

**MUCKBIOTICS BIO-
DREDGING CASE STUDY FOR
HOBSON
CREEK IN
NAPERVILLE,
ILLIONIS**



Introduction: A harsh swing in temperatures always provides difficulty when creating a lake management plan while in the Midwest. Hobson Creek pond, of Naperville Illinois, measures 1.09 surface acres, with an average depth of 4 feet. Homeowners and members of the community were extremely concerned with out of control plant growth and an odor issue surrounding the water body. Due to high nutrient deposition from surrounding fertilization and organic deposition, an odor would surround the pond detouring public from coming to the area, as well as fuel excess levels of plant growth. McCloud Aquatics was more than familiar with the product to use for a proactive nutrient management plan. We created the objectives of reducing muck accumulation and plant growth rates, and decided to implement the use of the new Muckbiotics of NaturalLakes Biosciences. With no underlying data we decided to measure pre-application so we could evaluate which application rate was necessary, as well as compare with post-treatment data. With multiple aeration systems we expected to see great results on this water body, and decided a muck maintenance and reduction dosage of 25lbs per surface acre was necessary at a one-month reapplication rate.

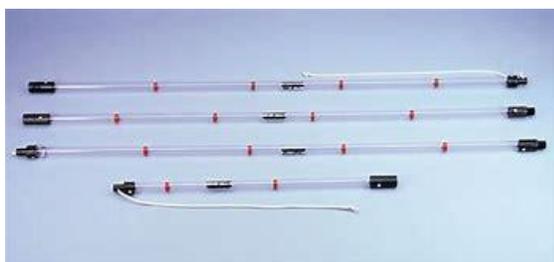


Figure 1

Objective: Our goal with this study was to determine how much muck was consumed using this product throughout one growing season. By contrasting measurements of muck depth in early April and Late October we can determine how much organic matter was consumed in that time.

Methods and Materials: Sediment Measuring: Pre-treatment muck measurements were collected on 5/6/2020 using a 15-foot graduated tube called a Sludge Judge. See **Figure 1**. Measurements were collected as follows: The tube is pushed with decent force to ensure the measuring device reaches the bottom of the organic layer. Tube was removed so that a measurement of sediment depth could be recorded in inches. 5 measurements were taken at each location and an average was calculated for 5 site locations. Post-treatment measurements were collected using the same procedure at approximately the same locations 9/16/2020. **Figure 2** is a graph showing the comparison between pre-treatment and post-treatment

measurements for each location. Each number is an average of 5 separate measurements collected in the direct area of the measuring location. Below

Figure 3 is a map of the pond showing each measuring location. At each location, 5 pre-treatment and 5 post-treatment measurements were an average was calculated and recorded for analysis.

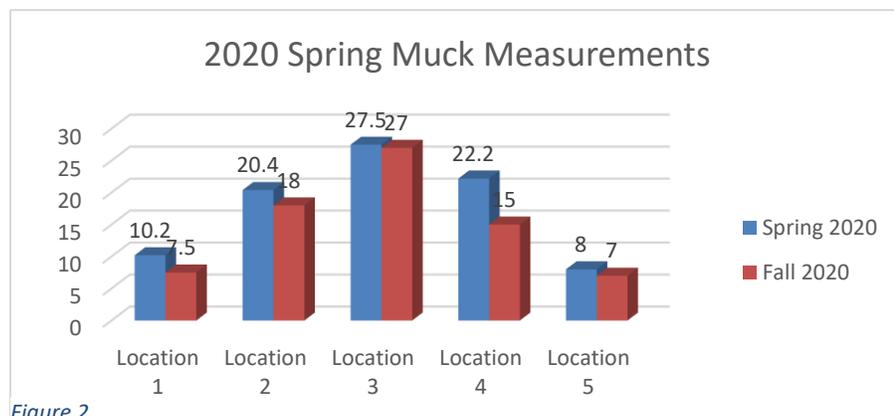


Figure 2

Figure 3 Hobson Creek HOA Naperville, Illinois



Application Method: Muckbiotics was applied at a 25lbs per surface acre once a month for 5 months (May-September) using the provided scoop to get total coverage throughout the water body. Each application was 27.25Lbs evenly spread across the bottom of the pond.

Results: By comparing post-treatment measurements to pre-treatment measurements we saw a decrease of overall muck depth at all locations. In our analysis, we found an average reduction of 2.76 inches in muck depth for all measuring locations. With some locations experiencing larger amount of consumption than others, overall muck depth was reduced by 16% from pre-treatment measurements for this water body. One final note was that we saw a significant change in muck composition. Each location showed change from a firm packed composition to a much looser density when measurements were taken.

Discussion: We have determined the results of this case study to be very effective; with a reduction of muck levels at every site location, and a general change of sediment composition it is easy to see both qualitative and quantitative differences in the data. Due to the smaller size of the pond we were able to get full coverage with Muckbiotics applications, effectively establishing a healthy probiotic population throughout the water body. One question contemplated during data analysis was the uneven distribution of muck degradation. We found that sites close and far from aeration units experienced different levels of muck degradation. We plan to continue monitoring muck depth on this water body using Muckbiotics using this method in order to further explore this phenomenon. Data collected in this study will also be used as a baseline for future analysis of muck degradation using Muckbiotics. Our overall assessment of this study is that Muckbiotics showed effective results in both goals established pre-treatment. Muck depth was reduced by 16% overall and plant growth was down dramatically. The Homeowners were thrilled with the results throughout the season and will be following the same treatment plan next year.