

Meeting Agenda
8pm Monday Sept 08, 2014



Marion Township Library -Chickasaw, OH

1. **Jim Keller – Welcome, meeting purpose.**
2. **Heidelberg University GLSM Monitoring Station Results - Laura T. Johnson, Research Scientist - National Center for Water Quality Research** - Laura shared the background of her organization and noted the tributaries that Heidelberg monitors. In the GLSM watershed, they've monitored the Chickasaw since 2008, the Coldwater since 2012, and the Beaver since 2013. Her presentation was detailed but the key findings she shared are as follows:
 - Heidelberg is monitoring 15 tributaries across the state
 - The P and nitrate loading in the Coldwater and the Chickasaw are higher than any of the other tributaries they monitor.
 - Both the Coldwater and the Chickasaw are non point source (meaning that the water volume is generated from both tiles and surface flows) creeks. P increases with increasing flow where non point sources dominate.
 - Spring (March thru June) rains usually trigger over 50% of the annual nutrient load. Heavy rains produced heavy loads in 2011. Total nutrient loads which include both dissolved and particulate P, flowing into GLSM seem to be staying constant.
 - The lake appears to be capturing nutrient loads. Per the monitoring station in the Beaver, the nitrates and P flowing out are much reduced from those flowing in.
 - While nutrient concentrations in the Maumee River are much less than local tributaries the sheer volume of water means that significant amounts of nutrients are flowing into Lake Erie.
 - Laura's presentation prompted many questions and a lively discussion. A perplexing issue is that the charts do not reflect the positive steps such as cover crops and stream buffers that farmers have taken to address nutrient loads in the watershed. The charts reflected that 2012 and 2013 showed some reduction in dissolved P. Laura noted that she might look at this aspect a bit closer. Discussion also ensued that some of these practices may take more time to impact the findings.

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- Lou Brown asked if anyone was familiar with the amount of P being released by the sewage treatment facilities in the watershed. Lou noted that at an earlier meeting Tom Menke had stated some tonnage numbers that Laura felt seemed extremely high. She will do some additional research to verify what levels of P might be coming from those sources.
- Laura stated that it is sometimes challenging to draw definitive conclusions from their findings. For instance P soil test levels in the Maumee are low, farmers are using less fertilizer and yet dissolved P levels being measured remain high. The situations there and at GLSM are certainly not straightforward and much more investigative work needs to be done. She sympathized with the plight of farmers who are following good practices and yet continue to bear the brunt of the blame for nutrient loads. The “stories” out there get tend to be considerably misleading.
- In response to a question about Gypsum, Laura felt that for Gypsum to work effectively, soils need to have a low amount of soluble calcium. We need to know more before encouraging everyone to use Gypsum however it won't hurt to try it.

Laura's slide presentation summary was as follows:

- Tributaries to GLSM have high export of phosphorus and nitrate
- Both phosphorus and nitrate appear to be primarily from non-point sources
- Spring loads carry most of the annual nutrients to the lake
- No clear trends in loading thus far, variation is driven by discharge
- The lake is heavily transforming both dissolved P and nitrate prior to export to Beaver Creek

You can contact Laura if you'd like to discuss any of these points with her. Her contact info is Laura T. Johnson, email: ljohnso1@heidelberg.edu phone: (419) 448-2056.

3. **Terry Mescher Report** – Terry and Bill Knapke are working with Elevation Technologies who have teamed up with Nuvention. They are looking for a local test site and Terry is assisting them in this effort. Terry is also pursuing funding for the test. They have a separation technology which purports to separate nutrients and isolate resins which can then be used in coatings.
4. **Glen Arnold – Manure Application Day.** Held at Homan Equipment on July 31st. All went well with probably 100 total people in attendance.
5. **Gene Marshall – BioTown, Indiana.** Gene visited Bio Town on July 10. They were unable to get some aspects of their technology to work and were investigating the possibility of pelletizing their liquid manure. Gene discussed Amiran and their approaches with them. Terry expressed concerns about Amiran's technology. He said that they (Soil and Water Office) had brought back a jar of Amiran's pelletized manure. Within a week the pellets had disintegrated back into a glob. This outcome doesn't reflect well on their technology and its overall local applicability. Gene feels strongly that there is a definite place for a digester in the area; however the handling of the nutrient rich effluent will remain an issue.

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ADAPT test plots - Discussion ensued about the latest on ADAPT test plots. Lou Brown replied that farmers are still involved and he will get an update from Tom Menke. Lou will also get, from Tom, some clarification and verification of the levels of P being released by the sewage treatment facilities in the watershed. These numbers could impact the conclusions drawn from the data presented by Laura Johnson and Heidelberg.

Kevin King tests - Jim Keller expressed optimism that the tests being conducted by Kevin King will contribute insights into nutrient flows that will compliment the Heidelberg findings.

P Control Structures - Jim Keller thanked Jim Hawk for forwarding an article covering P control structures. This article triggered more than the usual response from the email recipient list. Dr. Larry Brown with OSU is installing a unit at St. Charles which should be fully functioning sometime in October. Brent Dixon with Organic Pond called and discussed their nanotechnology based ceramic that he claims can filter out P at much higher rates than any other medium. The P can then be extracted from the medium and reused. More follow up needs to be conducted with Organic Pond to ascertain how “real world” this solution is.

Separation Technologies - Don Pickett with Pickett Enterprises ran a test at a local swine pit with some positive results. The test protocol was questionable and so he is waiting on additional testing which will occur when the pit is emptied.

6. **Bill Knapke Report** - Bill has not been in contact recently with Mark Minnix and his use of ozone for manure separation. Needs to follow up although his last conversation still reflects that the technology will be prohibitively expensive. Bill did comment that in the “real world” swine manure could be efficiently and productively handled if it could be stratified into 2 or 3 layers each having unique nutrient properties.
7. **Updates from Floor** – Lou had copies of plant analyses generated by pulling leaves from corn plants. This is the first time Lou was involved in this sort of testing which reflected that his plants had low N & P levels. Lou is wondering why the nitrogen was in the low range. Did it wash out of the soil or did he not apply enough? Lou commented that a realistic goal might be 170 bushel per acre corn rather than 200+. A lot of nitrogen would be saved and the environment would be the better for it.

Lou was contacted by the Ohio Dairy Association to serve on a Great Lakes Regional team. They are preparing a paper on soil health and water quality. Personnel from many diverse fields are involved.

State legislators visited the Jim Broering farm at St. Henry. Seven of eleven invited state legislators attended. Local Soil & Water representatives were also there and Lou felt the overall discussion about farm challenges went well. Time of course will tell if the farmers’ input will bear fruit in any future legislation.

Adjournment – next meeting date and time will be announced. Watch your email