GLA Weed/Algae/Sediment Control Committee Report
(December 16th, 2019 GLA Board Meeting)

A combined Weed/Algae/Sediment Control and Fish Committee Meeting was held on 11/6/19 to review the 2019 weed/algae/sediment control program results and to discuss how best to move forward in 2020 for maintaining our lakes. Chris Cartwright of Rollin's Aquatic Solutions was present to review the 2019 program results and his recommendations for the 2020 season.

Since 2019 was the 4th year that Rollin's services were contracted, the decision was made to prepare a "Request For Proposal" that was sent out to two additional companies who perform these types of services. On 11/18/19, a detailed 31 Page "Request For Proposal" was mailed to JadEco Consulting & Management Services and McCloud Aquatics Services to provide us with a proposal for weed/algae/sediment control services for the 2020 season. Once these proposals are returned to GLA (approximately by mid-December time frame), the Weed/Algae/Sediment Control Committee and Fish Committee will meet to review all three proposals and will present its recommendation for providing weed/algae/sediment control services for the 2020 season to the GLA Board at the January 2020 Board Meeting.

Also, included in this month's committee report is the Annual 2019 Bacteria Program Report that was submitted by Chris Cartwright of Rollins. (see attached)

Respectfully Submitted,

Joe Turk
Weed/Algae/Sediment Control Committee Chairperson

2019 Bacteria Program

The 2019 season was the start of the third consecutive year of using beneficial bacteria to help minimize organic sediment within specified areas of Goose lake. This association decided to stay with the same treatment area as last year. It was the same total of 5.3 acres. The area included Bluegill Ct. finger, Perch channel, Bass channel, Walleye channel, Catfish channel and the full length of Muskie trail. After a successful year last year, we were hoping to stay with the positive trend.

We kept the dosage rates the same this year at 30 pounds of MD pellets per acre. We saw good results last season at this new higher rate. We were affected by some weather early this season and heavy algae blooms that delayed some of our schedule. Below are the treatment dates and individual results for each area.

Treatment Dates:

5/29/19

7/10/19

8/7/19

9/4/19

10/3/19

Bluegill Ct Channel:

This season would mark the third year in a row that Bluegill Ct Channel has had bacteria applied to it. This channel gets a lot of Algae and Duckweed growth throughout the season. The typical wind comes out of the west which ends up moving a lot of debris into this area. It is also surrounded by trees that drop their leaves in the fall. These issues both add to the organic sediment found in the bottom of this channel. At the beginning of the spring we measured the muck level at an average of 3.77 feet. Given the depths at the end of the fall in 2018 were 3.62 feet, that shows that there was an average increase of 1.8 inches over the winter in this channel.

Throughout the summer I noted less algae growth than experienced in previous seasons. It was mainly minor algae growth until July/August when there was a heavy algae bloom, but it was quickly taken care of. Water clarity seemed to stay consistently clear other than after rain events, which were frequent this summer. In the fall I measured the muck level at an average of 3.64 feet. This shows an average reduction of 1.56 inches over the course of the season. Throughout the 3 seasons we have reduced the muck level by a total of 13”.

Perch Channel:

This channel is in its second season with the use of bacteria. The first season we were able to reduce the amount of organic sediment by 6.72” from the beginning of the spring to the fall. Given the fact that this channel is on the east side of the finger channels it also gets a lot of debris blown its way and experiences moderate to heavy algae growth. At the beginning of the spring we measured the muck level at an average of 2.71 feet That shows an increase of muck over the winter of 2.52”.

By the end of the fall we measured the muck level again. The average depth of muck was 2.19 feet. This shows a reduction over the season of 6.24”. This channel has really responded well to the use of bacteria. We have been able to reduce the muck level by roughly 13 inches over the past two seasons.

Bass Channel:

This channel is also in its second season with the use of bacteria. The first season we noted a reduction of 4.08”. This channel still doesn’t experience as much nuisance growth as the above-mentioned channels do. It is still surrounded by trees and houses, so leaf debris is a concern. At the beginning of the spring this year we measured the muck level at an average of 2.98 feet. That shows an increase of muck by 4.56” over the winter.

By the end of the fall we measured the muck levels again. The average depth of the channel was 2.56 feet. This shows an average reduction of 5.04”. Over the course of the two seasons we have reduced the organic muck by a total of 9.12”.

Walleye Channel:

This channel is also on its second year with the use of bacteria. The first season we noted a reduction of 3.48”. At the beginning of the spring we measured the muck at 2.93 feet. Compared to the previous fall, that shows a continued reduction of 3.12” over the winter.

In the fall we measured the muck again. The average muck levels were at 2.73 feet. This shows a reduction over the season of 2.4 “. Over the course of the two seasons we have noted a total reduction of 5.88”.

Catfish Channel:

This is the last of the finger channels that is on its second year of the bacteria program. The first season we noted a reduction of 7.68”, which was the most reduction we have gotten in one season on the finger channels. This area experienced a couple large algae blooms over the season that was taken care of via treatments. Just like last year the water clarity on the west side of the bridge seemed to be not as good as the east side. I did notice an improvement this season with the continued use of the bacteria. At the beginning of the spring I measured the muck levels at an average of 3.52 feet. This shows an increase of 1.68” over the winter.

By the end of the fall we measured the muck depth again. The average muck level was at 3.27 feet within the channel. This comes out to be a reduction of roughly 3 inches. Over the course of the 2 seasons we have reduced muck levels by 10.68”.

Muskie Trail:

Muskie trail is on its third season of the bacteria program. The first season we did not apply bacteria to the entire channel. It was only applied to the west side of the channel. 2018 was the first year that we applied bacteria to the entire length of the channel. Given the results from last year, we were able to see a reduction of 6.24” throughout the season. It is very important in this channel especially, to keep the amount of organic sediment to a minimum. This channel is on average less than 3 to 4 feet of water depth. There are quite a few houses on this channel that have boats and need adequate water depths to access their property.

In the spring of this season we measured the muck at an average of 1.63 feet. This shows an increase of 5.64” over the winter. By the end of the fall we measured the muck level again. The average muck level at that time was 0.97 feet. This is a reduction of 7.92” over the course of the 2019 season. We have been able to reduce the amount of organic sediment in this channel by a total of 14.16” just over the course of the last 2 seasons. We are seeing great results in this channel and the nuisance growth was much less this season.

Conclusion:

We were able to document more positive results this season with the bacteria program. Some areas slowed down some and others picked up more results. Overall, we were able to see reductions at the low end of 1.56” up to the high end of 7.92”. Some of the slow down in reduction is expected.

The first couple seasons the bacteria works extremely fast at breaking down the easiest consumable organics. So long as each year we are seeing positive results we know the program is working like it should. Besides the muck reduction I have noticed other improvements to the areas where the bacteria is applied. This year the water clarity stayed consistently better

throughout the Finger channels and Muskie Trail. We also did not see as much nuisance growth present, especially in Muskie trail.

For the 2020 season I recommend two different options for the treatment areas. The first option is the same area that has been on the program the past 2 seasons at a total of 5.3 acres. The second option is adding the east/west main channel of the finger channels to the current treatment area. This would bring the acreage total up to 8.5 acres. It is important to keep at minimum the 5.3-acre treatment area. Otherwise the organic sediment would start to accumulate again and past few season gains would be lost.

It is nice to start seeing the data accumulate from the beginning of the bacteria program in 2017. We can track our results and see the trend that we are on for each area. Even though we are seeing reductions each season with the use of bacteria, we are also tracking the influx of more organic sediment that is coming into the water body each winter. We are still on the right path with the use of the MD Pellets and the results below show that.

The chart below shows the average depth of sediment/muck that was measured in each channel just prior to starting the MD Pellet treatments for that year and what the average depth of sediment/much was approximately 1 month after the last treatment. All depth measurements were taken from specific GPS coordinates to ensure that the measurements were being taken from the same general location (+/- 3 feet).

Year to date results since treatments with MD Pellets began:

	Spring17’	Fall17’	Spring18’	Fall18’	Spring19’	Fall19’
Bluegill Ct Channel	3.38’	3.12’	4.31’	3.62’	3.77’	3.64’
Perch Channel	N/A	N/A	3.06’	2.5’	2.71’	2.19’
Bass Channel	N/A	N/A	2.94’	2.6’	2.98’	2.56’
Walleye Cannel	N/A	N/A	3.48’	3.19’	2.93’	2.73’
Catfish Channel	N/A	N/A	4.02’	3.38’	3.52’	3.27’
Muskie Trail	2.37’	2.21’	1.68’	1.16’	1.63’	.97’

Attached is a copy of an aerial view of the channel between Goose Lake Road and Blue Gill Court. Example “A” shows what the sediment/muck depth was on 4/19/19 just prior to starting the 2019 treatments with the MD Pellets. Example “B” shows what the sediment/muck depth was on 10/10/19 approximately 3 weeks after the last treatment was performed.