

# Organic Muck Depth Reduction Using MuckBiotics

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## PROJECT OVERVIEW

Organic muck build-up from sources like fertilizer runoff and grass clippings can cause serious problems to stormwater systems. Removal can be extremely costly, and in some cases, access does not allow the necessary machinery entry to the location that needs to be addressed. Using MuckBiotics may be a more cost effective and environmentally friendly option for reducing the buildup of muck and organic materials in stormwater lakes and ponds.



Figure 1: Muck depth measurement process.

## METHODS



Figure 2: Muck in sampling tube.

We used a soil core sampling tool to measure the depth of the muck each month in three sampling locations over a period of 7 months. We sampled from two locations treated with MuckBiotics and one control site. Each sample was taken from the exact same location in each lake every month. During the sampling period we treated both treatment sites with 50 lbs. of MuckBiotics per surface acre per month using a Vortex granular applicator. When the samples were taken, they were allowed to rest vertically for five minutes to allow the disturbed sludge to settle into a position in which we could accurately measure the depth of the layer on the bottom of the pond.

## RESULTS

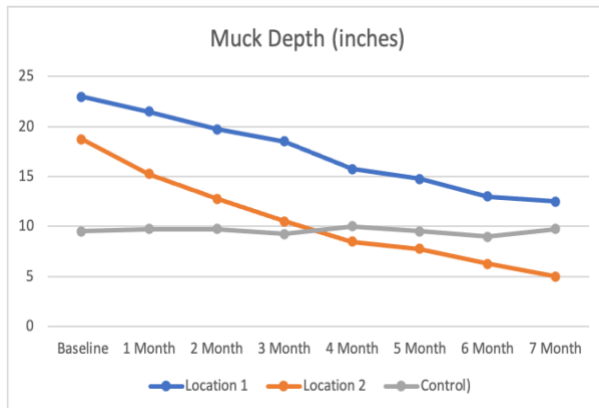


Figure 3: Muck Depth

Week #	Location 1 (0.32 ac)	Location 2 (0.83 ac)	Control (0.85 ac)
Baseline	23	18.75	9.5
1 Month	21.5	15.25	9.75
2 Month	19.75	12.75	9.75
3 Month	18.5	10.5	9.25
4 Month	15.75	8.5	10
5 Month	14.75	7.75	9.5
6 Month	13	6.25	9
7 Month	12.5	5	9.75
<b>Total Reduction</b>	<b>10.5</b>	<b>13.75</b>	<b>N/A</b>

Figure 4: Muck Depth Measurements

Both locations saw a reduction in the depth of their muck layer by at least 10 inches over the course of just one treatment season. Aeration was present in both treatment locations, but not in the control. Only a surface aerator was present in location 1, while location 2 had both a surface aerator as well as a diffused aeration system. As is shown in both figure 3 and figure 4, not only was the depth of muck drastically reduced in both locations, but the effectiveness of the MuckBiotics was increased with the presence of additional aeration. The levels of reduction varied month to month, but this could have been due to storm events and differing levels of additional nutrient load on the treatment sites from things like fertilizer runoff.

## PROJECT SUMMARY



Before

After

The drastic reduction in the levels of organic muck in the treatment locations shows treatment with MuckBiotics to be a viable alternative to dewatering and de-mucking a pond. Large piles of sediment and organics that have not biodegraded would still need to be removed mechanically to restore a pond to original condition, but the sludge that accumulates as sources of outside organic material continue to overload the pond with nutrients can be reduced to manageable levels using MuckBiotics tablets.