



*The right solution for your pond and lake.*

## ***Muck reduction with the use of MD Pellets***

***By:***

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### **BACKGROUND:**

Rollins Aquatic Solutions was contracted in the Spring of 2017 for weed and algae management at a private lake association in North Central Illinois. The Association has 600 plus property owners surrounding 3 man-made lakes. The lakes are used for primarily recreational use including fishing, boating and swimming. Besides weed and algae control the Association was also looking into dredging some areas of one of the lakes.

The same areas experience severe filamentous algae blooms within shallow channels. Due to the excess Algae blooms there has been a reduction in water depth and increase in organic sediment over the years. These conditions have made boat access difficult and recreation activities less enjoyable. We recommended looking into the organic sediment issue as a cause for the nuisance algae blooms. We proposed the use of Naturalake Bioscience's MD Pellets to not only reduce the organic sediment but also reduce nutrient load within the sediment.

## OBJECTIVE:

- *To reduce overall organic sediment within treatment areas with the use of MD Pellets.*
- *Reduce nutrient availability in organic sediment to minimize Algae blooms throughout summer.*

## METHODS:

### Pre-Treatment Data:

We started out the 2017 season by collecting data on two smaller test sites. We used a 10' two-inch PVC pipe that was marked off every inch. We GPS marked each sample location so that testing would continue in the same spot every time. We placed the pipe into the water column vertically until we felt the start of the soft bottom, we then pressed further until we hit hard bottom. Once we hit hard bottom, we noted the depth of soft sediment present for our tracking report. We were able to show the Association that organic sediment build-up was a real issue in these two test sites. The worst area having on average 40" of muck. We continued these surveys in the treatment areas every spring and fall of each season. **Figure 1** shows a map for the muck depths present in the Spring of 2017 for Channel B.



Figure 1. Pre-Treatment of Muck Depths Spring 2017 in Channel B.

## Treatment:

We developed a bacteria program to apply 30 pounds of MD Pellets/Acre per month over the summer. (5 Treatments) During the applications we used a granular spreader to ensure even coverage of the product. At the end of the season we measured the depth of organic muck again. We observed a reduction of 3.12 inches in Channel A and 1.92 inches in Channel B during the first year. **Figure 2** shows a map for the post treatment of Fall 2019 muck depths in Channel B.

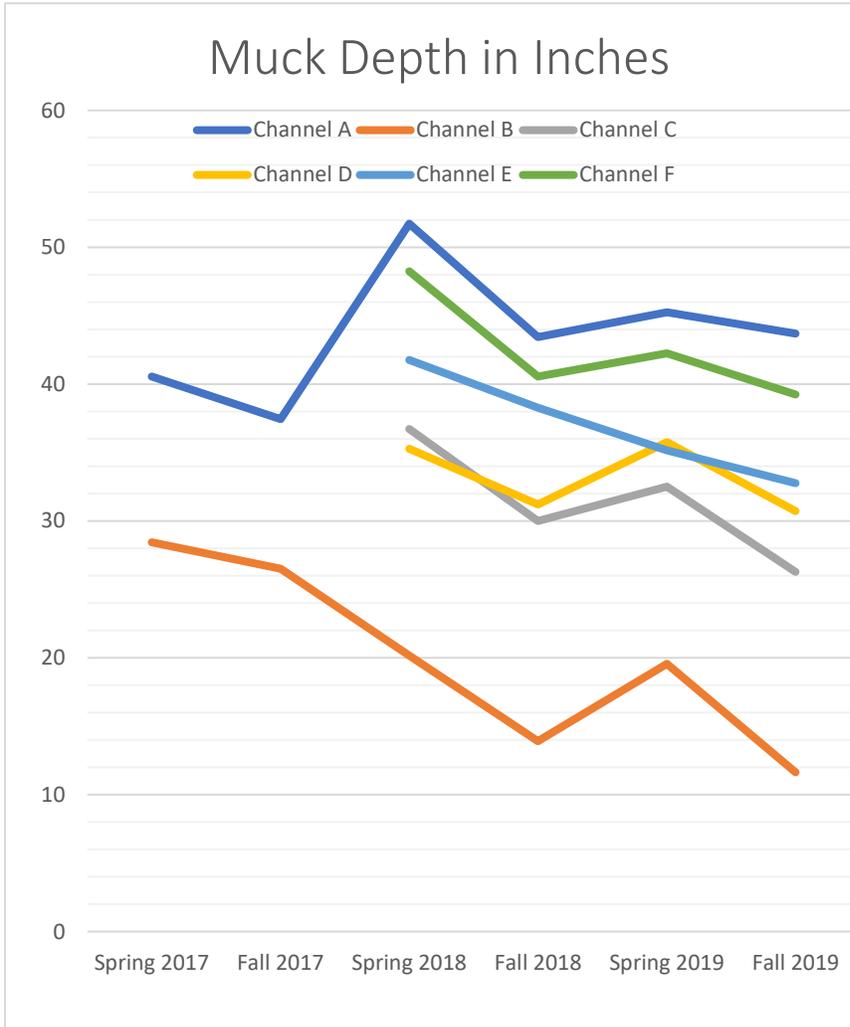


Figure 2 Post-Treatment of Muck depths Fall 2019 in Channel B.

Given the positive results of the first year of the program, the Association decided to increase the treatment area from 1.56

Acres to 5.3 Acres for the next couple years. Below in **figure 3** is a chart that documents organic sediment tracking from the first year to last season for all treatment areas on average.

**Figure 3. Organic sediment tracking from 2017-2019**



## Results:

Through the 3-year Bacteria program we noted a continued reduction of organic sediment at the end of each summer. We also noticed a decrease in the amount of nuisance algae blooms and improvement to water quality. Over the course of the winter it was interesting to track the influx of organics into the water system. Proving that the use of MD Pellets and beneficial bacteria are needed in these areas to reduce organic build-up. **Figure 4** shows what a typical algae bloom looked like before the bacteria program. **Figure 5** shows how the same channel looks after bacteria program has been established.



*Figure 4. Algae bloom in Channel A before MD Pellets Program.*



*Figure 5. Channel A after MD Pellets Program.*

## Conclusion:

The results prove that MD Pellets are a viable alternative to dredging. The association has been impressed with the results from the program and plan to continue moving forward with it. They have observed more water depth and improved clarity. The management plan continues to reduce the amount of soft sediment found within the treatment areas. They are looking to expand the current program to a larger treatment area going into 2020.

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