

11/10/18 Update from the LCC/Special Committee

To: All LLPOA Members

Well, we received the DNA analysis of our lakes near the end of October and the results caught all of us off guard. We tested for Bovine, Hogs and Human DNA with the purpose of further identifying the sources of phosphorous to help fine tune our targets. Here is an excerpt of the lab report.

"...in several of the sites where more than one host source was detected, the proportional difference between host sources was enormous. The proportional differences, because they were so large (thousand, million and billion fold, are expressed in scientific notation."

".... the Bovine host source was the biggest contributing source overall. The bovine host source DNA marker tested positive in 7 of the 9 sites, and of the 7 sites that the Bovine marker tested positive in, it was the largest contributor in 5 of those sites."

DNA Results Summary:

Our DNA analysis was conducted at 9 locations, two dams (one from SL to NL and one from NL to Mirror Lake and onward to the Grand River) and 7 other tributaries and culverts.

The overall (blended) results for each lake were as follows:

- SL Dam - Bovine DNA was detected 142m times greater than Human.
- NL Dam - Bovine DNA was detected 9 times greater than Human.

Results suggested there may be a higher concentration of Human DNA (septic) in the NL than SL.

Detailed results for each lake were as follows:

- NL Culvert - Human DNA was detected **1.7b times** greater than Bovine.
- SL Sample B – Pig DNA was detected **2.3m** times greater than Bovine.
- SL Sample E –
 - Bovine DNA was detected **6.3b times** greater than Human
 - Bovine DNA was detected **1.4b times** greater than Pig
 - Pig DNA was detected 4.4 times greater than Human.

Result indicated the NL culvert had the highest concentration of Human DNA measured from either lake.

Result indicated the highest concentration of Bovine DNA is coming from the westerly portion of SL.

Result indicated the highest concentration of Pig DNA is coming from the southern portion of SL.

Upon contacting the Hillsdale Drain Commission, we learned that the NL Culvert #331, was installed funneling water from outside the Lake LeAnn Property Association (LLPOA) into NL for some time now. We were able to obtain official Hillsdale documents showing its exact location and proximity to the lake. Actually, it drains right into the lake.

It is our team's assessment that this culvert is the largest source of septic contaminants to the NL detected so far, but unfortunately is entirely outside of our control and jurisdiction. We are working with the Hillsdale Health Dept. to do further investigation and mitigation.

The general consensus that the Lake LeAnn Phosphorous Load Model published in 2006, suggesting that septic system was our largest source of fecal-derived phosphorus, was incorrect.

Livestock (Bovine/Hog) is now to be considered our primary source of fecal-derived phosphorous for further analysis and mitigation, with possible septic-related contaminations secondary and potentially quite localized. Of course, phosphorus can come from other sources besides fecal contamination, including fertilizer run-off and the decay of nuisance plants and algae that we kill through lake treatments every year. These data indicate the need for a multi-pronged approach to saving our lakes. Just another example that doing research, gets results.

We've held briefing meetings with the Michigan DEQ and Health Dept., plus the MSU Extension for Environmental Management/Agriculture and Agribusiness Institute, the Upper Grand River Watershed Alliance and anyone else who will listen. Follow-up meetings are already scheduled with these agencies for ongoing analysis.

What can you do?

We have been advised by many organizations that we are up against some strong headwinds with the farming community and the message needs to be handled carefully in order to secure a true partnership to help solve these problems. So please, keep this information within the association until a plan for establishing a partnership and communication channel with the farming community can be developed.

Be advised that we are going to probably need more funding via increased fees etc., to get our lakes back in shape. The board is searching for options and will be reaching out to everyone soon for advice and recommendations.

For more detailed information, please see the 11/10/18 presentation posted to the LLPOA website. If you have any trouble downloading just let us know and we'll email you a copy or send one to you via snail mail.

We have been getting a lot of positive comments about our work so far and confidence is building. Plus we are receiving many great ideas from the membership, so please keep them coming. You can always reach us at **(517) 688-9704** or **lakeleannpoa@gmail.com**.

Together we can turn this around!

Best Regards

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