

**Subcommittee on Sedimentation**  
**December 1, 2015**  
**Meeting**  
**USGS Office of Surface Water, Reston, VA**  
**Minutes**

Subcommittee on Sedimentation (SOS) Chair Amanda Cox called the meeting to order at 9:04 a.m. EST. The minutes were prepared by Amanda Cox. Present were:

- Joe Bell, Hydrologist, USGS, MD/DE/DC Water Science Center, Baltimore, MD
- Jerry Bernard, retired NRCS, SEDHYD Technical Program Coordinator, Stafford, VA
- Jennifer Bountry, Sedimentation and River Hydraulics Group, Bureau of Reclamation (Reclamation), Lakewood, CO
- Matt Collins, via conference call, Hydrologist, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA), Gloucester, MA
- Amanda Cox, Assistant Professor, Missouri Water Resources Research Institute (MWRRI), Saint Louis University, St. Louis, MO
- Allen Gellis, Research Geomorphologist, USGS, Baltimore, MD
- Doug Glysson, Retired Hydrologist, Office of Water Quality, U.S. Geological Survey (USGS), Reston, VA, SEDHYD Joint Conference Chair
- John Gray, Principal, Gray Sedimentology, Reston, VA
- Claudia Hoeft, via conference call, NRCS, Washington, DC
- Christopher Impellitteri, via WebEx, Associate National Program Director, Safe and Sustainable Water Resources, USGS, Cincinnati, OH
- Jo Ellen Johnson, NRCS, Washington, DC
- Mark Landers, Federal Interagency Sedimentation Project Chief and OSW, USGS, Atlanta, GA
- Eddy Langendoen, Watershed Physical Processes Research Unit; Agricultural Research Service; United States Department of Agriculture, Oxford, MS
- Marian Muste, Research Scientist, IHRA, Iowa City, IA
- Joseph Schubauer-Berigan, via conference call, Research Ecologist and Chief, Environmental Stressors Management Branch, USEPA, Office of Research and Development, National Risk Management Research Laboratory, Cincinnati, OH
- Katie Skalak, Research Hydrologist, USGS, Reston, VA
- Molly Wood, National Sediment Specialist, USGS Office of Surface Water, Boise ID

**Minutes from July 2015 SOS Meeting**

Cox

A motion was made by Jen Bountry to approve the July 23, 2015 minutes. The motion was seconded by Mark Landers and the minutes were approved unanimously.

**SEDHYD 2015 Planning Overview**

Glysson/Bernard/Bountry

**Discussion of Potential Locations and Costs for Next SEDHYD:**

- Nevada has been good option in past to keep costs low.

- USGS is doing a meeting for at least 400 people and has been doing research; San Diego was a good choice for up to 300 with low rates, but Reno ended up being the best option.
- Preference would be to have it somewhere more natural.
- Peppermill was nice compared to past locations. Peppermill worked well for 500 people.
- Denver only has 4 or 5 hotels that can handle conference of this size; Sheraton downtown but per diem is generally 50% more.
- Not always lowest bid, Riviera came in lower but ended up closing down. Fortunately, the Peppermill was selected instead.
- Location considerations include whether the hotel IS making money, potential for bankruptcy, when it was last refurbished, and electronics access.
- Do we have enough money in account to spend more to subsidize and hold it someplace nicer or east of Mississippi River? (John Gray)
- There has been some difficulty in getting agency approval to go to conference in Nevada from SOH members (Claudia)
- Nashville has brand new convention center
- Have to pay for rooms at convention centers which may drive cost up
- Advantage of hotels is may offer rooms for free
- State park may be a great option
- Destination lodge
- Last time looked at 4 cities: Reno, Las Vegas, Tucson (none submitted), and New Orleans (1 for July with estimated cost of \$133,000 for catering),
- Total cost of SED-HYD 2015 was \$170,000
- Ended up losing \$20,000 on the 2015 conference but that was goal to offset bank accounts
- Catering can be half of bill or more; last time close to \$80,000 which can be the major cost driver. Generally, catering costs at casinos is ~ 30% less than venues that are not casinos.
- AV costs have been historically a little lower than catering
- Cost of airfare and per diem should be considered when selecting a site

#### **Discussion of Attendance:**

- Number of attendees for April 2016 was a little over 400 people
- Plan for up to 600 people so have ability to expand if necessary
- Opening room for 700 people
- Breakout rooms for 150 people

#### **Discussion of Schedule and Other Limitations and Considerations:**

- If going to have conference in March-April 2019, then need a signed contract by July 2017
- Request for proposals and visitor convention bureaus by January 2017, ideally by fall 2016
- Have 2016 to plan where to go and where to look going
- SOS and SOH commitment to a 4-year cycle
  - The conference was moved because it was always occurring the same year as the National Water Quality Conference.

- Recommended to stay on an odd year to avoid conflict with National Water Quality Conference
- Wendy Norton is trying to remove the departmental approval process for interagency meetings, but the outcome of that effort is not yet known.
- The SOS/SOH has a \$25,000 credit at Peppermill from the last conference
  - Must be used within 3 years of conference
  - Mark Landers was organizing a meeting at the Peppermill; but was able to get credit within his own contract without having to use SOH-SOS credit/approval

**Notes regarding Planning Committee Membership and Roles:**

- Tim Randle volunteered to be chairman of conference
- People willing to serve on planning committee
  - Bank account
    - Mark Landers
    - Tim Randle – signatory for both SOS and SOH since Tim is Conference Chair
    - Need to identify a third person
  - SOH next meeting in January
    - Claudia Hoeft, NRCS, and Jerry Webb, USACE, are leaders for SOH SED-HYD Planning Committee
    - Victor Hom, NOAA
  - SOS members willing to serve
    - Joseph Schubauer-Berigan, Ph.D., EPA
    - Jo Ellen Johnson, NRCS
    - Meg Jonas, USACE
    - Amanda Cox, Saint Louis University

**Action Items:**

- Chair of site selection committee needs to send out requests for proposals to hotels.
  - Doug will give contacts for connections.
- Doug will send copy of timeframe to the Tim Randle.
- Site visits need to occur. For the last conference, the conference paid for Jerry and Doug to conduct the site visits as they were non-federal employees.
- Need to identify signatories for the SOH and SOS bank accounts that are active SOS-SOH members
  - Paula and Doug need to be removed as signatories for the accounts
  - Tim should be overall head of finance of two accounts since Jerry is retiring
  - Need a second signature on account and monitor bank statements – Mark Landers
  - Doug will need to contact banks to figure out process to transfer
- SOH and SOS should review request for proposals – earliest action item
  - Doug will be requested to provide information about the Krism Group contact
  - Doug will be requested to send prior RFP to review and update

## Reservoir Sustainability

Bountry

Progress on the Reservoir Sustainability Workshop was presented. A handout for a White Paper Outline was provided (attached to the minutes). More discussion was suggested to occur during the prospectus section of the agenda.

Workgroup would like to conduct one-hour webinars open to the public. They would like to begin the workshops in February and have the USGS live stream and record them so they can be posted to the SOS site. **Action Item:** Mark Landers willing to help coordinate USGS sponsored webinars.

There is a need to have an advocate on Capitol Hill for SOS Reservoir Sustainability efforts. **Action Item for Workgroup:** Need to confirm if Dave Wagner (White House Staffer) has retired and see who back filled for him for Sustainability and RESSED.

## Reservoir Sedimentation (RESSED and RSI)

Landers

The REservoir SEDimentation (RESSED database was last updated in 2014. The RESSED database has problems with duplication of data and inaccurate geospatial location of data (Dave Stewart is a contact for this topic). USACE began the Reservoir Sedimentation Information (RSI) program based on the structure of the National Levee Database and the hope is that RSI will be the future for reservoir sedimentation monitoring. Deborah Cooper presented paper at SED-HYD for RSI. SOS wants to encourage the USACE to make the database public. Action Item: Workgroup should ask Meg Jonas about the potential for public access or for a portion of the database to be publically accessible. Mark Landers suggested this is a huge goal for SOS and would like committee to encourage process for data management. Joseph Schubauer-Berigan inquired if there was any consideration for phosphorous or nitrification related to RESSED. John Gray indicated that those were not considered for RESSED because addressing sediment quantity was a large enough challenge for RESSED. Joe suggested that a link could be made between drinking water and phosphorus and nitrification.

## Federal Interagency Sedimentation Project

Landers

FISP contributed significantly to the SED-HYD conference with 14 papers related to FISP direct and sponsored research. One paper details the history and background of the FISP. FISP is working on new guidance on suspended sediment sampling under unique conditions on large where the sampler may not be deployed all the way to the channel bed. During the fall FISP meeting, ten proposals were evaluated for funded research. The projects funded this year include: CFD modeling to evaluate the accuracy of samplers using FLOW-3D (USGS); evaluation of why bag samplers do not perform as they do in laboratory flume studies (Penn State); double bubbler method; and the effects of changing mesh size on bedload sampling with a Helley Smith Sampler (CSU).” Over the last few years, several projects have focused on improving surrogate and direct methods for bedload transport measurement.

## **National Stream Morphology Data Exchange Proposals**

Collins

Matt Collins gave a brief history of the initiative and informed the group that the last active proposal to support an NSMDE pilot project, led by Marian Muste, was not successful through the USGS-NIWR solicitation. We learned this in August. Marian described how the competition was stiff, but the NSMDE proposal did not rank very well and actually ranked lower than it did in the 2013. Notably, it did not score well in the "relevance/importance" and "scientific merit" areas.

Team members on this proposal, and the earlier proposal to NASA lead by Amanda, are generally supportive of continuing to seek funding, but some have expressed that other funding sources may be more appropriate and should be investigated. Importantly, both Marian and Amanda indicated that they are not in a position to lead any new proposals.

Since the SOS-sponsored NSMDE workshop in 2011, the workgroup has recognized that funding is necessary for further progress. We have been unsuccessful, multiple times, with two separate proposals to two different funders. Given this situation, Matt opened a discussion about the future of the NSMDE initiative. Does the SOS have any new charges for the group? If not, should it remain an active workgroup?

Amanda asked if agencies are doing anything new in last few years with geomorphology data/databases. Matt mentioned the relatively recent, government-wide requirement to have federally-funded data available online. This changes the picture somewhat compared to 2011, but only partially since non-federal data are not covered. Katherine Skalak (?) thought that linking to national-scale geomorphology modeling initiatives may be a productive way forward via an NSF proposal. Allen Gellis asked if the group has thought of linking with people doing lidar work, e.g., USGS geography program? Matt noted that Jeff Simley was part of 2011 workshop.

Group agreed that Matt should poll the NSMDE work group, many of whom are not SOS members, to see if anyone is available and interested to champion a proposal and if they have ideas for promising funding sources. Meanwhile, Eddie will investigate whether he, or people he is collaborating with, can champion a revived NASA proposal. We will report back at the next meeting.

### **Technical Presentation:**

Impellitteri

### **EPA's Office of Research and Development's Current Matrix Research Program**

Two poster slides with information are attached.

### **Technical Presentation:**

Gellis

### **Sediment Budgets and Sediment Fingerprinting as Tools in Sediment Source and TMDL Assessments**

### **Technical Presentation:**

Bell

## **Backscatter as a Surrogate for Suspended Sediment, Nutrient, and Bacteria Concentrations in an Urban Stream within Rock Creek National Park, Washington D.C.**

The following is an abstract of Joe Bell's presentation:

Park, in Washington D.C. To accurately model suspended sediment, nutrient, and bacteria concentrations in Rock Creek, a robust surrogate is required. Robust surrogates are collected at frequencies that capture change, are absent of hysteresis effects, are capable of measuring large sampling volumes, and are resistant to physical and biological fouling. Backscatter (a measure of the reflectance of waves back to a source) from acoustic Doppler velocity meters (ADVM), operating on the principles of sound, is used as a robust surrogate for estimating continuous suspended sediment, nutrient, and bacteria concentrations over periods when discrete samples are not collected. However, due to rapidly changing conditions within urban streams, innovative approaches are required to install and collect backscatter data from deployed ADVM. In October 2014, the United States Geological Survey (USGS) began collecting velocity and backscatter data from two ADVM deployed in Rock Creek at the Joyce Road station to use as a surrogate for concentrations of suspended sediment, nutrients, and bacteria. ADVM and communication equipment were configured accordingly to take full advantage of ADVM multicell capabilities and provide two-way telemetry. Models derived using the USGS Surrogate Analysis Index Developer (SAID) tool returned backscatter as a significant ( $p$ -value  $< 0.1$ ) predictor variable for estimating in-stream concentrations of suspended sediment, total phosphorus, and *Escherichia coli*. Computed time series will be displayed to the public on the web at <http://nrtwq.usgs.gov/md/>. The use of multiple acoustic frequencies, 3000 and 1500 kHz, to measure suspended sediment grain size is currently being explored.

### **Tour of Reston Radiochemistry Lab:**

Skalak

Katie Skalak, USGS Research Hydrologist from Reston, VA gave a tour of the USGS Radiochemistry Lab.

### **Prospectus 2007 – 2012 update**

Jonas

- The prospectus was initiated in 2002 and updated in 2007
  - [Acswi.gov/sosProspectus2007\\_2012\\_online\\_12\\_18\\_2007.pdf](http://acswi.gov/sosProspectus2007_2012_online_12_18_2007.pdf)
- Need to make a list of major sediment issues confronting the federal sector
- Need to prepare a plan to pool and coordinate resources from agencies to accomplish steps
- Each agency should identify sediment issues questions, and follow up by sending an email to Meg Jonas. Some of the topics briefly identified during the meeting included:
  - Better and more informed sediment monitoring technologies (USGS)
  - Better connect sediment activities to societal needs (USGS)
  - Water quality and pollution and permitting through the EPA (Amanda)
  - Impact on infrastructure – e.g. federal highway administration (Amanda)
    - Sediment related hazards
    - There is a need for a Federal Highway Administration representative on the SOS
  - Linking sedimentation to resilience to flood events and healthy responses
  - Debris flows

- Sediment ecological impacts
  - Wetlands, transport of sediment to coast and accretion levels
- Sea level rise
- Ecological services
- Stormwater and wastewater treatment
- Nature-based techniques (natural infrastructure) to reduce natural disaster impacts
- Vulnerability to changes on coast in response to sea level rise or salt-water intrusion
- NPS or USFS rep?
- Impacts to vegetation communities
- Watershed sediment yield and effectiveness of sediment management practices
- Sediment source
- Sediment effects on public lands
  - BLM – grazing
- Wildfire impacts to sediment loads to drinking water supply
- Sediment tolerance in permitting
- Sediment management in urban systems and river corridor concept
- Revitalizing conceptual model of sediment source that used to show peak increase in sediment and then dropping off; data from Bay area because they built all the way up the landscape
- Sediment loading techniques – flow duration may not be appropriate and instead use event-based models
- Green infrastructure – is it working?
- Models have difficult time showing benefits due to accuracy limitations and large error range
- Are threshold channels necessary – can you allow fluvial processes; what is successful
  - A good paper was presented at SED-HYD on this topic
- Agriculture effects on streams
- NRCS dam removal /dam safety – how to evaluate if left in place versus removal
- Reactivation of sediment load release
  - Risk if left in place
  - Sediment quality
  - What do you do with sediment, do you have test like EPA?
- Canal and intake sedimentation
  - Old outdated literature
- Subcommittee will review categories of topics emailed to Meg to identify which areas need updates
- Sediment analysis for dam removal guideline
  - Meg Jonas would like to review
  - Jo would like to have NRCS review

### **Sediment Analysis for Dam Removal Guidelines**

Bountry

The sediment analysis for dam removal guidelines are being completed by Tim Randle and Jennifer Bountry. Meg Jonas and Jo Ellen Johnson are willing to provide a review of the document.

### **New Business**

Cox

Election of Vice Chair for next term: Tim nominated Meg Jonas for Vice Chair during the next SOS term and Mark Landers seconded the nomination. The vote was unanimously in support of electing her to Vice Chair. Meg will be contacted to inquire whether she is willing to accept the nomination.

### **Set Date of Spring 2016 Meeting**

Cox

The spring SOS meeting will be held in Denver and the date will be determined using a Doodle poll.

The meeting was adjourned at 4:20 EST