

Flood Risk Management Newsletter

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Focusing on: Flood Risk Management on the International Scene

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CHL Support for Romania's Integrated Coastal Zone Management Program

Julie Dean Rosati, Nicholas C. Kraus, CHL

In 2008, a Cooperative Research and Development Agreement (CRADA) was established between the ERDC Coastal and Hydraulics Laboratory (CHL) and Black and Veatch, Inc., (B&V) to assist in developing an Integrated Coastal Zone Management Program for the Romanian coast. This CRADA provides for collaborative research and development related to water resources engineering between CHL and B&V. Romania is developing initiatives to improve its coast to promote a free-market system and meet environmental standards, requirements of the European Union. As a part of the collaborative project with B&V, CHL employees Mitchell Brown, Nicholas C. Kraus, Andrew Morang, and Julie Rosati developed instructional materials and a report for assisting the Romanian government in their improvements of the coastline.

In July 2008, Julie Rosati traveled to Romania with a team from B&V. They briefed the Ministry of Environment and Sustainable Development about U.S. coastal experiences, CHL

numerical and physical modeling capabilities, and example applications of regional circulation, wave, and sediment transport models to portions of the Romanian coast. The field team joined Romanian researchers to tour the Danube Delta and portions of the coastline (Figure 1).

The Romanian coast faces the Black Sea and is approximately 240 km long (Figure 2). The coastal morphology of the northern portion (from Mamaia north) is dominated by the Danube River Delta, characterized by eroding sandy beaches at some locations and sand spits. The southern portion is characterized by rocky cliffs. The Danube Delta is the largest wetland in Europe and home to approximately 300 species of birds and 90 species of fish.

Hydropower and flood-control works on the Danube River have reduced overall sand supply to the coast. Construction of ports and other coastal structures has blocked sand from down-drift beaches, causing local erosion. The main causes of erosion are cutoff of sediment supply from the Danube Delta and local blockage of sand movement. There is limited data available on the waves, currents, and beach morphology with which to conduct coastal engineering projects.

Chronic erosion along the coast of Romania limits the tourism industry and is also a concern for maintenance of public infrastructure. Rehabilitation of the coast is considered as one means for demonstrating a free-market economy, a requirement of the EU. Beach construction and modern sand management are means of promoting tourism and protecting the inhabitants, environment, and public infrastructure.

CHL and B&V recommended a Regional Sediment Management (RSM) approach be taken and applied in a demonstration project to develop functional designs for a selected area that would hold potential for major economic and environmental coastal rehabilitation. It was suggested preliminarily that the area of Mamaia, the coastal hotel district, be considered because of the existence of tourism industry, hotels, and proximity to Constanța. The final report



Figure 1. Field Team at the Sulina Jetty Lighthouse, Romania, July 2008. Standing from left to right: Julie Rosati (CHL), Adrian "Pongo" Stanica (GeoEcoMar, Romania), John Roberge (Roberge Engineering), Boat Captain, Paul Ginther (B&V); Kneeling: Roger Kuhns and Neal Gruber, B&V



Figure 2. Location map for coast of Romania and Danube River Delta

included an overview of applicable U.S. Army Corps of Engineers models and tools, discussion of U.S. coastal experiences relevant to the Romanian coast, a conceptual sediment budget for the Romanian coast based on existing literature, data needs for modeling and decision-support, and recommendations for an institutional framework for coastal management. The final report was submitted to the Romanian Ministry in November, 2008, and it is presently being reviewed. POC: Julie Rosati (Julie.D.Rosati@usace.army.mil).

Autumn 2010 International Policy-Oriented Discussions

Lisa Bourget, IWR

Planning has begun within the Corps for international policy-oriented discussions in late 2010 on collaborative frameworks for achieving common objectives in flood risk management. Given the desired policy focus, the event will likely be held in or near Washington, D.C., ideally drawing from around the world leaders in the development and application of flood risk management. The event is envisioned to be highly interactive, with size and format designed to facilitate discussions. Objectives include helping participants draw on, and learn from, various international experiences; examining the integration of technical, policy, strategy, and action; discussing practical approaches for collaboration; and documenting the insights and lessons learned from the discussions. (POC: Lisa Bourget, elizabeth.c.bourget@usace.army.mil)

Saint-Louis, Senegal, Erosion Study

Kevin Barry, Doyle Jones, CHL

Kevin Barry of the Coastal and Hydraulics Laboratory recently traveled to Saint-Louis, Senegal (West Africa). Barry's visit was made at the request of the Civil Military Support Element managing the Humanitarian Assistance Program for the Office of Defense Cooperation. He visited for a first hand assessment of the erosion problem concerning the growth of a breach made in the barrier island (spit) just south of the city of Saint-Louis. The Government of Senegal had created the breach to allow the Senegal River to flow to the ocean and to prevent flooding. However, the breach caused extreme erosion that was a potential risk to the city of Saint-Louis.

The reconnaissance trip to the breach was used to collect data, better understand the system and to determine the most cost efficient way to address the problem. The Escoffier analysis, a semi-empirical method that has been used extensively since 1940 to evaluate the cross-sectional stability of breaches, was used to analysis the breach and the erosion in the area.

After the Escoffier analysis further study is warranted to determine the best course to manage the system. The system's managers are currently faced with the decision whether to deepen and harden the inlet (retaining the benefits to the city's fishermen and for protection against flooding) or to allow the system to restore itself to its natural condition (translating the inlet down to the end of the spit). POC: Kevin M. Barry, Kevin.M.Barry@usace.army.mil.

National Flood Risk Management Program Overview

The purpose of the Flood Risk Management Program (FRMP) is to integrate and synchronize the ongoing, diverse flood risk management projects, programs and authorities of the U.S. Army Corps of Engineers (USACE) with counterpart projects, programs and authorities of the Federal Emergency Management Agency (FEMA), other federal, state, regional and local agencies.

USACE is a leader in managing the nation's flood risks through its programs and authorities to 1) plan structural and nonstructural projects to manage flood risks, 2) inspect the condition of existing flood management infrastructure, 3) provide technical and planning support to states and communities, 4) conduct advance emergency measures to alleviate impending flooding, and 5) rehabilitate levees and other flood management infrastructure damaged by flooding.

Consistent with USACE Campaign Plan objectives, the FRMP overall long-term objective is to develop an integrated national flood risk management strategy to reduce risks to the public, property or the environment caused by flood and coastal storm events.

Current focus areas include:

- Collaboration with FEMA to support flood hazard mapping and levee certification
- Establishment of state level intergovernmental coordination groups (Silver Jackets)
- Development of policy initiatives and studies, including wise use of floodplains study and flood risk policy summit.
- International flood risk collaboration (United Kingdom & Holland).
- Emphasis on nonstructural solutions as an integral part of flood risk management.

For more information, visit www.iwr.usace.army.mil/nfrmp/. POC: Brian Rast, Brian.T.Rast@usace.army.mil.

Crisis Management IV – A Flooding Exercise in Guyana

Marcelo Salles, HQ

In February 2009, Marcelo Salles, USACE Liaison Officer to the U.S. Southern Command (USSOUTHCOM), was asked to assist with USSOUTHCOM's Science and Technology Directorate annual series of experiments, Crisis Management IV. These experiments seek to explore new technology that is highly beneficial and easily transferable to partner nations in South and Central America and the Caribbean (countries that comprise U.S. Southern Command's area of focus). This year's CM IV's theme was Flood Management in Guyana. Guyana fights annual battles with floods of varying degrees. The U.S. Military Group (USMILGP) suggested that one goal be that by the end of the experiment, the Guyana Crisis Disaster Commission (CDC) be equipped with new technology tools to enable them to better address flood mitigation and response.

With the theme being Flood Management; USSOUTHCOM's Herb Warden, the lead staff officer for the experiment, called upon USACE to provide the expertise and fidelity to CM IV. Mr. Salles became an early addition to the CM IV team and brought with him Steve

Collinsworth, ERDC's Liaison for work in the Americas and Caribbean, and Andy Bruzewicz, the HQUSACE Program Manager for the Civil Military Emergency Preparedness (CMEP) Program. Andy brought into the team 2 members of USACE's Hydrologic Engineer Center (from USACE's Institute for Water Resources), Cameron Ackerman and Mark Jensen.

Other partners in this experiment/exercise were: Florida International University (FIU), USAID, Guyana University (Engineering Department), and Guyana's CDC.

The experiment was divided into 3 separate phases. Phase I is fact finding, local data gathering, site surveys and inspections of flood control structures. Phase II will be a table-top exercise including the use of HEC flood software and the training of local Guyana Engineer University professors and engineers from CDC on the use of the software. This phase will take place in Guyana in the June/July timeframe. Additionally, USSOUTHCOM will bring other technologies into the experiment such as health technologies related to water-borne diseases. Finally, Phase III will consist of a Stability Operations Seminar at USSOUTHCOM, where the country of Guyana's senior leadership and that of USSOUTHCOM will be briefed on results of the experiment and on recommendations about possible future courses of action, as well as other stability operations technology covered during this experiment.

USACE's support in this flood management experiment will have a lasting positive impact on Guyana's ability to deal with its annual floods. USACE's support to USSOUTHCOM is also of vital importance to our National Security and our Theater Security Cooperation.

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Exploration of Risk-Based Flood Management Approaches

Lisa Bourget, IWR

On March 20, Steven Stockton, USACE Director of Civil Works, and Bob Pietrowsky, Director of the USACE Institute for Water Resources, attended a multi-lateral meeting held in conjunction with the World Water Forum. The purpose of the meeting was to consider launching an effort to explore risk-based flood management approaches as being practiced and developed primarily in the Netherlands, Japan, the United States, and the United Kingdom, leading to the joint development of a "best practices" document.

Participants expressed interest in examining case studies, two from each country (ideally one riverine and one coastal), to document risk-based flood management approaches. Approaches to be explored would encompass a broad spectrum of flood risks on project and system/catchment levels, and would address a comprehensive array of consequences, including both economic and non-economic considerations. These approaches would anticipate changing risks over time, including climate change, social change, and environmental change, and take a life-cycle approach. They would also be appropriate for a variety of governance structures – local, regional and national level – suitable for political discussion and decision-making in each participating country, and aimed at better managing flood risks.

The proposed effort is one result of formal and informal bilateral coordination mechanisms between the Corps of Engineers and the Dutch Ministry of Transport and Public Works and Water; the Japanese Ministry of Land, Infrastructure, Transport and Tourism; and the United

Kingdom Environment Agency. Each organization has experience in developing and implementing risk-based approaches for flood risk management.

Participants are considering and finalizing draft Terms of Reference to guide the multi-lateral effort. The next meeting is expected to focus on a more in-depth exchange of background and experiences with flood risk management approaches in the participating countries, drawing from selected case studies. The best practices document is expected to be completed by early 2011 and to be presented at the 5th International Conference on Flood Management in Tsukuba Science City, Japan, that fall. POC: Lisa Bourget, elizabeth.c.bourget@usace.army.mil.

USACE Participates in Urban Flood Management Workshop in India

S. A. Grant, ERDC-UK

The Indian National Disaster Management Authority (NDMA) and USAID/India cosponsored a workshop entitled, “National Guidelines for Urban Flooding Disaster Management: Scientific, Technological, and Administrative Challenges.” The objective of the workshop was to provide the US contribution to the drafting by NDMA of Guidelines on Urban Flood Disaster Management. The technical program was developed by Jack Davis and Bill Curtis of ERDC CHL’s Technical Directors Office. The NDMA vice-chairman and the Union Minister for Urban Development gave remarks at the opening ceremonies, which were well attended by representatives of the Indian media. The workshop attracted officials from union, state, and local governments all over India as well as the military, academic and commercial sectors. The U.S. delegation was headed by Hon. John Paul Woodley, Jr., Assistant Secretary of the Army (Civil Works). Six USACE team-members (Jeff Harris and Pete Rabbon from HEC, Andy Bruzewicz from HQ, USACE, Susan Durden from IWR, Dave Finnegan from ERDC, and Eric Thaut from SPD) and Al Goodman from Association of State Floodplain Managers made presentations at the workshop. The workshop was the first DoD-funded humanitarian assistance-disaster reduction event held in India. At the concluding session the U.S. and Indian delegations agreed on the following points:

1. Continued discussions between the two countries would be of mutual benefit. The points of contact for the NDMA and USACE and will be Professor Kapil Gupta and Steve Grant, respectively.
2. The U.S. delegations’ contribution to the NDMA guidelines on Urban Flood Management will be submitted by Dr. Jack Davis via e-mail to Professor Kapil Gupta not later than 31 January 2009.
3. The ASA(CW) invited a delegation from NDMA to attend the 14-16 April 2009 Senior Leadership Seminar, which is held by USACE and FEMA before each hurricane season. NDMA was unable to accept this invitation since the several delegation members are academics who were unable to travel until after May, the end of the academic year.
4. NDMA and USACE will attempt to arrange a study group to USACE facilities in the United States. Sites likely to be visited are the Hydrologic Engineering Center, Davis, CA; the

U.S. Army Engineer Research and Development Center, Vicksburg, MS; and both the USACE and FEMA Headquarters, Washington, DC.

5. NDMA and the USACE will explore collaboration on, but not limited to:
 - a. Risk-management pilot projects at one inland and one coastal major metropolitan area;
 - b. Rapid embankment (levee) repair;
 - c. Storm-surge modeling;
 - d. Integrating water-quality modeling into urban flood management;
 - e. Flood forecasting;
 - f. Interstate river system management; and
 - g. Training the Indian trainers or personnel in the USACE modeling software.

POC: Steven Grant, Steven.A.Grant@usace.army.mil.

The Mekong River Commission and USACE

James Ligh, POD

Although a half a world apart, the Mekong River Commission (MRC) and USACE have a growing relationship to help develop better planning and decision making tools.

The MRC includes four charter member countries (Thailand, Cambodia, Lao DPR, and Vietnam) and two dialogue members (The Peoples' Republic of China and Myanmar). The purpose of the MRC is to provide joint management of the Mekong's water resources and the development of its economic potential. The lower Mekong River Basin is home to approximately 60 million people and over 100 different ethnic groups. The Mekong River Basin is approximately 795, 000 square KM (equivalent to France and Germany together).

The Mekong River is 2700 miles (4350 km) long. It starts in the Tibet plateau and the southern Qinhai province in China, and flows through six distinct geographic regions. The Mekong River Basin produces rice to feed 300 million people a year. It is a breeding habitat for over 1300 species of fish. Only the Amazon River has more biodiversity. Its fisheries are an economic mainstay representing 20 per cent of all fish caught in the world's inland waterways. The Mekong serves 25 major ports and has the potential to generate 30,000 megawatts of hydropower. The Tonle Sap Lake and River System of the Mekong was designed by UNESCO as a World Biosphere Reserve.

USACE and the MRC are working together on how to best develop planning processes and decision making tools to better manage the trans-boundary, multi-purpose and ecological needs of the river. USACE experience in water resource planning, public involvement, risk management, and conflict resolution as well as alternate dispute resolution can help provide the MRC alternative perspectives and strategies.

In May 2008 a MRC senior delegation visited the Northwest Division's Columbia River Basin to better understand U.S. approaches to multi-use (hydropower, inland navigation, fishery management, tribal and environmental issues) water planning and management.

In June 2008 the Institute for Water Resources (IWR) provided a course in Thailand to the MRC working staff on Alternate Dispute Resolution (ADR) to help develop a framework in resolving trans-boundary water issues. Follow-on courses on ADR and water resource planning have been requested through Dr. Jerry DelliPriscoli, IWR.

Also in June 2008, the Pacific Ocean Division (POD) Commander attended the MRC Annual Flood Forum held in Cambodia and gave a presentation on Risk Management/ Lessons Learned from Hurricane Katrina. In September, POD coordinated two experts from ERDC on fishery migration and fishery passage through turbines and dam barriers and a hydropower specialist from NWD to participate in an MRC workshop in Lao.

This relationship is expected to continue as USAID has renewed its funding to IWR to support the MRC. POC: James Ligh, James.K.Ligh@usace.army.mil.

The Columbia River Treaty and Flood Risk Management

James D. Barton, NWD

The Columbia River, the fourth largest river on the continent as measured by average annual flow, generates more power than any other river in North America. While its headwaters originate in British Columbia, only about 15 percent of the 259,500 square miles of the Columbia River Basin is actually located in Canada. Yet the Canadian waters account for about 38 percent of the average annual volume, and up to 50 percent of the peak flood waters, that flow by The Dalles Dam on the Columbia River between Oregon and Washington. In the 1940s, officials from both the United States and Canada began a long process to seek a joint solution to the flooding caused by the unregulated Columbia River and to the postwar demand for greater energy resources. That effort culminated in the Columbia River Treaty, an international agreement between Canada and the United States of America for the cooperative development of water resources regulation in the upper Columbia River Basin. It was signed in 1961 and implemented in 1964. The Treaty has served as a model of international cooperation since 1964, bringing significant flood damage reduction and power generation benefits to both countries.

One of the major reasons for the Treaty was to improve flood risk management in the Columbia River Basin. In 1948, a spring flood caused major damage from Trail, British Columbia, to Vanport, OR. Vanport, the second largest city in Oregon at that time, was completely destroyed. The flood displaced 30,000 people from their homes and caused more than 50 deaths. The magnitude of the flood event served as a trigger for action and added a sense of urgency to international discussions of flood control. The United States and Canada collaborated to identify a preferred method – a coordinated development plan – that would address Columbia River Basin flooding and still meet the region’s increasing demands for energy.

The Treaty created two “entities” to implement the Treaty — a U.S. Entity and a Canadian Entity. The U.S. Entity, created by the President, consists of the Administrator of the Bonneville Power Administration (chair) and the Northwestern Division Engineer of the U.S. Army Corps of Engineers. The Canadian Entity, appointed by the Canadian Federal Cabinet, is the British Columbia Hydro and Power Authority (B.C. Hydro). The Corps primary focus within the Treaty is on flood risk management.

A main component of the Treaty called for Canada to develop reservoirs in the higher reaches of the Columbia Basin sufficient to provide 15.5 million acre-feet of water storage. To do this, Canada built three dams: Duncan (1968), Hugh Keenleyside (also referred to as Arrow) (1969) and Mica (1973). The Treaty also allowed the United States an option to build Libby Dam on the Kootenai River, a tributary of the Columbia River, in Montana. Construction on Libby Dam, whose reservoir Lake Koocanusa backs 42 miles into Canada, began in 1966 and was completed in 1973. Together, these four dams more than doubled the storage capacity of the Columbia River Basin at the time. The Treaty also requires the United States and Canada to prepare annually an Assured Operating Plan for the operation of Canadian Treaty storage six years in advance of each operating year. The Assured Operating Plan is developed to meet flood control and power objectives, the only recognized purposes for project operation when the Treaty was signed.

Sharing the benefits of cooperative water management was an integral part of the Treaty's design. The principle applied in the Treaty was to share these benefits equally. Thus, for flood control, Canada was to be paid 50 percent of the value of U.S. flood damages prevented. Instead of receiving an annual payment for the flood control benefits, Canada elected to receive lump sum payments totaling \$64.4 million for one-half of the estimated flood control benefits through September 2024. In exchange for providing and operating the Treaty storage projects for power, Canada also received an entitlement to one-half of the estimated downstream power benefits generated in the United States. Canada initially sold its share of this additional power for \$254 million to a group of U.S. utilities for a period of 30 years, an agreement which expired in 2003 after which the Canadian Entitlement power from downstream benefits was fully delivered to the Province of British Columbia. The initial \$254 million payment from U.S. utilities for downstream power benefits, together with the \$64.4 million payment from the U.S. Government for flood control, helped fund the construction of the three Treaty dams in Canada.

Of Interest...

ETL 1110-2-571 – published 10 April 2009, Engineering Technical Letter (ETL 1110-2-571): “Engineering and Design: Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures” is available on the USACE publications page, (<http://140.194.76.129/publications/eng-tech-ltrs/etl1110-2-571/toc.htm>).

As always, the COE publication “Planning Ahead” has articles of interest. See http://www.usace.army.mil/CECW/PlanningCOP/Documents/pa_newsletter/.

- On page 4 of the February issue, v12i2, is a discussion of “*Climate Change and Water Resources Management: A Federal Perspective*.” The report, a product of the efforts of individuals from the U.S. Geological Survey, the Corps, the Bureau of Reclamation and the National Oceanic and Atmospheric Administration, presents the best available science to help water managers prepare for and adapt to the effects of climate change on the nation's water resources.

- On page 3 of the June issue, v12i4, is an article by Gary Bedker, Sacramento District, and Brian Maestri, New Orleans District, “Sacramento District Assembles Panel of Experts to Estimate Flood-Related Emergency Costs.”
- On page 4 of the June issue, v12i6, is an article by JoAnne Castagna, New York District, “Coastal and Storm Damage Reduction Planning Center of Expertise Has ‘Eye’ on New Orleans Safety During Hurricane Season 2009.”

PROSPECT Courses FY 2009

No.	Title	Dates	Location
58	Statistical Methods in Hydrology	13–17 Jul 2009	Davis, CA
245	Operations Management	27–31 Jul 2009	Washington, DC
406	Plan Formulation	28–31 Jul 2009	Park City, UT
276	Wetlands Development and Restoration	3–6 Aug 2009	Olympia, WA

Additional Information: <http://pdsc.usace.army.mil/downloads/PurpleBook2009.pdf>

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.

- 1–3 July 2009 — 3rd International Conference on Safety and Security Engineering (SAFE 2009). <http://www.wessex.ac.uk/09-conferences/safe-2009.html>
- 8–10 July 2009 — ECOSUD 2009 – Seventh International Conference on Ecosystems and Sustainable Development – Chiancino Terme, Italy – <http://www2.wessex.ac.uk/09-conferences/ecosud-2009.html>
- 19–23 July 2009 — Coastal Zone 09 – Boston, MA – <http://www.csc.noaa.gov/cz>
- 19–29 July 2009 — IAMASm IAPSO and IACS Joint Assembly 2009 – Our Warming Planet — <http://iamas-iapso-iacs-2009-montreal.ca/index.asp>
- 20–24 July 2009 — 3rd National Conference on Ecosystem Restoration – Los Angeles, CA – <http://conference.ifas.ufl.edu/ncer2009/>
- 20–24 July 2009 — U.S. Army Corps of Engineers Infrastructure Systems Conference – Cleveland, OH – <http://www.usaceisconf.org/2009/>



- 10–14 August 2009 — Conference on High Resolution Climate Modeling 2009 – Impact of SST Changes and the MJO on Tropical Cyclones – Trieste, Italy – http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a08174
- 6–9 September 2009 — 4th International Congress of Smart Rivers '21, “The Future of Inland Navigation” – Vienna, Austria, <http://www.smartrivers.org>
- 7–9 September 2009 — River Basin Management 2009: Fifth International Conference on River Basin Management including all aspects of Hydrology, Ecology, Environmental Management, Flood Plains and Wetlands – Malta – <http://www2.wessex.ac.uk/09-conferences/river-basin-management-2009.html>
- 8–11 September 2009 — 2009 Annual Conference of the Floodplain Management Association – San Jose, CA – www.floodplain.org
- 14–15 September 2009 — Smart Rivers 2009 Conference – “Contribution of Inland Water Navigation to Climate Protection” – Vienna, Austria – POC: otto.schwetz@tinavienna.at
- 14–16 September 2009 — 3rd International Conference on Estuaries & Coasts (ICEC 2009) – Sendai, JAPAN – <http://donko.civil.tohoku.ac.jp/icec2009/index.html>
- 21–23 September 2009 — Northeast Shore and Beach Preservation Association “Northeast Beaches Conference” – Woods Hole, MA – <http://www.ieca-nechapter.org/coastal2009.html>
- 23–25 September 2009 — 6th International Conference on Climate Change and Global Warming (CCGW 2009) – Amsterdam, Netherlands – <http://www.waset.org/wcset09/amsterdam/ccgw/>
- 23–25 September 2009 — 1st International Conference on Disaster Management and Human Health Risk (Disaster Management 2009) – New Forest, United Kingdom – <http://www2.wessex.ac.uk/09-conferences/disaster-management-2009.html>
- 14–16 October 2009 — American Shore and Beach Preservation Association “National Coastal Conference: Integrating Science and Policy” – St. Petersburg, FL – www.asbpa.org/conferences/CallforPapers2009-010809.pdf
- 3–5 November 2009 — Mid-Atlantic Stream Restoration Conference – “The Benefits of Stream Restoration” – Morgantown, WV – http://www.canaanvi.org/canaanvi_web/events_ed.aspx?collection=cvi_workshops&id-141
- 10–12 November 2009 — 4th International Conference and Exhibition on Consequences of Climate Change and Flood Protection (acqua alta 2009) – http://www.hamburg-messe.de/acquaalta/acquaalta_en/start.php
- 10–13 December 2009 — 2009 NGWA Ground Water Expo and Annual Meeting – New Orleans, LA – www.ngwa.org
- 25–28 April 2010 — Ports 2010 – Jacksonville, FL – <http://www.content.asce.org/conferences/ports2010>

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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.

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

Upcoming Newsletter Themes

So you can begin to formulate articles for future issues, here is the current plan for newsletter themes:

September 2009 — Progress Made on Initiatives formerly known as “Actions for Change.”

December 2009 — FRM Project Asset Management.