

Project: Fawn Lake Phase II Implementation Project - Lake Aeration
Location: Hawley, Pike County, Pennsylvania
Client: Fawn Lake Forest Association

Aqua Link, Inc. installed a large-scale destratifying aeration system in Fawn Lake in 1998. Fawn Lake, a 147-acre impoundment, is located in Pike County, Pennsylvania. The aeration system was designed using lake water quality and morphological data collected as part of the Phase I Diagnostic - Feasibility Study.

The aeration system was designed to destratify 100 acres of anoxic, partially-mixed waters in the lake's hypolimnion during the summer months. The primary goals of installing a destratifying aeration system in Fawn Lake were twofold: (1) to increase the availability of deep water habitat for both forage and gamefish, and (2) to reduce in-lake phosphorus concentrations through iron-phosphate precipitation. Both goals directly correspond to increasing the dissolved oxygen concentrations in the lake's hypolimnion. Lake aeration is one of several recommendations that were offered in the comprehensive lake and watershed management plan. The Phase I Study report also recommends the implementation of additional in-lake and watershed restoration alternatives to further improve and protect the water quality in Fawn Lake.

The aeration system in Fawn Lake is powered by a 50 h.p. air compressor, which uses three phase electric power. The air compressor was placed 500 feet upslope of the lake along an improved roadway. In order to supply air to the lake, the primary air line placed was in a trench that extends from the compressor house to air flow regulator house. Within the air flow regulator house, the primary air line is connected to five separate air flow regulators. Each air flow regulator is in turn connected to an individual in-lake air line. When combined, the total length of all five installed in-lake air lines is nearly 8,500 linear feet.



The air lines were constructed to delivery diffused air along their entire length and to remain suspended 9 inches off the lake bottom during system operation. Also, the air lines were constructed to be raised to the lake's surface by forcing air into installed buoyancy lines via the air flow regulators. Therefore, routine maintenance can easily be performed on an individual air line by simply raising it to lake's surface. Photograph shows the installation of the in-lake air line with attached buoyancy line and anchoring blocks.