

**Minutes if the SERA-IEG 17 Annual Meeting held in Kent Island, MD
7/28/2008 – 7/31/2008**

**Location:
Hilton Garden Inn (Monday and Tuesday),
Kent Island Volunteer Fire Department (Wednesday),
with a field trip on Wednesday**

Monday July 28th

Welcome reception at the Hilton Garden.

Tuesday July 29th

The SERA 17 group was welcomed by Forbes Walker, 2007/2008 chair of SERA 17.

The first morning focused on phosphorus issues related to the Chesapeake Bay, with presentations by Gary Shenk, USEPA CBPO Modeling Team (“Current conditions and what happens when we don’t meet our 2010 goals”, and “The Bay Model approach”), by Scott Phillips, USGS (“State of water quality science in the Bay Watershed: Status and future needs”) and Tom Horton (“Bay Politics and Science: Taking the gloves off for an honest assessment of what we need to do to “Save the Bay”?”).

In this session, Gary Shenk gave an overview of the current status of the Bay, indicating the 2010 goals will not be achieved. Agriculture is about 50% towards the goal with practices on the ground but urban/suburban is going the wrong way. Thus TMDLs will become a reality in 2010/2011 (depending on State or EPA actions). Scott Phillips indicated decreasing trends in P sources (from waste water, non-ag fertilizer use, manure and ag-related fertilizer use) and Tom Horton added that an ag focus is the most cost-effective for cleanup of the Bay but that we are running out of time.

The afternoon focused on charting a vision for SERA 17’s future, including a discussion on the role of SERA 17 in dealing with water quality issues (with moderators Andrew Sharpley, University of Arkansas, and Daphne Pee, Mid-Atlantic Water Quality Program).

Andrew Sharply indicated the importance of research, extension and policy development. Research should focus on updating of model routines and determination of BMP effectiveness. Extension included P index evaluation at the field and farm level and regional coordination of management guidelines, as well as P index validation as a risk management tool, development of TMDLs and on-farm research and demonstrations of BMPs that work and are cost effective. Policy development should recognize different scales (state, regional, nations), define the role of non point source models and the influence of major system changes (biofuels, fertilizer prices, DDGs).

The day ended at the Crab Feast in Queen Anne’s County 4-H Park, Centreville, MD.

Wednesday July 30th

The focus of the morning discussions was on the role of SERA 17 in policy development (Karl Glasener), in setting/developing (or supporting through our research) TMDL targets (Bob Foy), and discussions about a quantitative P index with Brad Joern, Purdue University, and Peter Vadas, USDA-ARS. The morning ended with a panel discussion (Dan Storm, Brad Joern, Peter Vadas, Peter Kleinman, Doug Beegle) moderated by Tom Sims. In the afternoon, we held a discussion on where to go from here, conducted a short poster session, and held our work group meetings.

Karl urged SERA 17 to be involved in policy development. SERA 17 could play an educational role and an advocacy role, and he urged us to consider the writing of white papers (1 pagers with visuals). Bob Foy reminded us that controlling P is costly. Pete Vadas showed research that suggests it should be possible to quantify annual field scale losses across a wide array of field scenarios (management, soil types, climate, geographic location, etc.). Brad added that we are not lacking an understanding of how P behaves but fail to implement spatial dimensions in our tools for management. He urged us to include GIS and develop maps of P index hotspots. In the panel discussion, Doug remarked that extension activities and messages need to match with farm management realities for implementation. Models are critical, validation needs to happen, models can inform development of best management practices but the final management tools should be simple to be implementable.

We discussed the various working groups. The soil and manure testing work group was discontinued. Two groups met during the meeting: modeling work group (includes aquatics and transport; chaired by Nathan Nelson), the BMP work group (includes applied research, factsheets and white paper development; chaired by Forbes Walker). Individual work group reports are listed below.

It was announced by Ray Bryant (USDA-ARS) that Andrew Sharpley (University of Arkansas) had been inducted into the ARS Hall of Fame based on his 21 years of service with ARS.

In the business meeting, Forbes Walker proposed Nathan Nelson as the future chair of SERA 17. This motion was seconded and his nomination was accepted by a show of hands.

Pamela Joosse (OMAFRA, Canada) proposed to hold the 2009 SERA 17 meeting (“Great Lakes Phosphorus Forum”) in Winsor, Ontario. This invitation was accepted and an organizing committee will continue to work on the agenda. SERA17 members included in the organizing committee are Forbes Walker (past chair), Quirine Ketterings (current chair) and Nathan Nelson (chair elect), and Peter Kleinman.

July 31st

Field trip to the Ag-drainage Research on Maryland’s Coastal Plain (featuring the ARS litter injector) and the Agri-Recycle Poultry Litter Pelletizing Plant.

Work Group Reports

1. Modeling Workgroup (by Nathan Nelson)

- The decision was made to keep the national P-index project part of the modeling workgroup.

National P-index (National P Loss Assessment)

- The national P-index project will need a new name to distinguish it from the state p-indices. Proposed name of a P-assessment tool. We will choose a name via discussion on our list-serv. Other names as follows:
 - Standardized Phosphorus Loss Assessment Tool (SPLAT)
 - Standard National Assessment of Phosphorus Loss (SNAP-L)
- We will use other processed-based quantitative P load indices from the states as a starting point. States with such tools are WI, NC, IA, OK, AK, and MN.
- The OK quantitative index is a considerably different structure.
- Pete Vadas will summarize the frameworks/approaches used in the indices from WI, IA, and OK. Nathan Nelson will provide a summary of the NC index.
- Brad Joern will take the framework and put together an example model by next SERA-17 meeting.

Representative Test Fields

- We decided that we need test fields that represent the important soil, landscape, and cropping system characteristics for which we need the assessment tool to work on. These fields would ideally be real fields that have runoff, water quality, and runoff data. However, we should not restrict ourselves to only the situations for which we have field data.
- Pete Kleinman will assemble the list of these representative test fields with data sent to him from other workgroup members.
- The following workgroup members will start assembling field-level data for their respective regions:
 - Pete Vadas – Midwest
 - Nathan Nelson – Great Plains
 - Puneet Srivastara – Southern States
- Other workgroup members are welcome to send field-level data to Pete K. The data should describe the soil series, slope, cropping system, P inputs, and key transport processes that are influencing P loss.

Model updating and development

- Services that we can provide are i) offering updates for current sub-routines or suggestions for new sub routines in SWAT and ii) testing the sensitivity of SWAT to the updates in a wide variety of conditions.
- Some of the key processes affecting P loss that need updating in the SWAT model are as follows:
 - Rate coefficients for P-flux between labile and active P pools

- P loss directly from applied P sources.
- Saturation excess runoff hydrology
- Run-on run-off hydrologic processes
- Connectivity between fields in the landscape.
- BMP coefficients
- Pete will contact Cole Green to see where they are in incorporating the suggested updates that have been provided to them. If they need more data or testing then the workgroup will provide the required information.
- We will inform the BMP group that we need BMP coefficients for the model. Perhaps they can be of service in providing these coefficients. The Chesapeake Bay Project has already collected a list of documented BMP coefficients for the North Eastern US. The first half of their list is available on their web site listed under meeting minutes. The second half should be available by the end of this year.

People in attendance (workgroup members)

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|------------|-------------|-----------------------|--|
| Dan | Storm | OK State Univ. | dstorm@okstate.edu |
| Peter | Vadas | ARS, Madison WI | peter.vadas@ars.usda.gov |
| Pete | Kleinman | ARS, Univ. Park, PA | peter.kleinman@ars.usda.gov |
| Puneet | Srivastara | Auburn Univ. | srivapu@auburn.edu |
| Kreeshinik | Bejlerei | UMD | kbejlerei@umd.edu |
| Jennifer | Weld | PSU | jlw23@psu.edu |
| Chip | Elliott | PSU | hael1@psu.edu |
| KG | Karthikeyan | UW-Madison | kkarthikeyan@wisc.edu |
| Mark | Dubin | UMD | mdubin@chesapeakebay.net |
| Brad | Joern | Purdue Univ. | bjoern@purdue.edu |
| Tom | Sims | Univ. DE | jtsims@udel.edu |
| Carl | Bolster | ARS Bowling Green, KY | carl.bolster@ars.usda.gov |
| Dong | Beejt | Penn State | dbb@psu.edu |
| Moustafa | Elrashidi | USDA-NRCS, NSSC | moustafa.elrashidi@lin.usda.gov |
| Andrew | Sharpley | Univ. Arkansas | sharpley@uark.edu |
| Ymene | Fouli | Univ. MD | ymene@umd.edu |
| Peter | Bacon | Woodlots and Wetlands | woodlots@optusnet.com.au |
| Robert | Hill | Univ. MD | rlh@umd.edu |

2. Best Management Practice (BMP) Group (Forbes Walker).

The BMP group was established to coordinate, draft and edit a series of phosphorus BMP factsheets. In 2005 a series of 32 factsheets were produced and released on the SERA 17 website. Interested SERA 17 members met to discuss the future of this group. We were recently approached by “eXtension” to include a link to the factsheets from their website (<http://about.extension.org/>). There are several factsheets still in draft form that need to be edited and released onto the website. These include one on snowmelt and biosolids. Forbes Walker (University of Tennessee) will continue to co-ordinate this effort. It was felt that there was still a role for the workgroup but the focus could be expanded. John Lory (University of Missouri) suggested that there was a need for a set of performance

based measures to assess BMPs and assess the effectiveness or success of a nutrient management plan. Currently we have little guidance for people evaluating written plans and we rely heavily on the experience and knowledge of the reviewer to assess a plan. We would develop a list of metrics that would be included as a summary page on a nutrient management plan that would allow a reviewer to determine quickly if the plan falls in one of three categories: plan *clearly* meets performance objectives; plan *may* to meet performance objectives; or plan *does not* meet performance objectives. Hopefully this process would bring some uniformity and objectivity to the plan review process. It would also provide a way to train people on what must be in a plan and what is desirable in a plan.

On a similar but different subject, Josh McGrath (University of Maryland) expressed an interest in performance based planning where the performance measures would be the basis of a nutrient management plan. It was suggested that the group could expand some of its focus to include the research and demonstration of new and emerging BMPs. It was agreed that we would initially focus on three areas to be coordinated by the following individuals:

1. Urban BMPs – Amy Shober, University of Florida
2. Reduced/Conservation Tillage and Manure Management – Rory Maguire, Virginia Tech.
3. Ag-Drainage Treatment and Management - Chad Penn, Oklahoma State.

Each one of these group leaders was going to use our BMP listserv to recruit their team from the larger BMP group. In conclusion it was decided that the BMP workgroup be expanded to include several sub-groups: factsheets, development of performance standards and the research and demonstration of new BMPs.

What is a BMP?

Jerry Lemunyon suggested that the group also work to define what BMPs. After the meeting he forwarded the following suggestions:

BMPs defined:

A single or group of conservation practices and management techniques used in land management to protect the environment, promote natural resources, and sustain the viability the agricultural community.

BMPs goals:

Best management practices are designed to reduce the degradation of any natural resource that it is impacting. The natural resources are expected to be better than before the intervention with conservation and management.

BMPs explained:

Best Management Practices are not exclusively the 'very best', that is not the most preferred, but are within the group of management activities that will lead to a successful intervention that results in greater environmental quality while maintaining an acceptable

level of productivity. There can be more than one 'best management practice'. Although BMPs are usually considered voluntary efforts, they can be mandated by groups or governances that are striving to improve the natural resource condition of an area. BMPs may or may not have performance standard to direct their activities.

BMPs assessed:

Best Management Practices are selected for their specific tasks by examining a series of decision points that determine if this particular practice 1) is capable of performing the specific resource protection, 2) is adapted to the resource issue and site condition, 3) has a scientific basis, or at a minimum, profession judgment, for meeting the resource concern, and 4) is economically and socially acceptable while completing the task.

BMPs precludes:

Decision support systems that help identify resource concerns and possible mitigations are not BMPs. Likewise, neither are assessment tools nor calculations for defining the extent of the resource concern. BMPs are actions that improve the condition of the resource, but not the instrument that identifies the problem.

Agenda:

**Kent Island Hilton Garden Inn, Grasonville, MD
7/28/2008 – 7/31/2008**

Monday, July 28, 2008 – Hilton Garden Inn

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| 7 – 9 PM | Registration Hilton Garden Inn Conference Room |
| 8:00 PM - 9:30 PM | Welcome social, Hilton Garden Inn (Cash Bar, light hors d'oeuvre) |

Tuesday, July 29, 2008 – Hilton Garden Inn

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| 7:30 - 8:45 AM | Coffee, Registration (Hilton Garden Inn) |
| 8:45 – 9:00 AM | <i>Welcome</i> Forbes Walker |
| 9:00 – 9:20 AM | <i>What is the current condition of the bay and what happens when we don't meet our 2010 goals? A review of current health indices, status relative to goals, and the path forward.</i> Gary Shenk, USEPA CBPO Modeling Team |
| 9:20 – 9:30 AM | <i>Questions</i> |
| 9:30 – 9:50 AM | <i>The Bay Model approach.</i> What is the Chesapeake Bay Model and how does it guide activities in the Bay watershed? Gary Shenk, USEPA CBPO Modeling Team |
| 9:50 – 10:00 AM | Questions |
| 10:00 - 10:15 AM | Coffee Break |
| 10:15 – 10:45 | Discussion |
| 10:45 – 11:05 AM | <i>State of water quality science in the Bay Watershed: Status and Future Needs.</i> What do we know and need to know about water quality in the Bay watershed and how does this relate to management decisions to restore the Bay? Scott Phillips, USGS |
| 11:05 – 11:15 AM | Questions |
| 11:15 – 11:35 AM | <i>Bay Politics and Science: Taking the gloves off for an honest assessment of what we need to do to "Save the Bay"?</i> Tom Horton |
| 11:35 – 12:15 PM | Discussion |
| 12:15 - 1:30 | Lunch (Conference Room) |
| 1:30 – 2:30 PM | Synthesis: What now? Charting a vision for SERA-17's future. Andrew Sharpley, University of Arkansas |
| 2:30 – 2:45 PM | Break |
| 2:45 – 4:00 PM | Panel Discussion: "What's the future and past of nutrient management as it relates to water quality and what role should SERA-17 play?" Facilitator: Daphne Pee, Mid-Atlantic Water Quality Program |
| 4:00 – 4:30 | Break |
| 4:30 – 5:00 PM | Bus Ride to 4-H Park |
| 5:00 – 8:00 PM | Crab Feast |

Wednesday, July 30, 2008 – Kent Island Fire Department (Posters will be on display all day)

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| 8:00 – 8:15 AM | Bus Ride to Kent Island Fire Department |
| 8:30 – 8:50 AM | <i>What role does SERA-17 have to play in policy?</i> Karl Glasener |
| 8:50 – 9:00 | Questions |
| 9:00 – 9:20 | <i>Can P research outcomes deliver TMDL targets by 2015?</i> Bob Foy |
| 9:20 – 9:30 AM | Questions |
| 9:30 – 9:45 AM | Coffee Break |
| 9:45 – 10:05 AM | <i>Not Your Father's Index: The Quantitative Future of Phosphorus Indexes.</i> Peter Vadas, USDA-ARS |
| 10:05 – 10:15 AM | Questions |
| 10:15 – 11:05 AM | <i>Implementing a quantitative phosphorus loss assessment tool for end-users: Is the Future Possible?</i> Brad Joern, Purdue University |
| 11:05 – 11:15 AM | Questions |
| 11:15 – 12:30 | Panel Discussion: <i>Dan Storm, Brad Joern, Peter Vadas, Peter Kleinman, and Doug Beegle.</i> Moderator: Tom Sims, University of Delaware |
| 12:30 – 1:30 PM | Lunch |
| 1:30 – 2:30 PM | Group Discussion: <i>Where does SERA-17 go from here?</i> Facilitator: Forbes Walker |
| 2:30 – 3:00 PM | Poster Session and Coffee Break |
| 3:00 – 4:30 PM | Workgroup meetings and reports, Forbes Walker |
| 4:30 – 4:45 PM | Bus ride back to hotel |

Dinner on your own Wednesday evening

Delmarva Peninsula Field Tour
Thursday, July 31, 2008

8:00 AM – 4:00 PM

Featuring Ag-drainage Research on Maryland's Coastal Plain

Featuring The Amazing Litter Injector

And

The Agri-Recycle Poultry Litter Pelletizing Plant

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| 8:00 AM | Bus departs Hilton Garden Inn for UMES, Princess Anne, MD, |
| 10:00 AM | University of Maryland – Eastern Shore Tour |
| 12:00 PM | Picnic Lunch at UMES |
| 12:30 PM | Depart UMES for Agri-Recycle Plant |
| 1:30 PM | Agri-Recycle Litter Pelletizing Plant Tour |
| 2:30 PM | Depart Agri-Recycle for Hotel |
| 4:00 PM | Arrive Hotel |
