



# SEDIMENT REDUCTION

LAKE HARMONY, POCONOS, PA

Biotechnology solves lake's sediment build up problems.



**SIS.bio**

LEADING THE WAY TO RENEWABLE WATER





# INTRODUCTION & PROBLEM

Lake Harmony is a 140 acre recreational lake in the Poconos in Pennsylvania. For many years homeowners complained of excessive muck around their docks and in several areas docks were becoming surrounded by lily pads making it difficult if not impossible for boats to get out from their docks onto the lake.

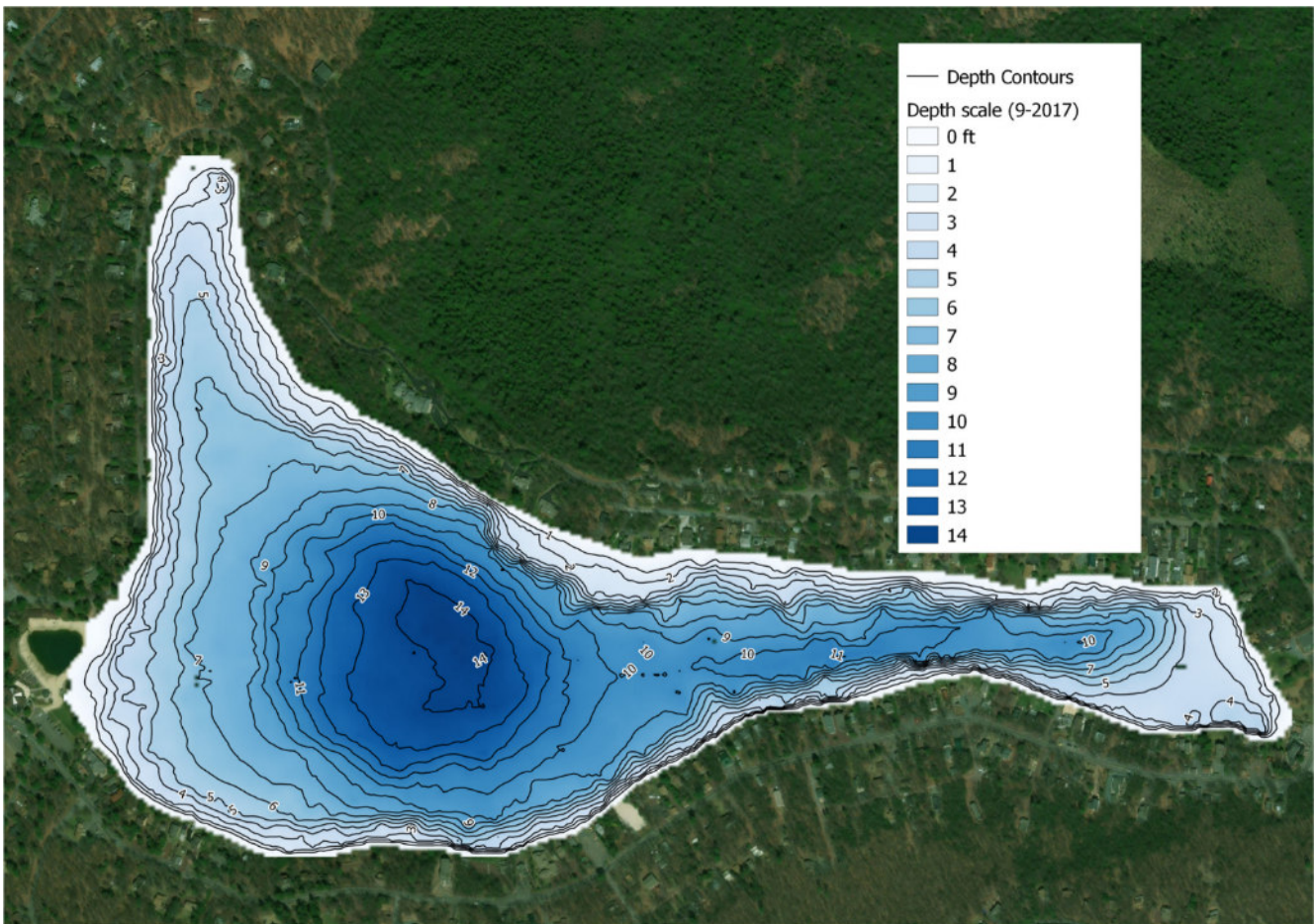
In 2017 concern with the reduction in depth of the lake and the increasing invasiveness of lily pads became so bad that the decision was taken to implement an effective solution that would not only improve water quality, but also digest the accumulated sediment in order to restore depth to the lake and deprive the invasive lily pads of the nutrient-rich rooting bed that it provides.

The depth profile in October 2017 shown below revealed that

- the total volume of the water in the lake was 879.81 acre feet,
- the average depth was 7.4 feet and
- the deepest point in the lake was 14.14 feet deep.

The deepest contour in the eastern arm of the lake was 10 feet.

The Solution Design called for the installation of 24 RADOR units and an aggressive bioaugmentation program to digest the accumulating sediment. The solution was commissioned at the end of June 2018.



LAKE HARMONY DEPTH PROFILE  
OCTOBER 2017

# DEPTH PROFILE & SEDIMENT DIGESTION

The depth profile in October 2019 showed that

- the total volume of the water in the lake was 962.59 acre feet,
- the average depth was now 8.1 feet and
- the deepest point in the lake was 15.33 feet deep.

The increase in water volume is the volume of sediment digested, and that is 82.88 acre feet.

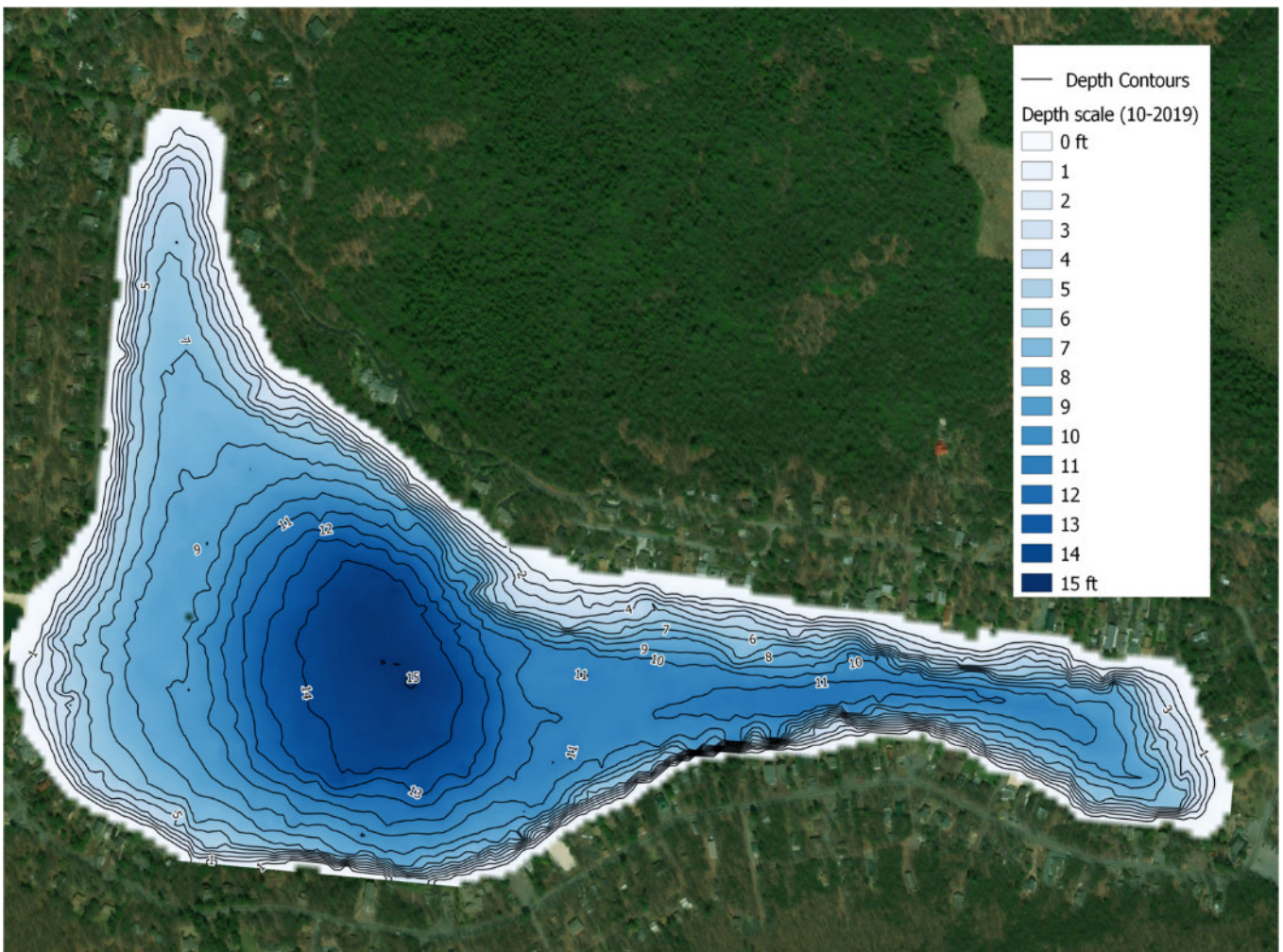
This is equivalent to 133,713 cubic yards of sediment reduction or an increase of 27 million gallons of water from 2017 through 2019. It would take 6 700 tri-axle dump trucks to remove this

sediment volume from the lake.

A new 15 feet deep contour now dominates the central bowl of the lake.

A new 11 feet deep contour now runs down the eastern arm of the lake.

The 6 feet deep contour which barely reached into the northern cove in 2017 has pushed up significantly and this has coincided with reduction in the lily pad cover in that cove.



LAKE HARMONY DEPTH PROFILE  
OCTOBER 2019



## DEPTH PROFILE & SEDIMENT DIGESTION

In the picture below, the 6 feet contour has been highlighted

- blue as it was in October 2017
- yellow as it was in October 2019

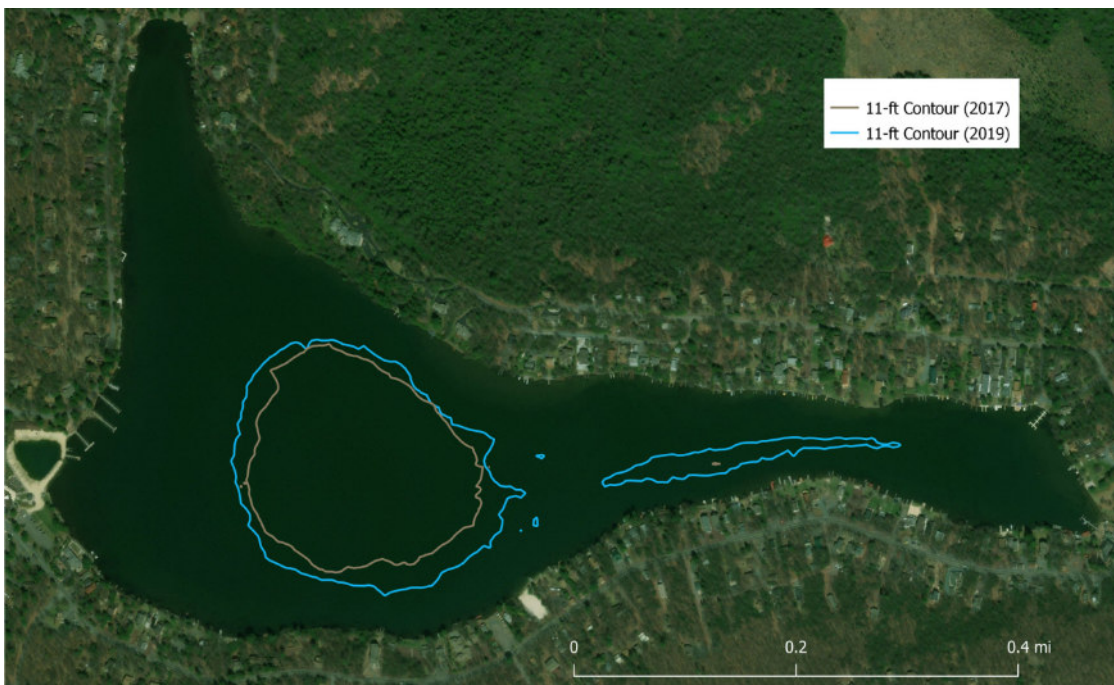
The area 6 feet deep or more has increased by 12.78 acres.



In the picture below, the 11 feet contour has been highlighted

- green as it was in October 2017
- blue as it was in October 2019

The area 11 feet deep or more has increased by 8.62 acres.



LAKE HARMONY DEPTH PROFILE  
OCTOBER 2019

## A SUCCESSFUL PROJECT

As would be expected, water quality has improved and so has the fishing since the implementation of SIS.bio's biotechnology solution in late June 2018.

Annual bathymetric surveys provide quantitative verification that the Lake Management Association is ensuring that its stakeholders have got value for money with their investment in the solution.

The surveys also allow re-optimization of the positioning of the RADOR units to obtain maximum advantage from the increase in lake depth achieved.

"My wife dropped a stainless clip off the dock three years ago and we hadn't seen sign of it since.

Within 3 months of commissioning the system, so much muck and organic sediment had been digested that one day, there it was, sparkling in the sunlight through the clear water.

We're seeing stuff exposed on the bottom of Lake Harmony that we've not seen before. Everyone is excited about the increase in water depth so far."

Pete Ginopolas, Lake Harmony, PA



WATER SPORTS AT LAKE HARMONY  
SUMMER 2019





In the 50 years since we were founded in 1970, our professional engineering team has developed deep expertise and rich experience in producing effective solution designs for aeration and oxygenation of water bodies of all kinds. We have an enviable track record of success, having completed projects across 46 States in the USA from Florida to Minnesota, Pennsylvania to Colorado, New York to California, and in over 20 countries internationally. We provide full survey, assessment, installation, maintenance and operational testing and reporting services throughout the USA.

For more information, please visit our website: [Clean-Flo.com](http://Clean-Flo.com)

# LEADING THE WAY TO RENEWABLE WATER

SIS.bio is a global leader in biotechnology solutions for water quality management. Our Biotechnology Solutions Platform ensures sustainable prevention of toxic cyanobacteria HABs in eutrophic lakes, dams and reservoirs of all sizes and depths. It also provides solutions to wastewater treatment of all kinds, aquaculture, and river remediation. We have delivered solutions in a range of climate conditions – from temperate in Canada, to tropical in Puerto Rico and from coastal Korea to over 2,500m altitude in Peru, throughout the world in Europe, Africa, Asia and Australia. Our clients include government agencies at national, state and municipal level, together with water management utilities.

For more information, please visit our website: [SIS.bio](http://SIS.bio)

