

Flood Risk Management Newsletter

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14th Annual CIRP Technology Transfer Workshop CANCELLED

The 14th Annual CIRP Technology Transfer Workshop, tentatively scheduled for 11-13 February 2013 in the Jacksonville District office, has been cancelled. Stay tuned for rescheduling. (POC: Julie.D.Rosati@usace.army.mil)

Sandy News

Here's the link to the Corps' Sandy website:

<http://www.usace.army.mil/Missions/EmergencyOperations/HurricaneSeason/Sandy.aspx> .

Note that FEMA also has a Sandy website: <https://www.fema.gov/sandy> . The FEMA link is available from the Corps' Sandy website, along with Sandy sites from specific Districts and Divisions.

FCSDR IPR

Cary Talbot, ERDC-CHL

The Flood & Coastal Storm Damage Reduction (FCSDR) R&D program held its Internal Progress Review (IPR) in September 2012 at the Coastal & Hydraulics Laboratory in Vicksburg, MS. Principle investigators, or their designees, for the 30 work units participated in person or via

telecom and webinar to report on FY12 accomplishments and progress. For FY12 the FCSDR program had five focus areas:

- 1) Risk & Uncertainty/Alternatives Analysis
- 2) Coastal Systems
- 3) Watershed Management
- 4) Resilient Infrastructure, and
- 5) Emergency Management.

Also, a Basic Research effort investigating techniques for the efficient resolution of complex transport phenomena concluded in FY12. Below are some highlighted accomplishments.

Risk & Uncertainty/Alternatives Analysis:

- Life-cycle cost analysis capability added to HEC-WAT/FRA (Watershed Analysis Tool/Flood Risk Assessment) compute option along with demonstration of distributed computing capability
- Numerous capabilities added to HEC-FIA (Flood Impact Assessment) tool, including double warning & mobilization methodology, safe location methodology & design, uncertainty in population distribution, 2D hydraulics importer, and FIA to FDA structure converter
- Beach-*fx* v1.1 released with guidelines for probabilistic life-cycle cost analysis
- Web-based tool of the coastal storm database (CSTORM-DB) released and used in Hurricane Isaac inundation forecasting

Coastal Systems:

- Developed numerical flume capability correlated to physical flume models that provided significant advances in research on wave dissipation by vegetation for coastal protection
- Coupled AdH & STWAVE models and implemented near-shore sediment transport into SEDLIB and AdH as further components of CSTORM-MS
- Demonstrated simultaneous flow and sediment transport in 2D/3D hybrid grid

Watershed Management:

- Fielded the Reservoir Sedimentation Database, a joint project with the USGS and USBR
- Released GSSHA with improved snow melt simulation capability, including vertical and lateral melt water flow through snowpack
- Documented efficient and effective GSSHA watershed model calibration methods
- Developed new cohesive transport methods for unsteady flow simulation in HEC-RAS
- Modified dam and gate functionality in unsteady sediment transport in HEC-RAS

Resilient Infrastructure:

- Published 4-volume research report on effects of woody vegetation on levee performance
- Technical Report published with database of soil-structure interaction from detailed analyses of I-wall movement

Emergency Management:

- Developed and deployed the Mobile Information Collector Architecture (MICA) tool, a smartphone-based data collection device which combines a camera, GPS, video, audio and text documentation capability with direct uploading to Emergency Operation Centers (EOC) for real-time field data collection. Awarded the USACE Innovation of the Year award for 2012 and used in numerous 2011 and 2012 emergency response operations including Mississippi & Missouri River flood fights and hurricanes Isaac and Sandy.

For further information regarding the FCSDR program and its products, contact Cary Talbot, FCSDR Program Manager, 601-634-2625. Cary.A.Talbot@usace.army.mil .

REMR Documents and Videos are now on a website!

Maureen K. Corcoran, ERDC-G&L

The Repair, Evaluation, Maintenance, and Rehabilitation (REMR) Research Program was initiated in 1984 and was brought to completion in 1998. Technology developed under this 14-year effort focused on seven problem areas: coastal, concrete and steel, electrical and mechanical, environmental, geotechnical, hydraulic, and operations management. The primary goal of this research effort was to develop affordable technology that would extend the service life of the Nation's aging infrastructure. Technology transfer is available in the forms of bulletins, material data sheets, technical notes, technical reports, and videos. These documents and videos are now available at <http://wri.usace.army.mil/remr/>.

What is the National Flood Risk Management Program?

Stephanie Bray, HQ

“to lead a collaborative, comprehensive, and sustainable national flood risk management program to improve public safety and reduce flood damages to the nation”

The National Flood Risk Management Program (NFRMP) vision statement, above, has two key components. First is the concept of leading the effort. Many agencies have missions, authorities, or responsibilities that in some way relate to flood risk management; however, before the NFRMP no group had worked to take the lead in organizing these agencies, missions, authorities, and regulations. USACE recognized the need for a leader who could bring together the various agencies, and has taken the initiative to be that leader.

The second key component is the concept of a comprehensive flood risk management program. As a comprehensive program, the NFRMP aligns vertically and horizontally, across political boundaries, and across watersheds, projects, and systems. The NFRMP does this by bringing together various Communities of Practice (CoPs) internally, by connecting with other Federal partners and their missions as well as various NGOs, and by connecting with state, local, and tribal partners through the Silver Jackets program.

The NFRMP vision statement is very broad and aspirational, begging the question – how can it possibly be met? The NFRMP is an integrating and synchronizing program that brings together the many partners and stakeholders who share responsibility for managing flood risk. This requires looking across the life cycle of flood risk management and identifying the partners and programs that influence or impact each stage of that life cycle. Ultimately, identifying and bringing together all partners and programs will lead to the development of a national strategy to manage risks from flood and coastal storm events. A national strategy will be necessary, as no one level of government has sole authority or responsibility for flood risk management. A national strategy will ensure that all participants understand their roles and meet their responsibilities so threats to human life, to property, to the economy, and to the environment can be better managed and decreased.

NFRMP fully implemented will result in a change within USACE in how we think about and manage flood risk, and a broader change in how the national flood risk management community approaches flood risk management. The definition of flood risk management focuses on managing both the flood waters and the floodplains to reduce the consequences. The traditional role of USACE has been in managing the flood waters through building projects. However, USACE also has a major role in recovery after a flood, which allows us the opportunity to assist in developing the recovery in such a way that the consequences of future events will be reduced, making our country more resilient.

A fully implemented NFRMP will also result in the development of more sustainable and integrated solutions to the nation's flood risk challenges. These solutions will be developed using a collaborative approach and by focusing on systems, rather than by through a series of incremental decisions. USACE will maximize its contribution to flood risk management through coordination and integration of the full range of expertise existing in USACE CoPs. An understanding of the various Federal and non-Federal programs and of resources available across the life-cycle of flood risk management will result in better, more risk-informed decisions. This will also allow for identification of further opportunities for collaboration within and across agencies, especially on a watershed or regional basis, as well as the identification of and development of collaborative solutions to conflicting policies, programs, and interests. If the NFRMP is fully implemented, the flood risk management community as a whole will be able to innovatively use and leverage financial resources, avoid redundant or conflicting efforts, and make a positive difference for Americans and their communities.

USACE flood risk managers have a number of roles and responsibilities within USACE and with other partners and the public. Within USACE, the role of the flood risk manager is to ensure that coordination and collaboration between the CoPs is occurring on a regular basis. Numerous CoPs participate in activities that relate to flood risk management: planning structural and nonstructural flood risk management projects; inspecting the conditions of existing flood risk management projects; rehabilitating levees and other flood risk management projects damaged in flood events; conducting emergency measures; and providing technical and planning support to state partners. Each flood risk manager may not have a direct role in each of these activities, but each should coordinate with those involved in these projects to ensure the overall goals of flood risk management are being considered and met. With other partners and the public, USACE flood risk managers must be able to provide current and accurate flood risk management

information at national, watershed, state, tribal, and local levels. They must also be able to improve public awareness and understanding of flood hazards and risk. The USACE FRM must be able to identify and assess the hazards associated with flood risk management infrastructure projects. The USACE FRM must also promote strategic partnerships and alliances and coordinate flood risk management policies, programs, and activities with all other partners. Along with this, they must be able to improve their capabilities to collaboratively deliver and sustain flood risk management services and implement collaborative watershed or system risk management strategies with all other partners. Through these activities, the USACE FRM will participate in managing and reducing flood risk for the nation, improving public safety, reducing economic and environmental damage due to flood events, reducing disruption due to flood events and overall improving quality of life in flood hazard areas. For more information about the NFRMP, please contact Stephanie Bray (Stephanie.N.Bray@usace.army.mil).

USACE Levee Safety Community of Practice: News to Use

Jennifer Dunn, IWR

In August 2012 over 120 Levee Safety Officers, Levee Safety Program Managers and invited guests met to share updates on program activities and consistency of messages within the program, to discuss impacts of policies and procedures, and to discuss ongoing efforts as the U.S. Army Corps of Engineers (USACE) culture adjusts to include risk methodologies.

The USACE established the National Flood Risk Management Program for the purpose of integrating and synchronizing USACE flood risk management programs and activities, both internally and with counterpart activities of the Department of Homeland Security, Federal Emergency Management Agency (FEMA), other Federal agencies, state organizations, and regional and local agencies. While FRM touches a wide array of Communities of Practice (CoPs), one of the most visible flood risk management programs within USACE is the Levee Safety Program.

The risk framework – assessing risk, communicating risk and managing risk – is at the foundation of the Levee Safety Program. While USACE has a responsibility to assess risks and benefits associated with levee systems in the USACE program, this assessment would be more meaningful with accompanying communication and management of risk and benefits. A significant lesson learned is that the best communication efforts involve the levee system sponsor throughout both routine and non-routine processes. Further, when communication is uncoordinated or lacking, or when sponsor expectations are not met, the impacts can be high and the effort required to fix the situation quite costly. FEMA’s FloodSmart program presents a number of lessons learned from their experience in communicating both flood risk and the need for flood insurance. They have also developed testimonials and interactive tools for other organizations’ use. The program’s key challenge has been overcoming denial of risk. Do the comments “the risk stops at a line on a flood map,” “I’m already covered – my homeowner’s policy covers flood,” and “if my home does flood, it’s no big deal” sound familiar? Through research and message testing, FloodSmart has found the most successful means of overcoming this challenge is to vividly personalize the consequences of flooding. This can be done by illustrating the threat to financial security (“I could lose my savings”), threat to way of life (“I

could lose my home, my possessions, my business”), and avoiding regret (“Floods are dirty and cleanup will be horrible, I’ll kick myself for not having insurance”).

Other influential factors in successful communication include (a) communicating when people are most aware of floods (e.g., map changes, levee discussions, flood likelihood); (b) recognizing that risk communication is an ongoing conversation not a one-time presentation; and (c) focusing on actions to take immediately that will avoid negative consequences later. Shareable tools to communicate general flood risk and the NFIP, including a cost of flooding estimator, are available for download at www.FloodSmart.gov at the community resource tab. Tools such as fact sheets and StrongPoints on topics including risk assessment and risk-informed decision-making and interim risk reduction measures specifically developed for communicating flood risk associated with levee systems are available through the Public Affairs Office Sharepoint site. (Sharepoint sites are accessible only by Corps personnel; others interested should contact their Silver Jackets Coordinator and/or Levee Safety Program Manager.) A comprehensive fact sheet for each specific levee system will be developed by the District Levee Safety Program Manager.

Over the last 9 months, the Levee Safety Program has engaged in planning and product development, stakeholder engagement, and vetting to develop effective communication of the risks and benefits associated with levee systems, including the Levee Safety Action Classification (LSAC). Final leadership vetting is expected soon. Moving forward, an initial 43 levee systems will serve as pilots. Lessons learned in federal interagency coordination and stakeholder feedback will inform communication of the risks and benefits associated with additional levee systems. Both during the pilots and additional levee system risk communication, Flood Risk Managers and Silver Jackets Coordinators are asked to take on a role in coordinating the interagency communication of risk, as well as interagency planning and implementation of interim risk reduction measures in a shared responsibility context. Flood Risk Managers, Silver Jackets Coordinators and Levee Safety Program Managers were asked to discuss the revised Levee Safety path forward with state teams, and plan their District’s specific actions together with PAO and Planning, at a minimum. For more information, contact your District Levee Safety Program Manager, Flood Risk Program Manager and/or Silver Jackets Coordinator (www.nfrmp.us/state).

Flood Risk Management Program Website Redesigned
Elizabeth Bourget, IWR

The redesigned [Flood Risk Management Program website](#) is now available! The site features updated content, more extensive links to program partners and new audience-based navigation features that give users options on how they search for material. Revisions to the content were made after considering suggestions offered during a series of listening sessions with Federal agencies, state agency representatives, national associations, and others. Suggestions on the redesigned website are welcome.

More revisions are anticipated over the coming months as additional phases of work are completed. Those phases include transitioning the redesigned website to a new USACE-wide delivery system and enhancing the Silver Jackets website in light of suggestions received during

listening sessions and the 2012 Flood Risk Management and Silver Jackets workshop. (POC: Elizabeth Bourget, Elizabeth.C.Bourget@usace.army.mil)

Knowledge Notes: 2011 Great East Japan Earthquake and Tsunami

As part of the *Learning from Megadisasters* project sponsored by the Government of Japan and the World Bank, “[knowledge notes](#)” are available online regarding the 2011 Great East Japan earthquake and tsunami. The knowledge notes analyze and synthesize what worked, what did not, and why, and offer recommendations for developing countries that face similar risks and vulnerabilities. The knowledge notes constitute the first phase of the project and are grouped into the following six themes:

- [Structural measures](#)
- [Nonstructural measures](#)
- [Emergency response](#)
- [Reconstruction planning](#)
- [Hazard and risk information and decision making](#)
- [Economics of disaster risk, risk management, and risk financing.](#)

An [executive summary](#) and [brochure](#) are also available. The knowledge notes provide a basis for knowledge sharing and exchanges with developing countries, experts, and practitioners. They were prepared by more than 40 Japanese and international experts, assisted by 50 advisers and reviewers including the Director of Civil Works, U.S. Army Corps of Engineers, who was a member of an independent external review team coordinated by the Earthquake Engineering Research Institute. (POC: Elizabeth Bourget, Elizabeth.C.Bourget@usace.army.mil)

USACE and FEMA Hold Joint Regional Field Meeting in MVD **Scott Whitney, MVD Regional Flood Risk Manager**

In September, Headquarters and Regional leaders from FEMA and USACE came together for a meeting at the Engineering Research and Development Center (ERDC) in Vicksburg, MS. This "Field Meeting" included representatives from USACE HQ/MVD/district staff and FEMA HQ and Regions IV, V, VI, VII and VIII. The meeting focused primarily on the mitigation and preparedness half of the FRM life cycle. Objectives of the joint meeting were to: 1) develop a clear understanding of each agencies roles and responsibilities; 2) provide a forum to discuss how to jointly help communities understand their flood risk and how to manage it; 3) establish processes for our agencies to more effectively communicate and coordinate and to resolve conflicts that occur between our agencies as a result of differences in policies, procedures, or regulations; and 4) determine how to best engage when community issues involve both agencies.

Participants presented a series of case studies to illustrate recent USACE/FEMA collaborations and lessons learned. Hank DeHann, USACE Rock Island District, presented on the Upper Mississippi River (UMR) collaborations, focusing on the UMR 2008 flood buyouts, levee setbacks, nonstructural repairs, and Silver Jackets. Jeanine Pettersen, FEMA Region VIII,

discussed collaborations in North Dakota, focusing on post-flood removal of temporary levees. Durund Elzey, USACE New Orleans District, and Matt DuBois, FEMA Region VI, presented jointly on coastal collaborations following past and current hurricanes. Mike Vieira, FEMA Region IV, presented on the Lake Okeechobee Flood Insurance Rate Maps (FIRMs). Finally, Beth Freeman, FEMA Region VII, shared a poster on the Cedar Falls community buyouts. Through discussion of these case studies, numerous successful collaborations between the agencies were highlighted, as were some of the challenges that still remain between the agencies within this region.

The meeting concluded with a discussion of next steps for the working relationship between the two agencies. The focus of this discussion was on future application of the lessons that have been learned through the case studies shared. The purpose of this was to ensure that the two agencies continue to coordinate and collaborate successfully through future challenges that arise. (POC: Scott Whitney, Scott.D.Whitney@usace.army.mil)

Comments Welcome:
Draft Document - Approaches for Demonstrating Measurable Benefits from Silver Jackets Pilot Projects
Elizabeth Bourget, IWR

The Silver Jackets program provides a formal and consistent strategy for an interagency approach to planning and implementing measures to reduce the risks associated with flooding and other natural hazards. State-led teams partner with federal and state agencies, including the U.S. Army Corps of Engineers and the Federal Emergency Management Agency, to address the state's flood risk management priorities. The program seeks to reduce flood risk, improve understanding and efficiencies among agencies, and increase intergovernmental collaboration and synergy.

Since September 2011 the Corps has funded 33 Silver Jackets interagency projects, with budgets ranging from \$20,000 to \$145,000. The interagency projects cover a variety of activities and address various aspects of the flood risk management life-cycle. The projects also illustrate the benefits of inter-governmental/-agency approaches, with projects demonstrating flood risk reduction and leveraging resources invested by others.

These project teams were asked to document, by project completion and commensurate with project scope and budget, measurable benefits in three general categories: actions resulting from the project; risks reduced; and dollars saved (including future obligations). From a program perspective, quantifying these benefits where possible, and qualitatively "telling the story" where not, are seen as critical to conveying the value of the program, especially to those outside the flood risk management field.

Nearly all the projects entail significant leveraging of resources, and teams are documenting the contributions along with the benefits of the inter-agency approaches and collaboration they reflect. Documenting projects' risk reduction benefits appears to pose a somewhat greater challenge. In perhaps its simplest form, the question being posed to teams is, "How can we show

that people *did* take action as a result of the project, and *how* did those actions reduce flood risk?”

To assist current and future teams specifically, and possibly flood risk managers generally, the approaches being used by these projects were compiled and summarized from teams’ interim products. The resulting working draft document presents information in two ways: how projects reduce/manage flood risk, prompt action, and reduce future expenditures; and categorized by project type. Examples show how teams in general are answering the call to demonstrate how projects reduce/manage flood risk, prompt action, and reduce future expenditures. Detailed methods with references are provided where available. Critical thinking is required not only in applying the approaches presented, but also for addressing any gaps (with logic used to fill the gaps) to show how the project has been effective.

The [working draft document](#) was provided to all teams and made available at the August 2012 Flood Risk Management and Silver Jackets workshop. It is also available on the Silver Jackets website (www.nfrmp.us/state/) in the “Tool Box.” The document is expected to remain in working draft form while interagency projects are completed so it can be refined and the approaches can be expanded. Consideration is also being given to reviewing literature, guidance, and case studies that could supplement and place in a broader national context the work being done through the projects. Comments on the working draft document are welcome, and can be sent to Elizabeth.C.Bourget@usace.army.mil .

Other Links – Information, Newsletters, Fun Stuff

Silver Jackets newsletter is available on the **Silver Jackets** website – <http://www.nfrmp.us/state/>

CIRP Newsletters are available at <http://cirp.usace.army.mil/news/>

The National Ocean Council’s portal for data, information, and tools to support people engaged in planning for the future of the ocean, our coasts, and the Great Lakes. The NOC hopes this sited becomes a one-stop hub to support planners and to provide useful information to the public.
<http://www.data.gov/ocean>

The New Orleans District has a Hurricane and Storm Damage Risk Reduction System (HSDRRS) website which contains a wealth of information.
<http://www.mvn.usace.army.mil/hps2/>

Subscribe – Unsubscribe – Feedback

To subscribe/unsubscribe: <http://operations.usace.army.mil/flood.cfm>.

We would love your input – recommended article length is ½ to 1 page. Articles should be submitted to Doyle L. Jones, Canvassing Editor, Doyle.L.Jones@usace.army.mil.

We would also appreciate your feedback. Contact Dinah McComas, Managing Editor, Dinah.N.McComas@usace.army.mil or Doyle Jones.

FY13 PROSPECT COURSES

Advanced Steady Flow with HEC-RAS	Davis, CA	3 Jun 2013 – 7 Jun 2013
Coastal Project Planning	Kitty Hawk, NC	22 Apr 2013 – 26 Apr 2013 10 Jun 2013 – 14 Jun 2013
Dam Safety	Grenada, MS	4 Feb 2013 – 7 Feb 2013 4 Mar 2013 – 7 Mar 2013 29 Apr 2013 – 2 May 2013 10 Jun 2013 – 13 Jun 2013
Dam Safety	Nashville, TN	8 Apr 2013 – 11 Apr 2013
Hydraulics And Hydrology For Dam Safety Studies	Davis, CA	11 Mar 2013 – 15 Mar 2013
Risk Analysis For Flood Risk Management	Davis, CA	25 Feb 2013 – 1 Mar 2013
Seismic Stability Of Earthen Dams	Huntsville, AL	15 Apr 2013 – 19 Apr 2013
Streambank Erosion And Protection	Davis, CA	18 Mar 2013 – 22 Mar 2013
For more information: http://ulc.usace.army.mil		

Conferences

This listing is for information only and is not a complete list of FRM-related meetings. These meetings are not endorsed by the Corps of Engineers unless specifically stated. If we have failed to list a conference/meeting/symposium that would be of interest to the Flood Risk Management community, please forward the conference details to us.

21-24 January 2013 – Gulf of Mexico Oil Spill & Ecosystem Science Conference – New Orleans, LA - <http://www.gulfresearchinitiative.org/news-and-events/gulf-of-mexico-oil-spill-ecosystem-science-conference/>

13-15 February 2013 – National Conference on Beach Preservation Technology – Jacksonville, FL - www.fsbpa.com/techconference.htm

15-17 January 2013 – 13th National Conference on Science, Policy and the Environment – Washington, DC – <http://www.environmentaldisasters.net/>



26-28 February 2013 – ASBPA Coastal Summit – Washington, DC -
http://www.coastalconference.org/h20_2013/index.php

11-12 April 2013 – Port & Terminal Technology 2013/ 5th International USA Conference & Exhibition – Virginia -

25-28 March 2013 – 2013 National Hurricane Conference – New Orleans, LA -
www.hurricanemeeting.com

9-11 April 2013 – 3rd International Conference on Physical Coastal Processes, Management and Engineering – Gran Canaria, Spain - <http://www.wessex.ac.uk/coastal2013?e=3-184019>

14-19 April 2013 – Coastal Processes and Environments Under Sea-Level Rise and Changing Climate: Science to Inform Management – Galveston, TX -
<http://www.geosociety.org/penrose/13Texas.htm>

19-23 May 2013 – ASCE Environmental and Water Resources Institute Congress – Cincinnati, OH - <http://content.asce.org/conferences/ewri2013/index.html>

21 – 23 May 2013– 7th International Conference on Sustainable Water Resources Management – New Forest, UK – <http://www.wessex.ac.uk/wrm2013cfp.html>

22-24 May 2013 – 7th International Conference on River Basin Management including all aspects of Hydrology, Ecology, Environmental Management, Flood Plains and Wetlands – New Forest, UK – <http://www.wessex.ac.uk/rbm2013cfp.html>

29-31 May 2013 – Headwaters to Ocean (H2O) Conference – San Diego, CA -
http://www.coastalconference.org/h20_2013/index.php

3-6 June 2013 – National Hydrologic Warning Council 10th Training Conference and Exposition – Ponte Vedra, FL -
http://www.hydrologicwarning.org/content.aspx?page_id=22&club_id=617218&module_id=109790

9-14 June 2013 – ASFPM 37th Annual National Conference – Hartford, CT –
<http://www.floods.org>

10-13 June 2013 – Oceans'13 – MTS/IEEE Bergen – Norway –
www.oceans13mtsieeebergen.org

8-12 July 2013 – ESRI International User Conference – San Diego, CA -
http://www.esri.com/events/user-conference/index.html?WT.mc_id=EmailCampaign14659

21-25 July 2013 – International Congress for Conservation Biology – Baltimore, MD -
<https://www.conbio.org/mini-sites/iccb-2013>

29 July-2 August 2013 – 5th National Conference on Ecosystem Restoration (NCER) – Chicago, IL - www.conference.ifas.ufl.edu/NCER2013

4-9 August 2013 – 98th Annual Meeting of the Ecological Society of America – Minneapolis, MN – <http://www.esa.org/minneapolis>

4-6 September 2013 – Water and Society 2013 – 2nd International Conference on Water and Society – New Forest, UK - <http://www.wessex.ac.uk/watersoc2013?e=2-183374>

9-11 September 2013 – Northeast Beaches Conference – Galloway, NJ – <http://nsbpa.org>

23 -27 September 2013 – Oceans 2013 MTS/IEEE – San Diego, CA - www.oceans13mtsieeesandiego.org

23-27 September 2013 – PIANC – SMART Rivers Conference – Maastricht, The Netherlands, <http://smartrivers2013.org/home>

6-11 October 2013 – 5th World Conference on Ecological Restoration – Madison, WI - <http://www.ser2013.org/>

22-25 October 2013 – ASBPA National Coastal Conference – South Padre Island, TX

1-6 June 2014 – ASFPM 38th Annual National Conference – Seattle, WA – <http://www.floods.org>

14-19 September 2014 – Oceans 2014 MTS/IEEE – St. John's, Newfoundland and Labrador, Canada – www.oceans14mtsieestjohns.org