



## The Buckeye Lake Aeration Project

**Overview:** The goal of the Buckeye Lake Aeration Project is to install 24 aeration systems in the next two to three years around Buckeye Lake in canals, coves, bays and other areas where there is little to no water movement and where blue-green algae blooms have been observed.

**Purpose:** The purpose of the project is to improve water quality at Buckeye Lake for swimming, boating and fishing. Buckeye Lake is a shallow man-made lake with an average depth of 6 feet. Every summer our water temperatures are in the 80's by May typically until September. The high-water temperature combined with stagnant waterways, along with the phosphorus-laden nutrients in the lake sediment that have been collecting for over 100 years, make a perfect environment for algae blooms.

After years of research by Buckeye Lake for Tomorrow (BLT), we have discovered that Home Owner Associations (HOA's) in Grand Lake St. Mary's in Northwest Ohio have had success improving their water quality by using aeration in their canals. We observed canals that were carpeted in algae cleared in a month after aeration systems were installed. Adding oxygen through aeration stopped the growth of blue-green algae and made the water clearer in the canals

A secondary benefit observed at Grand Lake St. Mary's was that the aeration systems made the canals deeper and fishing improved. The bubbling aeration systems helped the silt in the lake bottom to decompose by helping the good bacteria colonies needed for decomposition, thrive and grow. Decomposition does not take place in Buckeye Lake without the good bacteria and the oxygen needed to allow it. As a result, organic matter such as leaves, grass, dead fish etc collects on the bottom producing more silt. Buckeye Lake has fish kills every summer due to the low oxygen levels. In 2020, about 5,000 fish died because of low oxygen levels on the east end of the lake around Lieb's Island. We believe with enough systems in place we could stop the fish kills caused by lack of oxygen, which would further improve our water quality.

**Next Steps:** BLT has been working to educate businesses, HOA's and residents on the advantages of using aeration systems. Pilot systems installed in the Millersport canal, the Copper Penny canal and at the Buckeye Lake Yacht Club have significantly improved water quality. BLT's ongoing water testing program has scientifically validated the water quality improvements at all three pilot system sites.

Market research gathered by the Buckeye Lake Regional Corporation (BLRC) in 2021 confirmed that water quality projects should be the top priority. BLT is working with the BLRC in 2022 to raise funding for water quality initiatives, including funding to subsidize aeration system projects. Donate now at <https://blrfoundation.org/donate.html>. The cost of the aeration system equipment ranges from \$3,000 to \$15,000, depending upon the length of the bubble tubing and size of the air compressor. Annual operating and maintenance costs range from \$360 to \$600 for the electricity and replacement air filters. Please contact Matt Baumann on (513) 509-7164 if you would like more information.