

**Ohio Lake Erie Phosphorus Task Force Meeting Minutes**  
**November 4, 2008**  
**Ohio Department of Natural Resources, Building E**

**Attendance:** Steve Davis, Roger Knight, Paul Bertram, Seth Hothem, Chris Riddle, Kevin Elder, Jack Kramer, Norm Fausey, Rem Confessor, Dave Baker, Larry Antosch, Dan Button, John Kessler, Todd Hesterman, Mark Scarpitti, Pete Richards, Rick Wilson, Gail Hesse, Julie Letterhos, Robert Mullen, Libby Dayton

Gail Hesse and Paul Bertram provided an overview of the SOLEC (State of the Lake Ecosystem Conference) presentations. SOLEC is held every two years to provide an overall state of the Great Lakes summary. This year the main theme was the nearshore. For SOLEC, Gail provided the overall summary for the status of habitat and nutrients. She included a brief overview of the purpose and goals of the Ohio Lake Erie Phosphorus Task Force. Nutrients and algae have become an important issue in the nearshore areas in all the Great Lakes over the last four years. New invasive species continue to invade and impact the Great Lakes. An important emerging issue is the increasing presence/concentrations of pharmaceuticals in the water column to the point that some removal may be needed in WWTP effluents. Detailed reports on the nearshore, harmful algal blooms, nutrients and a number of other indicators can be found on the SOLEC web page at: <http://www.solecregistration.ca/en/Default.asp>

Chris Riddle provided drafts of the RFP for the Lake Erie Protection Fund that would focus on projects to support the work of the Task Force. Two RFPs were developed: 1) Research on the sources/connection of Dissolved Phosphorus and algal blooms; 2) Soil test Lab surveys. Members were to provide any comments to Chris ASAP so the RFPs could be released by the end of November. USEPA-GLNPO is also planning to release an RFA to complement the LEPF that will focus on nutrient related research and monitoring in Lake Erie. 2009 is a designated intensive monitoring year for Lake Erie with both US and Canadian resources focused on Lake Erie.

Mark Scarpitti of NRCS provided a presentation on a proposal to support the use of “bundled practices” as a means to better direct EQUIP dollars to areas where they would result in the most impact. This proposal began in an effort to better address the issues in eutrophication issues in Grand Lake St. Marys, which has similar goals as the Lake Erie P Task Force. Combining these practices to keep P on cropland would be economically as well as environmentally beneficial. Mark first provided some definitions to better describe the different types of tillage and field practices. These are as follows:

- No-till, strip-till and direct seed are all part of the same standard and relate to planting in the residue of the previous year with no soil disturbance.
- Conservation tillage breaks up soil but leaves at least 30% of crop residue from the previous year on the soil surface.
- Ridge Till uses specialized equipment that builds ridges and keeps the ridges drier and warmer to promote earlier germination.

- Conventional and Mulch Tillage uses moldboard plowing that buries all previous year's residue and destroys the natural soil structure.
- Rotational tillage alternates no-till one year with mulch tillage or conventional tillage the next. This applies a lot to corn, particularly in northwest Ohio.
- Controlled Traffic uses the same wheel track for all field operations. It limits soil compaction to only the wheel track. 90% of compaction occurs on the first pass. This is a good practice to adopt in NW Ohio.
- RTK auto steer uses GPS that is programmed to steer the tractor into a particular plowing pattern. It actually drives the tractor and be accurate to an inch.
- Buffer Strip is an area seeded to grass. It can be used for filtering and providing wildlife habitat. They are also referred to as filter strips, field borders, conservation cover, and herbaceous riparian cover (shady habitat).
- Cover Crops are used to reduce compaction, recycle nutrients, improve soil tilth and structure, reduce erosion and fix nitrogen.
- Systematic Tile Drainage is used for poorly drained soils, to improve soil quality and water infiltration, reduce compaction, improve crop yields, provides the potential to reduce the amount of runoff, and may help reduce P runoff if managed properly.
- Drainage Management controls subsurface drainage when it is needed and not needed, thereby reducing the amount of nutrients moving off the field. This is only appropriate in certain substrates.
- Nutrient Management manages the amount, source, placement, form and timing of application of nutrients and soil amendments. It is currently being used to get a better handle on nitrogen in soils.

So why are we seeing an increase in DRP from agricultural practices? This could come from compaction which causes high flashiness, poor infiltration and more runoff. Poor nutrient management due to applying too much, putting it in the wrong places, using the wrong forms, and timing of application also contribute to increasing DRP. The application of commercial fertilizer is likely more of a problem than manure. Soil stratification of phosphorus is occurring but P levels are not above agronomic standards. The problem occurs when stratification occurs when there is compaction under the surface layer and water and nutrients cannot infiltrate.

Individual conservation practices may solve part of the problem but not the whole. There needs to be support for other practices as well. Without this support, a single practice may fail and be detrimental. This is where Conservation Management Systems (CMS) or bundling several practices may help. There are three main types: water quality/nutrients; water quality/waste; and controlled traffic. (See handouts).

The approach is holistic and sustainable agriculture. What is good for soil and water quality is good for the producer. What impediments are there to implementing these practices? Some include: cost, uncertainty of success; lack of education and outreach; how do you get cover crop established; need better information on DRP runoff associated with results of soil tests; absence of land owners (many farmers rent the land they farm and it would be a huge investment for them to adopt a practice that they may only use one or two years). The bundled concept would allow financial assistance for installation as well as future management incentives. Costs would be \$11 to \$15 per acre.

Additional research is needed on cover crops as to what will work where. Cover crops tend to work better in southern Ohio rather than northern Ohio. (Could cover crop research be a potential priority for future LEPF grants?)

In NW Ohio, the annual high water table is often at the surface. Tile drainage is needed to drain fields and keep the water level down. Compaction may be a larger problem in NW Ohio than previously thought. This needs to be controlled better and CMS (controlled traffic) may help. SWCD, the Farm Bureau and the local NRCS representatives need to promote changes.

It was suggested that the Task Force bring in Joe Nestor or another Certified Crop Consultant (CCA) to explain the industry so we can better understand the issues, problems, why it is difficult to incorporate some practices, and the timing of various activities. We need to get all the CCAs on the same boat. Need to discuss how we can work collectively to change practices, show the payoff to commercial aspects (dealers) as well as the producers (farmers).

The Conservation Stewardship Program is the new name for the Conservation Security Program in the new Farm Bill.

Soil quality discussions will be needed as to when/where certain practices will work or not work.

The type of equipment used in agriculture began changing in the 1990s. Larger tractors were used to pull larger equipment which led to more compaction of soils. In the late 1980s, there was a move to broadcast fertilizer application from fertilizer added on the planter.

What farming practices changed that could have contributed to the changes we have seen in DRP since 1995? # of tillage acres; no-till practices; Homeland Security restricted how much fertilizer could be held on site.

Are there methods in place to measure the success of conservation practices, both environmental and economic? Not specifically. There are some measurements for individual practices but not for overall combined practices. CCAs may have some information on how much money farmers are saving by using GPS.

What is the limiting factor for environmental and economic benefit? Results to date from the research side have been very field specific. Low yields in borders may be causing farmers to lose money.

Should the P Task Force recommend promotion of the bundled practices concept? The bundled practices are currently being reviewed by Terry Cosby and the State Technical Committee. If they are approved, how they would get implemented would depend on how the rules are written. There would have to be some work on how to implement other portions and how they connect to other existing programs. Promoting bundling would be more beneficial than recommending individual practices. There may be some potential to establish a discovery farm where practices are implemented to measure benefits. Benefits of one practice at a time could be measured vs. bundled practices. Should the P Task Force send a letter of support to the State Technical Committee or include a recommendation in our matrix? We will revise Matrix#9 by adding bundled practices as a bullet in the "Recommendations Column" after "such as". Don't get too specific about the funding source as it could get out of date quickly. Refer to the Bundled Practices as Conservation Management Systems. Promote opportunities to monitor the benefit/success of these practices.

We need to invite a CCA to a future meeting. Joe Nestor is a CCA in NW Ohio who was once a fertilizer dealer. He could help give us the perspective from a CCA's view, what they know, what they are seeing, differences in soil types and how they are responding to different practices.

Gail Hesse, Rick Wilson, Steve Davis and Mark Scarpitti had a briefing on the P Task Force with Director Korleski and State Conservationist Terry Cosby. Terry Cosby committed NRCS to the work needed to update the P index for Ohio. He also indicated that it will be helpful to him to have the P Task Force's Report to help make EQUIP decisions.

#### Agricultural Pollution Abatement Advisory Committee

John Kessler provided an update on this committee and described the Agricultural Pollution Abatement Program. The Agricultural Pollution Abatement Program was created in 1979 to prevent pollution on many small and medium sized livestock farms. It was used by ODNR-DSWC and SWCDs to reach out to farmers to promote the wise use of BMPs and help resolve pollution problems. To keep the program up-to-date and as effective as possible, DSWC formed the Agricultural Pollution Abatement Advisory Committee. The membership includes leaders from the agriculture and livestock industry, regulatory agencies, environmental organizations and conservation agencies. To date, four meetings have been held. Recommendations discussed by the committee include: develop a simple state-approved management tool to help the producer, SWCDs or consultants to assess whether the operation is meeting or exceeding baseline nutrient management requirements; have lenders and integrators require nutrient management plans and siting criteria for new medium and significantly expanding AFOs; require nutrient management training for operators of livestock operations and farms where manure is being land applied; amend the ag pollution abatement program statutory authority to clarify that a nutrient management plan can be required to resolve a valid pollution complaint and that the operation is subject to periodic inspections by DSWC; work with AG to add a civil penalty provision to the ag pollution abatement program statute; consider a 6-month timeframe limit for a complaint to go unresolved after which it is subject to enforcement action; review current practice standards that are particularly challenging to determine if there are alternative standards that would be more feasible for farmers to implement; revise and update current State cost-share funding for various conservation

practices; help address funding needed to restore DSWC staff that can provide technical assistance, training, planning, design, enforcement and consistency to the ag pollution abatement program.

Committee members were to meet again on November 13 to review and reach consensus on these recommendations and take them back to their respective organizations for input. Another, and potentially final, meeting will be held in January to finalize recommendations.

#### Discussion of TOC for Recommendations Report

Proposed TOC and assignments

## **Draft Outline/Table of Contents**

### **Phosphorus Task Force Final Report**

#### I. Introduction

- a. Brief background on the creation of the Task Force – Gail (with help; begin with pulling from existing write ups)
  - i. Overview of dissolved phosphorus trends and Lake Erie algal blooms
  - ii. Brief description of phosphorus contributions to Lake Erie, from all sources, from Ohio (from Dolan’s data, as compiled by Dave B.)
  - iii. Brief overview of land use/land cover information (as compiled by Dan Button)

#### II. Types/Dynamics of Phosphorus (soils) - Libby

- a. Total
- b. Dissolved
- c. Discussion of bioavailability
- d. Solubility
- e. Adsorption
- f. Mobility

*mention this is primarily an overland runoff phenomenon*

#### III. Types/Dynamics of Phosphorus (water-streams and open waters) - Paul

#### IV. Sources of Phosphorus Delivered to Surface Waters

*discussion of all sources evaluated as part of Task Force deliberations*

- a. Point Sources –Julie L. with Seth
  - i. POTWs (as compiled by Rick Wilson)
  - ii. Industrial (as compiled by Julie Letterhos)
  - iii. CSOs
  - iv. Home Sewage Treatment Systems (summary of ODH report)
- b. Agriculture -Rick
  - i. Summary of Ohio loading data
  - ii. Synthesis of peer-reviewed articles
- c. Urban/residential

- i. Lawn care fertilizers (residential, golf courses) Gail to check what Pete sent
    - ii. Urban storm water runoff (John K. will follow up with SWCD for potential data)
    - iii. Residential water use – orthophosphate and PWS -Seth
  - d. Other
    - i. Streambank erosion (part of total sediment load)
    - ii. Critical source areas (connectivity)
    - iii. Detroit River/Upper lake loads
    - iv. Herbicide interactions (glyphosate) – Robert and Libby
  - e. Transport mechanisms of Phosphorus to Lake Erie
    - i. Subsurface drainage – (tile drainage) Norm
    - ii. Surface water runoff – relationship with major storm events—how P is moving
    - iii. Channelized streams and ditches
    - iv. Macropores

#### V. Relative Contributions

*summarized comparison of the different sources discussed above*

#### VI. Recommendations (to be reviewed/added to by the group)

- a. ...
- b. ...
- c. Matrix
- d. Research recommendations

#### Comments from 11/4/08

-be sure to describe the uncertainties of what we know

- capture atmospheric deposition in tributary loads and for direct to lake loads (Dolan)

-briefly cover current monitoring activities and how they might already be addressing some of the P issues as part of the introduction

-“sell” the problem; include impacts on beneficial uses: fish and wildlife

-include what efforts are currently underway that affect P loadings

-Include pie charts of relative contributions of the various sources of phosphorus

Open question not yet addressed by the Task Force:

P/algae connections in other states, the US, Great Lakes?

Send all drafts to Gail by Dec. 5 to compile and send out for review by Dec. 15<sup>th</sup>.

Next Meeting will be January 13