

Subcommittee on Sedimentation
June 26, 2013
Teleconference/WebEx Meeting
Final Minutes

Subcommittee on Sedimentation (SOS) Chair Marie Marshall Garsjo called the meeting to order at 11:04 a.m. EDT. The minutes were prepared by Amanda Cox, Vice Chair. Present were:

- Marie Marshall Garsjo, Chair, and retired geologist, Natural Resources Conservation Service (NRCS), Fort Worth, TX; SEDHYD FISC Technical Program Chair
- Jerry Bernard, retired NRCS, SEDHYD Technical Program Coordinator, Stafford, VA
- Amanda Cox, Research Scientist in Hydraulics Lab, Colorado Water Resources Research Institute, Colorado State University (CWRRI), Ft. Collins, CO
- Doug Glysson, Retired Hydrologist, Office of Water Quality, U.S. Geological Survey (USGS), Reston, VA, SEDHYD Joint Conference Chair
- Tim Randle, Manager of the Sedimentation and River Hydraulics Group, Bureau of Reclamation (BOR), Lakewood, CO
- Matt Römken, Director National Sedimentation Lab, and Researcher in erosion processes, Agricultural Research Center (ARS), Oxford MS
- Jenifer Bracewell, USGS, RESSED FilemakerPro Database Programming Team Member, Reston, VA
- Matt Collins, Hydrologist, National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA), Gloucester, MA
- John R. Gray, National Sediment Specialist, Office of Surface Water (OSW), USGS, Reston, VA
- Meg Jonas, Research Hydraulic Engineer, U.S. Army Corps of Engineers (USCOE), Alexandria, VA
- Lee Koss, National Lead for Water, Bureau of Land Management (BLM), Washington, D.C.
- Mark Landers, Federal Interagency Sedimentation Project Chief and OSW, USGS, Atlanta, GA
- Kevin Laurent, USGS RESSED FilemakerPro Project Database Management System Expert, USGS, Patuxent, MD
- Cole Rossi, BLM, Regional Water Quality Specialist and Salinity Coordinator, Salt Lake City, UT
- Casey Lee, USGS National Water-Quality Assessment (NAWQA) Program, Lawrence, KS
- George Kelly, Senior Manager, Dam Safety Technical Services, Tennessee Valley Authority (TVA), Chattanooga, TN

Minutes: The minutes from the March 27, 2013 teleconference were approved.

REServoir SEDimentation

John Gray and Kevin Laurent

PROGRESS

Website: RESSED Website (<http://ida.water.usgs.gov/ressed/>) was modified to reflect the port from the 'old' Access database management system to the Filemaker Pro database management system, and has been reviewed in an ad hoc manner by Jerry Bernard (NRCS-retired), James Falcone (USGS), and others, with mostly positive feedback.

Data Release: In response to the SOS decision to render RESSED data publically available, the website now includes an April 2013 data release in XML and JSON formats. Although we are aware that these data are being accessed and used, the number of those accessing the data is unknown to us.

Data Explorer: Kevin Laurent has developed an on-line “Data Explorer” module (http://ida.water.usgs.gov/ressed/data_explorer/index.cfm) that accesses the JSON-format file to provide overview information on the April 2013 content of RESSED.

COE District Data: The data are trickling in from the COE’s effort to have most of their Districts add all local reservoir data into separate RESSED runtime files. A test merge of the data into a RESSED Master file is planned based on the COE District data received to-date (one of the files is problematic; Jenifer Bracewell will discuss with Deborah Cooper).

Data Merge: Jenifer has started a 'Data Merge Procedures' document. Right now it's just a rough outline which will be edited as the best way(s) to merge the data while ensuring data integrity are worked out.

Project Support: The \$75,000 maintenance funds originally earmarked for RESSED through the USGS WaterSMART program were reduced to \$71,250 due to the sequester. We hope to receive \$75K in FY2014 for continued RESSED maintenance. An average of \$333K/year over five years is still sought for the full RESSED-21st century project.

PLANS

Data Merge: Complete data merge with whatever COE data we have by mid-to-late summer. Place new XML- and JSON-format files on website.

Data Explorer: Expand this option; input from the SOS is sought in this regard.

Public Update: This is a goal but the timetable is indeterminate given the present “maintenance” funding level.

Web Enabled Data Input: Transition from using the Runtime files for data input to a web enabled graphical user interface available for Federal agencies and other reservoir owners and managers to enter reservoir data into the RESSED system.

Reservoir Sustainability

Tim Randle

Reservoir sedimentation is an impending problem for the nation’s water-supply and flood-control reservoirs. Eventually the entire storage capacity of a reservoir may be filled with sediment, but other problems would become evident long before that:

- Burial of dam outlets and other water intakes.
- Aggradation of upstream tributary channels, which can lead to reduced conveyance capacity, increased flood stage, and increased ground water table (which can cause water logging and soil salinization).
- Burial of marinas and boat ramps.

- Reduction in surface area and/or depth for recreation.
- Sediment loads against the dam can result in increased dam safety risks from abrasion of outlets and spillways and loss of functioning outlets.

Loss of water-storage capacity over time will result in reduced reservoir reliability. This impact will be greatest in regions exposed to multiple-year droughts, which may be exacerbated by the effects of climate change.

Owners and operators of reservoirs should be encouraged to develop and implement long-term reservoir sediment management plans to achieve sustainability or plan for the eventual retirement of the dam. Without a sustainable sediment-management plan, reservoir sedimentation can lead to inter-generational inequities. For example, the first generation may work hard to plan, design, and construct a dam and begin storing water. The second or third generation derives the benefits from the project, repays the project capital costs, and pays for the operation and maintenance costs. If reservoir sedimentation eventually negates the project benefits, the last generation is stuck with the retirement costs, which can be substantial.

The following resolutions are proposed to help the nation plan for reservoir sedimentation:

SOS Task Committee on Reservoir Sedimentation

A SOS Task Committee on Reservoir Sedimentation and Sustainability is proposed based on a recommendation from the SOS-sponsored workshop on Reservoir Sustainability (July 2012). This Task Committee, a standing workgroup of the SOS, would convene and manage a National Reservoir Sedimentation Team (NRST) responsible to accomplish the following tasks:

- Provide training on reservoir sedimentation and sustainability
 - Monitoring and reservoir-capacity surveys
 - Assessment of projected duration of reservoir usefulness
 - Options to increase duration of reservoir usefulness
- Provide a web-based resource to help answer questions from agencies and the public on reservoir sedimentation and sustainability.
- Develop interagency protocols for web-based storage and retrieval of reservoir survey datasets.
- Encourage storage of existing and newly acquired capacity information in a national reservoir database.
- Formulate a white paper on reservoir sedimentation and sustainability.

The NRST would be comprised of representatives from the BOR, USCOE, NRCS, other SOS-member organizations as appropriate, and non-Federal reservoir experts. Most business conducted by the Task Committee would be accomplished remotely through voice and electronic communications.

Training on reservoir sedimentation and sustainability would be provided through short courses or workshops at the Federal Interagency Sedimentation Conference and other times when possible. These short courses and workshops would be open to the public.

A list of frequently asked questions about reservoir sedimentation and sustainability would be developed and posted on the SOS website. In addition, the public would be able to post other questions on the SOS Reservoir Sedimentation (RESIS) Database website (<http://ida.water.usgs.gov/ressed/>) that the National Reservoir Sedimentation Team would try to help answer.

The SOS RESSED database is an excellent tool for sharing summary information on reservoir sedimentation. Agencies are also encouraged to make high-density reservoir-sedimentation datasets available to the public through RESSED. The Task Committee would develop protocols for web-based storage and retrieval of reservoir survey datasets that would be hosted on individual agency web sites.

SOS Reservoir Sustainability Resolution

The Subcommittee on Sedimentation encourages all Federal agencies to develop long-term sediment management plans for the reservoirs that they own or manage by 2030. These long-term reservoir plans should include either the implementation of sustainable sediment management practices or eventual retirement of the dam. The costs for implementing either sustainable sediment management practices or retirement plans should be paid for by the current beneficiaries of the reservoirs, which could include the American public.

Federal agencies should begin developing sustainable reservoir sediment management plans now for one or two reservoirs per year on a pilot basis. From this experience, an interagency technical guideline can be developed for preparing sustainable reservoir sedimentation plans.

SEDHYD 2015 Planning Overview

Doug Glysson/Jerry Bernard

SEDHYD 2015: Doug Glysson and Jerry Bernard gave a brief update on the status of the next Joint Conference. After some discussion with Wendy Norton (USGS Advisory Council on Water Information [ACWI] Executive Secretary) and given the current Federal budget and travel problems, the SEDHYD Executive Committee made the decision to move the conference to 2015. Because of a clause that the site selection committee had negotiated into the current contract, we were able to move the conference dates without any penalties. The new dates are April 19-23, 2015. Jerry discussed the plan for the abstracts and the three options that authors who have already submitted abstracts have and these options are outlined on the SEDHYD web site (<http://www.sedhyd.org>):

The abstracts received will be retained for the SEDHYD 2015. Authors may make the following choices, regarding their submitted abstracts:

- Withdraw current abstract
- Keep current abstract for SEDHYD 2015
- Replace abstract in response to SEDHYD 2015 Call for Papers
- Submit new abstract(s)

Authors may indicate their choices by contacting either of the Technical Program Chairs for the joint conference. See their contact information below.

Doug briefly described the status of the Operation group in determining what programs will be used and how we will be handling the registration and the collection of abstracts, papers, and presentations. Paula Makar is heading up this effort. Jerry and Doug will work on updating the time line, and Doug will work with Wendy to start the approval process through the Department of the Interior. (Note: the DOI has a new policy that all meetings of more than 30 individuals that are sponsored by any of the DOI's FACA committees or their subcommittees must obtain department-level approval.) Doug pointed out that we still need coordinators for the field trips and exhibits and asked anyone that was interested to contact him.

National Stream Morphology Data Exchange Proposals

Amanda Cox

The proposal lead by Dr. Marian Muste submitted to the National Institutes for Water Resources (NIWR) - USGS National Competitive Grants, like all other proposals submitted in 2013, was not funded. No proposals were funded this year through the program due to sequestration.

A proposal was submitted to NASA on March 22, 2013, in response to the Novel Research in Earth Science solicitation, which supports proposal which do not align with existing solicitations that may still benefit NASA's Earth Science Program. The program manager recommended that the proposal be submitted to a new solicitation, Terrestrial Hydrology, which aligned well with the proposal.

The NASA proposal team includes Amanda Cox (Colorado State University), Marian Muste and Ibrahim Demir (University of Iowa), Venkatesh Merward (Purdue), Laura Keefer (University of Illinois), and Faith Fitzpatrick (USGS). The Program Manager for the Terrestrial Hydrology Program and the lead Hydrologist for the Surface Water and Ocean Topography (SWOT) Mission were contacted and the proposal team received positive feedback regarding the proposal concept. A revised proposal will be submitted to NASA in July in response to the Terrestrial Hydrology solicitation.

Career Recognition Award for John Gray

Marie Garsjo

John was presented a plaque and letter from Wendy Norton, ACWI, at the meeting. The letter, a photograph of the plaque, and other photographs can be found by navigating under: <http://acwi.gov/sos/awards/sos-cr-awards.html>.

Prospectus 2007 – 2012 update

Marie Garsjo and Meg Jonas

The 2007-2012 Prospectus expired last year. It was a revision of the "Prospectus of the Subcommittee on Sedimentation for the years 2002-2006", which states at the beginning that it was: "approved by the SOS December 13, 2003, with acknowledgement that some updates are needed". Several SOS members have worked on reformatting and updating it, however it requires an interdisciplinary approach that was difficult to schedule. Our nation has serious issues dealing with sedimentation, some of which have risen in national priority since the prospectus was last updated. This can be an important and useful document describing the condition of our country as it relates to issues of sedimentation, and it deserves a thorough undertaking. Meg Jonas has requested funding for six weeks in which to complete it, for which we thank her.

ACWI Monitoring challenges update

Marie Garsjo

The ACWI Workgroup on Monitoring Challenges has almost completed its response to Anne Castle's Nov 9, 2012, request that we provide advice and recommendations to help USGS continue to provide quality monitoring science within the framework of constrained financial resources. The workgroup provided Anne's office with a draft on June 25. The Acting AD for Water joined the workgroup on the next teleconference held on July 8 and provided several comments and questions (in written form). The workgroup will address these issues and hopes to provide the formal recommendations in late July.

Subcommittee Membership

Marie Garsjo

George Kelley from the TVA stated that they should be a member of the SOS and he will try to ensure that someone represents TVA on the SOS in the future.

Through recent communication, Dr. Bradley Doorn, NASA HQ, Science Mission Directorate, Earth Science Division, WDC expressed interest in participating in the SOS.

Federal Interagency Sedimentation Project

Mark Landers

Mark Landers is replacing Doug Glysson as the USGS alternate representative. Mark is the Federal Interagency Sedimentation Project (FISP) Chief. He provided a brief review of three newly released FISP Technical memorandums available at: <http://water.usgs.gov/fisp/publications.html>. The three new memoranda are:

- MEMORANDUM 2013.01: BEST PRACTICES FOR FISP BAG SAMPLER INTAKE EFFICIENCY TESTS AND OPERATIONAL VELOCITIES. This memorandum recommends that users of Federal Interagency Sedimentation Project (FISP) collapsible-bag samplers: Perform quality-assurance field tests of bag-sampler intake efficiency before each set of samples is collected during site visits; and incorporate the revised, temperature-indexed minimum stream velocities (Table 1) for bag-samplers into data-collection practices where suspended sediment may include a significant percentage of sand-sized material.
- MEMORANDUM 2013.02: FISP APPROVAL OF THE USE OF FIELD-DEPLOYED LISST-SERIES LASER-DIFFRACTION ANALYZERS FOR VOLUMETRIC CONCENTRATION AND PARTICLE-SIZE DATA. This memorandum sanctions the use of laser-diffraction analyzers for environmental measurement of suspended-sediment volumetric concentration (SSC_v) and volumetric particle size distribution (PSD_v); with important qualifications. The availability of this technology for in-situ measurement enables high temporal and spatial resolution measurements of PSD_v and associated SSC_v . This unprecedented capability promises to substantially improve and expand upon the amount and usefulness of PSD_v and SSC_v data collected as part of operational sediment- and water-quality monitoring and (or) research programs. The memorandum also characterizes major distinctions between laser-diffraction-based volumetric and gravimetric-based sediment measurements.
- MEMORANDUM 2013.03: RECOMMENDATION FOR COLLECTING AT LEAST TWO DEPTH-INTEGRATIONS PER VERTICAL TO REDUCT UNCERTAINTY AS PART OF CROSS-SECTION SAMPLING WITH FISP DEPTH-INTEGRATING SUSPENDED-SEDIMENT SAMPLERS. This memorandum provides recommendations on the number of sampling depth-integrations per vertical for sediment

sampling. The memorandum also discusses findings from [USGS Professional 1774](#), “Field Evaluation of the Error Arising from Inadequate Time Averaging in the Standard Use of Depth-Integrating Suspended-Sediment Samplers” by David J. Topping, David M. Rubin, Scott A. Wright, and Theodore S. Melis.

USGS National Water-Quality Assessment Program (NAWQA) Sediment Web Portal Lee

Casey Lee, USGS, Lawrence, KS provided the following summary:

The USGS Survey National Water Quality Assessment Program (NAWQA) is nearing completion of a retrospective analysis of existing USGS suspended-sediment data. This project had four primary tasks:

- Recovery of known data sources not available to the public
- Aggregation of sediment and sediment related data (i.e. stream flow, grain size, and geospatial data)
- Quality control
- Data summary

Two products from this effort are planned for release over the next two to three months. The first is a USGS sediment data portal that will provide access to a suspended-sediment and associated data. The second is a data report which summarizes the process and results of the retrospective analysis. The goal of the presentation is to inform SOS members of this effort and solicit input from SOS-member agencies on the sediment data portal. An introductory meeting and demonstration of the initial functionality of the sediment portal is scheduled for July 11th at 10:00 am CDT. After this meeting a draft version of the portal will be provided for comment. So far we have received commitments from the following individuals/agencies:

Matt Collins: NOAA
Jim Selegean/Meg Jonas: USACE
Noah Snyder/Aakash Ahamed: Boston College
Coleen Rossi: BLM
Mark Landers: USGS

New Business

Marie Garsjo

Lee Koss suggested that Cole Rossi could give a presentation on what they are doing on salinity and sedimentation in the Colorado River basin at the next meeting. She is the Great Basin Salinity Coordinator and Regional Water Quality Specialist. Cole Rossi, BLM's Water Quality and Salinity specialist.

Next Meeting

Marie Garsjo

John Gray agreed to host the next meeting in the Washington, D.C. area. The week of October 21 is the target date for the next meeting. A doodle poll will be created to identify the best date for the meeting.

The meeting was adjourned at 2:25 p.m. EDT