

Trout Pond Regeneration with Solar Aeration System

A case was presented to Canadianpond.ca where a lake had high organic matter input, high dissolved organic carbon and low dissolved oxygen concentrations. The goal of managing the pond was to improve water quality conditions for the trout population in the lake.

Issue

Upon first sampling, it was found that the average max depth where dissolved oxygen concentrations were viable for trout was 1.8 m (6 ft) whereas the average depth was around 4 m (13 ft). Because trout need relatively cold water to survive, the upper layers of the pond might pass the trout's temperature threshold for survival in summer. Normally, trout move into the deeper water during these times, however, lack of oxygen could leave the trout with a very small habitat range and could easily lead to extirpation of the population.

Treatment

Canadianpond.ca was limited in our options due to the lack of electricity at the site. Our solution was to add the a solar powered [bottom aeration system](#) fitted with Canadianpond.ca's [Bubble Tubing™](#). The system was installed in the early summer of 2014 and follow up sampling was done later in the summer and again in 2015.

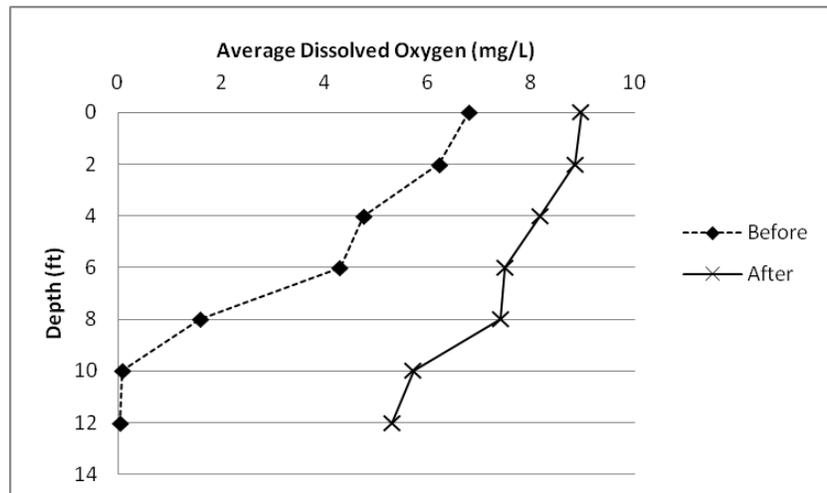


Figure 1. Dissolved oxygen concentrations throughout the water column before and after the installation of a solar aeration system fitted with Bubble Tubing™.

Results

Dissolved oxygen significantly

improved from before and after treatment in all sampled stations. The greatest improvement was seen at the deepest points with the average dissolved oxygen going from essentially 0 mg/L to around 5 mg/L which is above the DO concentration needed for trout survival. The treatment expanded the habitat of the trout by 55% to include the entire pond. Canadianpond.ca considers this project to have met all the goals defined meaning that this project has been a complete success.