Ohio Lake Erie Phosphorus Task Force Meeting
August 26, 2009
ODNR, Building H-2

Attendance: Gail Hesse, Jeff Reutter, Jack Kramer, Rem Confessor, Julie Weatherington-Rice, Dave Baker, Todd Hesterman, Roger Knight, Mark Scarpitti, Dan Button, Norm Fausey, Kevin Elder, Rick Wilson, Gerry Matisoff, Matt Adkins (for John Kessler), Chris Riddle, Seth Hothem, Julie Letterhos, Larry Antosch. Observers: Joe Logan, Eric Partee, Ron Wyss

Updates

Chair Gail Hesse opened the meeting and provided a brief overview of the upcoming Great Lakes Restoration Initiative RFP and the State's approach to it. She also provided a brief overview of the situation at Grand Lake St. Mary's including posting of advisories due to Microcystis. It was also mentioned that the Lyngbya in Maumee Bay was now also covered with Microcystis.

Julie Weatherington-Rice brought up the Ohio Academy of Science seminar in April. Ohio EPA has committed to participating in a session on Inland Lakes and the algal problem. There was also some discussion as to including any updated information from the Task Force in this session as related to phosphorus and algae in Lake Erie.

Gail and Dave Baker had attended the Phosphorus Forum hosted by SERA 17 in Windsor in July. The Forum focused specifically on phosphorus from agriculture. Many of the speakers were authors of research papers that have been utilized by the P Task Force. There was a consensus that there was a universal need to update the P index to make it more applicable. Dave said Heidelberg is working on the use of dilute aqueous extracts as an indicator under their grant from the Great Lakes Protection Fund.

Gail also spoke about the work of the Task Force to the Midwest Association of State Departments of Agriculture at their annual meeting in July on Gibraltar Island. Some of those present kept asking if we were sure that Phosphorus was the cause. Her experience there led Gail to suggest to the Task Force that we need to spend more time identifying the themes coming out of our work and to add more weight to the recommendations.

Kevin Elder and Robert Mullen have polled soil test labs and verified that the labs don't typically offer recommendations to their clients. They just provide the results.

Several Task Force members had attended a session at UT concerning the potential to use instrumentation attached to a blimp anchored to a barge in Lake Erie to measure amounts and coverage of green and blue-green algae. The instruments are capable of covering 2KM on a side. It was primarily a demonstration on the potential to utilize military equipment/technology for monitoring algae.

Dan Button did an assessment of existing data to look at long term trends in stream flow. They are seeing an increase in discharge at all gauges except for the Tiffin River, upper St. Joes, and upper River Raisin. These three streams are more influenced by groundwater as they are surrounded by sandy soils and glacial till. Most of the other streams are largely influenced by surface runoff. The Blanchard has had some extremely high flows over the last several years which may be related to climate change. Overall, it appears there is an increase in flow of 10-20%. Much of the increase in DRP loads is occurring in December/January period and is related to higher flows and higher concentrations in runoff. There has been a decrease in snow cover and more rain storms in the winter. Water runs off frozen ground more quickly. The flow changes are related to climate and not increased channelization. The Nature Conservancy has a program on line that allows you to determine projected changes in flow over time based on specific variables. According to NOAA, Ohio typically has Type 2 storms, which are representative of the Midwest. However, we are beginning to shift to more Type 1 storms which are more tropical in nature (frequent and high intensity which create a deluge). Dan had worked up some graphs on these trends and will send those around when he returns to his office.

Discussion of Draft Report

The group moved into reviewing the latest draft of the P Task Force Report. There is still not a "results and discussion" section nor an Executive Summary. The following comments relate to the draft text.

1. We need to better identify the themes coming out and give more weight to our recommendations.
2. We need to add a section capturing ongoing research currently being supported by USEPA-GLNPO, the Great Lakes Protection Fund and the Lake Erie Protection Fund as well as a narrative on research needs.
3. Add a glossary upfront.
4. Delete last sentence in 4th paragraph on page 28 stating "Additional restrictions on loads from the larger WWTPs considered as direct point sources would have the greatest impact on lake concentrations and loads." The Task Force has not discussed this point.
5. Make sure that we clearly describe the loading approach used by Dave Dolan particularly in reference to the definition of a point source (i.e. direct/indirect point sources). Make a better connection between the discussion of this in the Background section and the Point Source Section.
6. For point sources, are we looking at the contribution overall or the amount of P that actually gets delivered to the lake? Be sure to discuss and clarify this.
7. Provide sources for figures and tables where not currently listed, particularly for long term flow data (refer to Pete Richards work on sediment loading trends).
8. Add reference to climate change impacts/storms from NOAA.
9. Assume the report is being written for the educated lay person. Anything more technical than that should go in the appendix.
10. Clarify the ratio of agricultural acres to those in turf grass management. Recently the Ohio Turf Grass Association noted there were 4 million acres of managed turf in Ohio. This ranks close to the amount of land in agriculture. (Page 40). It

needs to be noted that the 4 million acres in turf grass number is statewide, while the approximately 4 million acres in agriculture is for only the Ohio Lake Erie basin. Statewide crop acreage is 11,5 million acres. Turf management may be more of a localized impact issue rather than a big contributor of P to the lake. There are new numbers on the reduction of P in turf fertilizers over the last year in the Lake Erie watershed.

11. Point out that the increasing P and algal blooms are happening in many areas.
12. Still need to bring out the difference between watersheds i.e. Cuyahoga and Grand vs. Maumee and Sandusky.
13. A discussion on internal loading resulted in the need to add the following points: western basin stratification is largely weather driven; the impact of wind on the western basin; is P released under anoxia > P released from wind-induced mixing? Yes; internal loading is more important in the central basin, while algal blooms are a western basin issue; the western basin should respond more quickly to reductions in loading.
14. Include a strong reference to the connection of P and algal blooms in the title.
15. Need some discussion as to why recommendations are focused on education and voluntary efforts.
16. Need to add a section on recent developments since the P Task Force started.

<u>Results and Discussion Piece</u>

1. Focus on P/algae connection.
2. Explain there will not be instantaneous results not matter what we do.
3. Why the focus is on education and voluntary efforts.
4. History of agriculture and list of preferred ag BMPs.
5. Incorporation of assimilative capacity component.
6. Define the areas where management actions will make a difference and where we have not control.
7. Note that the same things are happening in other areas.
8. Climate change connection to tributary discharge rates.
9. The difficulties of dealing with a system in flux.
10. Differences in management of turf vs. management of agriculture

<u>Executive Summary</u>

Roger Knight drafted a simple figure to clearly show the relative significance of manageable P sources to the overall P load. It was based on a diagram of boxes (sources and DRP/Particulate P) connected by arrows of varying widths to demonstrate the significance of the source to the load. Much discussion ensued on how to alter this figure to better present our results. The size of boxes and width of arrows could be altered to emphasize the importance of a particular source. Add actions along the arrow related to things that could be done to improve the box. Add more boxes to the right reflecting impact on the lake. Combine particulate forms in one box as there isn't much information on inorganic vs. organic particulate P. Change "Phosphate" in the Title of the figure to Phosphorus to be consistent with the rest of the report. Add additional boxes to the right related to impact on the lake (i.e. algal blooms, anoxia, etc.) A legend is needed to explain boxes, size of arrows, etc.

Several options were discussed to better organize the presentation of the Executive Summary. One option was to follow the 4 Main themes in the Matrix – gaps in science, issues for management, research agenda, and education agenda. Another option was research vs. management issues. Another option was to build on Roger's figure, what we can do to shrink the boxes, etc. Another option is to list the hypothesis of that source as a problem and then what we can do about it. For example a list topped by Ag Sources would follow with the issues of fall fertilizer application, increased winter precipitation and storm intensity, broadcast vs. incorporation. Then we would add recommendations to what to do.

Matrix

Remove P detergent ban from recommendations list and add to text in the new section on recent developments. Reorganize matrix based on major themes, sources, or TOC. Add NRCS conservation systems to the matrix. Robert Mullen recently published a list of BMPs for P control which we can use as a starting point. Delete reference to open lake disposal.

It was determined that we would order the matrix to the TOC.

Mark would prepare language addressing the NRCS conservation systems.

Mark, Rick and Norm would develop the list of recommended Ag BMPs.

Chris, Jeff and Norm would work on education actions needed for the general public on controlling the sources of P and the impact on the lake.

Discussion of Potential P Projects for the GLRI

There is about $250 million available under the GLRI. NRCS has not received guidance on how their portion would be allocated.

Gail passed out a list of 6 potential projects for consideration.

Project 1would focus on the Maumee and Sandusky River basins and provide incentive funding to Ohio CCAs to conduct nutrient management planning and track implementation of fertility recommendations. It would include the collection and analysis of soil test data to align fertility recommendations with existing nutrient levels.

Comments: Under the Great Lakes Protection Fund project that Heidelberg is working on, CCAs are already collecting soil stratification data in the Sandusky watershed. They are required to complete a fairly lengthy survey form. Projects in the Sandusky and Wabash may serve as precedents for designing this project.

Project 2 focused on a grant program in the Middle and Upper Maumee watershed to implement BMP practices including: precision grid sampling; variable rate fertilizer and manure application; conservation and reduced tillage; nutrient management planning

incentives; cover crops; 2-stage and self-forming ditches; incentives to fertilizer dealers and manure brokers to minimize applications. Comments: It is important that this not be a repeat of the same old/same old efforts and implementation scheme already underway.
Project 3 focused on demonstration of new innovative equipment used to inter-seed cover crops into grain fields. CAP would procure new equipment and lease it over a three year period on 4000 acres in Upper/Middle Maumee watershed. Comment: How would outcomes be measured? CAP is already working on an initiative with 20 agri-dealerships on variable rate application technology for nitrogen and phosphorus, and with 5 growers in each dealership to demonstrate timing and rates of fertilizer application. Need to teach dealers how to make money for services offered as opposed to tons of fertilizer sold.

Project 4 would focus on targeting EQUIP towards nutrient management practices in the western basin watershed. This effort would address adding more incentives.

Project 5 addressed managing ag practices for holding back flood waters from ag crop land and thus abating nutrient delivery.

Project 6 would fund support for hiring watershed coordinators to develop state endorsed watershed action plans. Comment: It was decided to drop this from the list of P Task Force related projects and refer it back to general State GLRI proposal.

Other Items

Ron Wyss described his idea of developing a GIS system to track soil test information and link it to an existing data base that would be accessible by various agencies.

For the projects listed in the 2010 GLRI application, it is important to submit projects that produce a measureable impact.

Jeff Reutter observed that some components of the GLRI are specifically for research and academia. He is coordinating a group similar to what was done last year in preparing projects related to source of DRP and connection to algal blooms as submitted to USEPA-GLNPO and the Lake Erie Protection Fund.

We need to make the distinction among targets, concentration and loads as related to phosphorus.