

October 28, 2015
ACWI Annual Meeting

Subcommittee on Sedimentation

Amanda Cox, PhD, PE – Chair

Missouri Water Resources Research Center

Tim Randle, PhD, PE – Vice-Chair

US Bureau of Reclamation

Meg Jonas, MS, PE – presenter

US Army Corps of Engineers

Purpose

- The Subcommittee on Sedimentation of the Advisory Committee on Water Information promotes collaboration on the sediment issues; and advances in information gathering, storing, and sharing; for decision making about natural resources management and environmental protection.

SOS Committee Members

- ARS
- ASCE
- CUAHSI
- BLM
- CWRRI
- FERC
- FHWA
- FS
- MWRRRC
- NCED
- NMFS
- NPS
- NRCS
- USBR
- TVA
- UCOWR
- USACE
- USEPA
- USGS

Outline of SOS Efforts

- Joint Federal Interagency Sedimentation and Hydrologic Modeling (SEDHYD) Conference – held April 2015
 - Doug Glysson (USGS)
- NSMD – The National Stream Morphology Database
 - Matt Collins (NOAA)
- Reservoir Sedimentation Database
 - USACE, USBR, USGS collaboration
- Reservoir Sustainability
 - Tim Randle (USBR)
- Dam Removal Analysis Guidelines for Sediment
 - Tim Randle (USBR)

Joint Federal Interagency Sedimentation and Hydrologic Modeling (SEDHYD) Conference

- SEDHYD took place April 19-25, 2015 in Reno, NV
- Conference approval was obtained with enormous effort
- By the numbers:
 - 10th FISC (first in 1947), 5th FIHMC
 - 400 registrants
 - 240 technical presentations, 31 posters, 11 computer model demonstrations
 - 11 short courses, 3 local field trips
 - All FISC proceedings to be posted on SOS website
- Next SEDHYD planned for 2019. SOS and SOH have already formed work groups.

National Stream Morphology Data Exchange - NSMDE

- **Need: development of national common reporting standards and a strategy for exchanging consistent stream morphology observations**
- **Primarily channel and floodplain geometry and bed material size measurements**
- **Wide range of applications and uses for stream morphology data**
 - culvert/ bridge design
 - rainfall- runoff modeling
 - flood inundation mapping
 - channel stability/sediment source investigations
 - climate change studies
 - navigation studies
 - habitat assessments
 - landscape change research



NSMDE Proposals



- Convened an ad hoc subcommittee to make specific recommendations for advancing a national stream morphology data exchange
- Pursuing a fully-funded study to more deeply examine the data needs of the community and existing databases
 - Critically review available morphology data and their origin
 - Critically review databases and information systems relevant to the NSMD
 - Conceptualize and formulate the design specifications for the NSMD
 - Assemble an NSMD blueprint for an actual watershed using existing resources
- Several development proposals have been submitted, and the subcommittee is considering responding to other solicitations

RESSED/RSI

- Original Reservoir Sedimentation Database included 6,618 surveys of 1,824 reservoirs
- Based on a paper form from the Soil Conservation Service (Form 34)
- RESSED is online (FileMaker Pro)
- Available in 3 formats
 - Microsoft Access Database
 - Interactive Map
 - Online Master List of Data Sheets

RSI (Reservoir Sedimentation Information)

- Oracle database
- Store and display to assist with evaluation of sedimentation trends and reservoir life expectancy with respect to a changing climate
- Capability of storing and analyzing survey data
- Collaborative effort with USBR

Uses of Reservoir Sedimentation Data

- Determine remaining useful life of reservoirs
- Determine impacts to public water supply and other purposes
- Fine-tune water releases to minimize capacity-loss effects on flooding
- Design reservoir sediment-storage allocations
- Manage sediment deposits
- Rehabilitating aging or damaged structures
- Designing sediment-slucing and other sediment-management structures
- Sediment yield data; complements fluvial sediment gage data
- Estimating mass of captured sediment and associated solid-phase constituents, such as carbon
- Assessing resource conditions related to land cover, land use, and rates of erosion and sediment production



Reservoir Sustainability

- Goal: to develop and describe practical options for managing sediment for long-term reservoir sustainability in the US
- Task Committee on Reservoir Sedimentation and Sustainability (composed of SOS members)
- National Reservoir Sedimentation and Sustainability Team – NRSST (wider membership). Raise awareness of reservoir sedimentation issues and present ideas for achieving reservoir sustainability
- Technical updates and webinars
- **Reservoir Sustainability Resolution (approved by ACWI after last year's meeting)**



From USBR Website “Delta Behind Matilija Dam, from Paul Jenkin, Surf Rider”

NRSST Tasks

- Provide training on reservoir sedimentation and sustainability
 - Reservoir sediment and capacity surveys
 - Projection of future reservoir sedimentation and impacts to facilities
 - Options to achieve reservoir sustainability or increase the useful life of the reservoir
- Provide a web-based resource to help answer questions from agencies and the public
- Develop interagency protocols for web-based storage and retrieval of reservoir survey datasets
- Encourage storage of existing and newly acquired capacity information in the national reservoir database
- Formulate a white paper on reservoir sedimentation and sustainability

Outline of NRSST

- Membership approximately 20
- Federal, state, academia
- First short course on Reservoir Sustainability at SEDHYD
- Organized technical sessions on reservoir sedimentation and sustainability at SEDHYD
- Development of list of FAQs and answers
- White paper is a high priority

Reservoir Sedimentation

Matilija Dam, CA



From USBR Website "Delta Behind Matilija Dam, from Paul Jenkin, Surf Rider"

Reservoir Sedimentation

Paionia Reservoir, CO



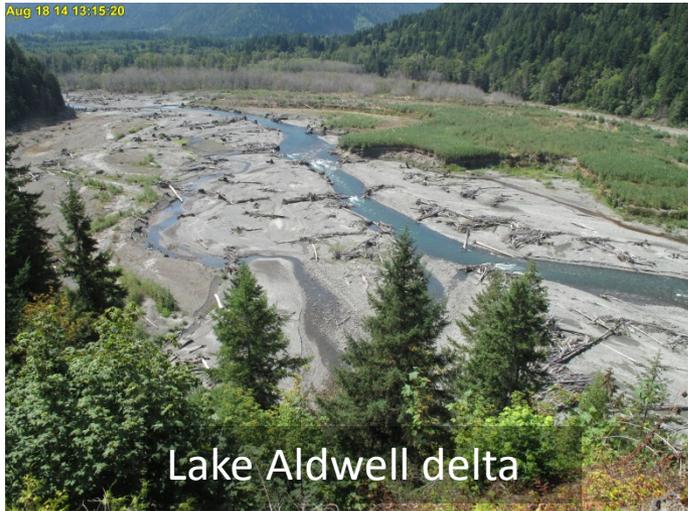
Dam Removal Analysis Guidelines for Sediment

Guideline Objective

- Provide a decision framework to determine the level of assessment needed to evaluate dam removal sediment impacts.
- Determine the type and level of
 - data collection,
 - analyses,
 - modeling, and
 - monitoring necessary

Dam Removal Analysis Guidelines for Sediment

- The guidelines are nearing completion as they incorporate new information learned from the Elwha River Restoration Project.



Thank You