

SERA-IEG 17 - Minutes
West Plam Beach, FL
August 4-6, 1996

SUNDAY FIELD TRIP: Eric Flaig and Karl Haven from the South Florida Water Management District hosted the Sunday field trip (see itinerary).

MONDAY:

Welcome and Introductions. Tommy Daniel introduced the agenda (see attached) to the approximately 40 individuals in attendance and thanked Drs. Flaig and Haven for a well received field trip.

SERA Mission/Objectives. Jerry Lemunyon reviewed the mission of the SERA-IEG Committee and asked for reports from the administrative advisors. Jerry announced the recent appointment of C. Allan Jones from Texas A&M University as a replacement for B. Daniels (Univ. Arkansas).

Maurice Horton USDA-CSREES
Michael D. Ouart Mississippi State University

SERA Working Group Reports. Reports were given by the respective task Working Groups leaders and instructions given for Tuesday's work session.

Tom Sims	Soil Testing	Working Group 1
Andrew Sharpley	Phosphours Transport	Working Group 2
Bob Stevens	Best Management Practices	Working Group 3
Wes Jarrell	Water Impacts	Working Group 4

SERA Committee Administration. Discussion was initiated as to the best way to administratively manage the SERA-IEG Committee. From the discussion the following was decided.

1. The meeting will be held annually with the location to vary geographically.
2. The Committee will remain as an information exchange group.
3. The Committee will be run by the Executive Officers composed of the past-Chair, Chair, and Chair-elect. The duties of the respective officers were identified as follows.
 - Past-Chair, serve as a resource person for the present chair and chair-elect.
 - Chair, establish and circulate the agenda for the meetings, appoint site committee and serve as ad hock member, chair annual meeting, and file annual report consisting of the minutes of annual meeting.
 - Chair-elect, take minutes of the annual meeting and submit them to the Chair to be included in the annual report. Maintain and update the SERA mailing list.
4. Efforts should be ongoing by all members of the Committee to maintain and enhance the interdisciplinary nature of the group. Disciplines needing input were identified as animal science, agricultural engineering, limnology, sociology, and stream

ecology. Local experts from the various disciplines, especially those identified, should be invited from the on site location of the annual meeting.

A site committee and officers committee was appointed to select the location of the next meeting and the selection of officers for 1997.

Lunch.

European Perspective.

Istavan Sistas Hungary
Bob Foy Northern Ireland

US Phosphorus Projects.

Wes Jarrell USDA-EPA Project, Waterbody Sensitivity
Stefanie Aschmann USDA-NRCS, Watershed Nutrient Balance
Chuck Lander USDA-NRCS, Conservation Planning
Roberta Parry EPA Programs
Larry Hauck Bosque River, Tarleton State Univ.
Brad Joern P Migration in Vadose Zone, Purdue Univ.
Don Goss National P Loss Inventory, Texas A&M University

TUESDAY:

Working Group Sessions and Reports. The Committee members chose one of the following Working Groups sessions to assist the chairperson in identifying the objectives and products to be produced the following year. The chairperson of the respective Working Group then reported back the Committee as a whole (see enclosed individual reports).

Soil Testing	Tom Sims	Working Group 1	
Phosphorus Transport		Andrew Sharpley	Working Group 2
BMPs	Bob Stevens	Working Group 3	
Water Impact	Wes Jarrell	Working Group 4	

SERA-17 IEG WWW Page. A consistent recommendation from the respective working groups was the need for a mechanism to disseminate information developed by the SERA-IEG Committee, as a result Steven Hodges (NC State) was selected as the individual (webmaster) to assist the group in developing a Webpage.

Committee Reports. The meeting for 1997 will be in Oregon and hosted by Wes Jarrell with help from Bob Stevens. The specific meeting dates will be arranged by Wes to fit local conditions and not to conflict with the International Soil and Plant Analysis meetings held in Bloomington (MN) on August 2-7. Executive Officers for 1997 are Tom Sims (past-Chair, Univ. of Delaware), Don Graetz (Chair, Univ. of Florida), and Frank Coale (Chair-elect, Univ. of Maryland).

Work Group 1
Soil Testing
Submitted by: Tom Sims, University of Delaware

1. Discussed the general objectives of the task group and reviewed possible activities that could address the following, previously established task actions:
 - Compare new and traditional soil test P methods for diverse soils.
 - Determine critical concentrations in runoff and leachate from agricultural land that promotes eutrophication.
 - Relate soil P adsorption capacity to readily available soil properties.
 - Establish the relation between soil test P levels and concentrations in runoff and leachate.

2. Agreed upon the following goals for 1996-1997:
 - Publish the regional bulletin Soil Testing for Phosphorus: Environmental Uses and Implications. A working draft of this bulletin was discussed by all authors at the meeting and a final draft is anticipated to be ready by 10/1/96. Also, a proposal describing the bulletin and requesting funding to support its publication will be sent immediately to Michael Ouart, administrative advisor to SERA-IEG 17.
 - Arrange for Internet publication of the SERA regional bulletin on soil testing by North Carolina State University. Dr. Steve Hodges of N.C. State University has arranged to establish a SERA-IEG 17 home page and to coordinate placement of this bulletin on the World Wide Web.
 - Develop a second bulletin, tentatively titled Environmental Tests for Phosphorus in Soils, Sediments, and Waters: A Critical Review of Current Methodologies. The purpose of this bulletin will be to review the many different tests now used for phosphorus and to point out the strengths and weaknesses of each. It is hoped that this bulletin could lead to the development of standard methods for these tests in the future. The goal in 1996-97 will be to compile a list of the tests currently used and details on the methods for as many tests as possible. Discussion of the pros and cons of each test will be a major goal of this task force at the 1997 SERA meeting. Dr. Gary Pierzynski of Kansas State University has agreed to compile the initial list of methods to be reviewed.
 - Participate in the preparation of a position paper to be issued by the SERA-IEG 17 group on the importance and value of agricultural phosphorus management to surface water protection. Dr. Wes Wood will represent the Soil Test group in the development of this position paper. Val Smith, Andrew Sharpley, Jerry Lemunyon, T.C. Daniel, et al. will assist in the writing of the position paper.

Work Group 2
Phosphorus Transport
Submitted by: Andrew Sharpley, UDSA-ARS, Pennsylvania

The group felt that the P Index needs to more reliably describe vulnerability across landscapes and at watershed rather than field scales. Also, we felt the Index needs to account for soluble P (SP) transport; at the moment, factors are more heavily weighted to particulate P (PP) than SP transport.

1. Variable source areas

We will attempt to redefine the land units the P Index needs to apply to a watershed scale. Rather than basing them on discrete field boundaries, we should consider areas of similar landscape properties, which influence hydrologic processes controlling runoff generation. For example:

- common crop type
- unique soils
- soil cover
- topography

This type of approach could be easily interfaced or adapted to GIS data bases and linkage with the spatial distribution of index rankings. The possibility of using a hydrography approach to define land units or polygons, rather than discrete fields, will be evaluated by Eric Flaig, South Florida Water Management District.

2. Soluble P transport

Currently, the index is more sensitive to P loss in particulate than soluble forms due to heavy weighting of the erosion factor. The group felt that the index may not adequately address vulnerability assessment where erosion is low but SP loss is high. Further, the index should at least estimate the proportion of P transported as SP and PP. The need for a SP factor will be evaluated by John Lory, University of Missouri Extension and other by comparison of index rankings and P loss from published watershed data. The SP factor should include:

- soil cover
- P placement
- application timing
- application method
- type of P applied

or some refinement of the current weighting of these factors already in the index. We will investigate if the proportion of total P loss as SP and PP can be determined as an inverse function of erosion.

3. Linkage with BMP and Water Impact Groups

One of the objectives of the index is to assess the effects of BMPs on P transport. It was felt that the Index may not in all cases, account for the effect of BMP implementation on a specific transport factor. Field testing of the Index will determine if there is a need and how it may be accomplished. Finally, proportioning of P in SP and PP forms may aid identification of the most appropriate BMP.

Work Group 3
Best Management Practices
Submitted by: Bob Stevens, Washington State University

The group decided to continue to develop and publish phosphorus BMPs. The list of 35 BMPs was revisited and two additional BMPs were added (tail water return flow ponds and wetlands). Preliminary authors were suggested for individual BMPs with contact people assigned.

It was decided that the first priority should be placing a significant number of the BMP sheets on the SERA-IEG 17 home page to be established by Dr. Steve Hodges at N.C. State University. This would make the BMP sheets available for printing at the state or local level while a source of funding to support a national printing is being found.

Anyone that is interested in helping write the series of BMPs should contact me at (509) 786-9231 or stevensr@wsu.edu. I am also looking for reviewers.

The group felt that a majority of the BMP sheets could be produced by the 1997 meeting. Future tasks were discussed. Development of possible training programs for phosphorus management was considered a high priority.

Work Group 4
Water Impact
Submitted by: Wes Jarrell, Oregon Graduate Institute

Since the 1995 meeting, a project has been developed to produce a report summarizing the critical aspects of the phosphorus cycle in water which must be evaluated by state environmental managers and planners, among others, in prioritizing the allocation of funds for land management. The report will

- (1) summarize the land-water connection and the aquatic P cycle in streams, lakes, and reservoirs;
- (2) discuss the major physical, chemical, and biological compartments and processes involving P in aquatic systems;
- (3) provide guidance in determining sources of problems in the water body;
- (4) summarize manipulations of the aquatic environment to improve conditions related to the P cycle. Later projects are envisioned to deal with the potential for landscape management to change the amount and forms of P delivered to water bodies, and a comparable pair of projects focusing on nitrogen.

Funds to develop the project have been provided to the Oregon Graduate Institute by both the US-EPA and the Natural Resource Conservation Service. The project will support

- (1) writing of the draft report by Wes Jarrell at OGI;
- (2) travel for attendees of the working session, where the draft report will be refined and critical issues resolved by a group of 10 - 12 experts;
- (3) report revision and printing.

Expertise represented will include soil scientists, limnologists, biologists, communication experts, hydrologists, and an agricultural economist. The working session is scheduled for October 1996, to be held near Washington, D.C. The final revision will be submitted to the NRCS and the EPA before December 31, 1996. In addition to the hard copy and bound report, a page on the World Wide Web will be established, with the expectation that it will be maintained and expanded over time as new information becomes available.

Plans for Publication

SERA Committee.

Title: Importance and Implication of Proper Phosphorus Management (tentative).

Type: Position paper

Length: Two pages

Format: Electronic and printed (forum section of journal)

Date: 1997

Work Group 1 - Soil Testing.

Title: Soil Testing for Phosphorus: Environmental Uses and Implications.

Type: Bulletin

Length: 15 pages, glossy

Format: Electronic (WWW Page) and printed

Date: 1997

Title: Environmental Tests for Phosphorus in Soils, Sediments, and Waters: a Critical Review of Current Methodologies.

Type: Bulletin

Length: 20 pages

Format: Electronic (WWW Page) and printed

Date: 1997/8

Work Group 3 - BMPs.

Title: 35 fact sheets on
Phosphorus Best Management Practices

Length: 2 to 3 pages

Format: Electronic (WWW Page) and print

Date: Electronic by spring 1997

Work Group 4 - Water Impact.

Title: Sensitivity of Aquatic Ecosystems to Changes in Phosphorus Inputs.

Length: 50 pages

Format: Electronic and printed

Date: 1997