis.

Table 8. Trend analysis for Blackwater Lake.

Lake Site	Parameter	Date Range	Trend	Probability
202	Total Phosphorus	2007–2011	No trend	--
202	Chlorophyll a	2007–2011	No trend	--
201	Transparency	1988–2011	Improving	90%

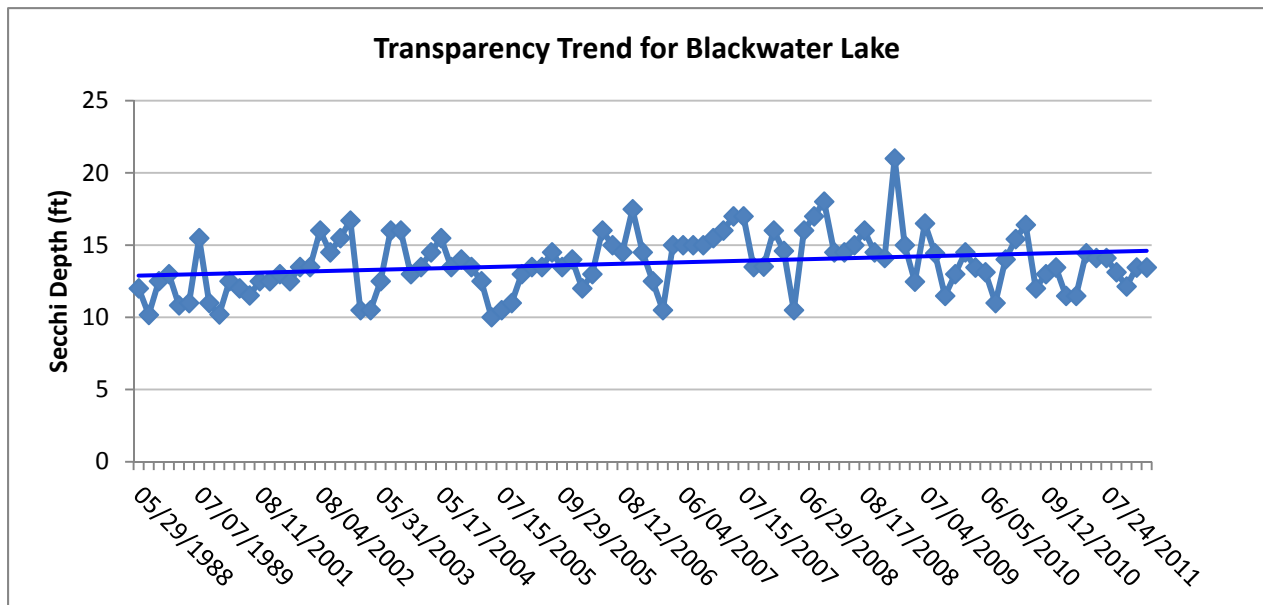


Figure 11. Transparency (ft) trend for site 202 from 1988-2011.

Blackwater Lake shows a significant improving trend in transparency from 1988-2011 (Table 8, Figure 11), and no trend from 2000-2011. That means that over the long-term, the transparency is improving, but in the short term it is stable. Transparency monitoring should continue so that this trend can be tracked in future years.