

Newsletter of the Subcommittee on Hydrology

available on-line at: <http://acwi.gov/hydrology/index.html>

Volume 3 Issue 1 March 2011

Inside this issue:

[Welcome from the Chair](#) 1

[About the Subcommittee On Hydrology](#) 2

[Highlights from the October 2010 Meeting](#) 2

[Highlights from the January 2011 Meeting](#) 2

[DOI's WaterSMART Implementation Plan](#) 3

[Work Group Contacts](#) 3

[News from Member Organizations](#) 4

[Upcoming Conferences and Calls for Papers](#) 5

[For Your Information](#) 6

[Student's Corner](#) 8

[Upcoming Meetings](#) 9

[Editor's Corner](#) 9

Welcome from the Chair

2010 has been a somewhat difficult year for the SOH, particularly following the untimely death of Chair, Mary Greene, in June. In October, I took over the position of Chair to complete Mary's term which ends in October of 2011. When I stepped into this role it felt a little overwhelming and I felt quite unprepared. It is only with the help of all member representatives that I have been able to step into this role and I want to thank each and every one of you for your support and encouragement.

As we move into 2011, I look ahead to maintain SOH's focus on the work carried out by the SOH Work Groups:

Hydrologic Frequency Analysis Work Group. The HFAWG continues to make progress in its update of Bulletin 17B. However the importance of this activity is becoming more important as all Federal agencies work to address stationarity and climate change in planning and design.

Extreme Storm Event Work Group. Updated precipitation frequency data, including probable maximum precipitation data essential. The Extreme Storm Event

Work Group has been working on a proposal to how the PMP studies could efficiently be updated. The design SOH looks forward to hearing from the Extreme Storm Event Work Group with their recommendations.

Water Data Work Group. While not yet an officially established Work Group, members continue their great efforts at coordinating with the Hydrology Domain Working Group a working with the Work Group Chairs and all member representatives of the Subcommittee as we work to accomplish the goals and objectives of SOH as set out

Joint Working Group of the World Meteorological Organization (WMO) and the Open Geospatial Consortium (OGC).

Hydrologic Modeling Work Group. The members of the Hydrologic Modeling Work Group are taking a short break this year as they celebrate the success of the 2010 Joint Federal Inter-agency Conference. They won't be resting on their laurels for long; however, as planning for the 2014 conference begins later in 2011.

Hydrologic and Hydraulic GIS Applications Work Group. The H&H GIS

Work Group is working on a summary report summarizing their activities in helping with the creation of a hydrologic modeling inventory web-site hosted by Texas A&M University. They will also include recommendations on future Work Group activities.

Satellite Telemetry Inter-agency Work Group. The STIWG continues to work to advise managers of the Satellite Data Collection System on matters concerning satellite relay user requirements related to hydrologic, meteorologic, oceanic, and other environmental data. In recent years, SOH has not had much contact with STIWG and looks to better facilitate communications with the Work Group in order that SOH can better support their activities.

I look forward to serving out the remainder of my term as Chair and

in our terms of reference. Again, thank you all for your encouragement and support.

*Claudia C. Hoeft
Chair, SOH*



About the Subcommittee on Hydrology

The Purpose of the Subcommittee on Hydrology is "To improve the availability and reliability of surface-water quantity information needed for hazard mitigation, water supply and demand management, and environmental protection." All members who join the SOH share in and support this common purpose as a network to fulfill our mission as defined in the Terms of Reference.

The subcommittee Vice-chair and current contact is Claudia Hoeft of the Natural Resources Conservation Service. Claudia can be reached by phone at (202) 720-0772 or by e-mail at: claudia.hoeft@wdc.usda.gov

Detailed information about the subcommittee can be found at: <http://acwi.gov/hydrology/>

The Subcommittee on Hydrology reports to the Advisory Committee on Water Information that operates under the Federal Advisory Committee Act.

Highlights from October 2010 Meeting

A major topic of discussion at the October 2010 meeting was membership and during this meeting, one new member representative and one new member organization were welcomed to the SOH

Brian Beucler announced that he will serve as the primary representative to SOH for the Federal Highway Administration and that Joe Krolak will serve as the alternate. Previously, Joe served as pri-

mary and Brian as alternate.

GEC operated for over 20 years as the Urban Forest Center which was part of the American Forests national non-profit organization. This past year American Forests reorganized and dissolved the Urban Forest Center. The GEC formed and the staff from the Urban Forest Center transferred to the new organization. GEC nominated Don Woodward and

Kenneth Kay as their primary and alternate representatives, both of whom represented the Urban Forest Center previously.

Minutes from the October 2010 meeting of SOH are available on the SOH website at: <http://acwi.gov/hydrology/index.html>

Highlights from January 2011 Meeting

The January 2011 meeting focused on business of the SOH especially related to issues of membership and terms of reference.

Richard Raione with the U.S. Nuclear Regulatory Commission was elected as the Vice Chair for the SOH. Additional discus-

sion items focused primarily on follow-ups to previous discussions on items such as the Hydrological Operational Multipurpose System (HOMS) and Risk Based Assessment and Event Severity classifications





DOI's WaterSMART Program News

The Department of Interior WaterSMART Program (Sustain and Manage America's Resources for Tomorrow) has issued a preliminary outline on their Strategic Implementation Plan. The plan will establish the framework to provide federal leadership and assistance on efficient use of water, focus on the integration of water and energy policies for sustainable natural resources use, and coordinate water conservation activities across federal agencies.

The DOI is coordinating with the Fish and Wildlife Service, the Bureau of Indian Affairs, the Bureau of Land Management, the National Park Service, the Bureau of Reclamation, and the U.S. Geological Survey. Each agency has offered unique and independent goals to study the current water usage with the best available science and implement their own "Water Footprint Reduction Plan."

In addition, the DOI has launched the WaterSMART Clearinghouse, a forum ACWI members can "contribute case studies, best practices, conservation activities and other information."

[Back to Table of Contents](#)

SOH Work Group Contacts

Extreme Storm Events Work Group

<http://acwi.gov/hydrology/extreme-storm/index.html>

Information on the activities of the Extreme Storm Events Work Group can be obtained from Tom Nicholson. He can be reached by email at:

Thomas.Nicholson@nrc.gov.

Hydrologic Frequency Analysis Work Group

<http://acwi.gov/hydrology/Frequency/index.html>

Information on the activities of the Work Group can be obtained from Will Thomas.

He can be reached by e-mail at: WTHOMAS@mbakercorp.com.

Satellite Telemetry Interagency Work Group

<http://acwi.gov/hydrology/stiwg/index.html>

Meeting minutes and information on the activities of this Work Group can be obtained from Richard T Engstrom. He can be reached by phone at: (309) 794-5408 or by e-mail at: richard.t.engstrom@usace.army.mil

Hydrologic and Hydraulic GIS Applications Work Group

<http://acwi.gov/hydrology/h2gisa/>

For information on the Work Group or to become a member please contact Bill Merkel by phone at (301)-504-3956 or by e-mail at: william.merkel@wdc.usda.gov.

Hydrologic Modeling Work Group

<http://acwi.gov/hydrology/Hydro-Modeling/index.html>

Teleconference minutes and additional information on the activities of the Work Group can be obtained from Jerry Webb. He can be reached by phone at (202) 761-0673 or by e-mail at: jerry.w.webb@usace.army.mil



News from Member Organizations

NASA—Water Resources

NASA Sponsoring 2 Water Management Workshops

I. Evapotranspiration: An Essential Observation for Climate Understanding and Efficient Water Management Workshop. Hilton Washington DC/Silver Spring, 5-7 April 2011.

Workshop Objectives:

1. Define the needs and requirements for evapotranspiration (ET) data in weather and climate studies, in natural and agro-ecosystem monitoring, and in water resource management.
2. To review the methods used to measure and model ET.
3. To assess surface and satellite observation systems required to support ET measurement, modeling and evaluation.
4. To assess the feasibility of developing a proposal for a task on ET for the 2012-2015 GEO Work Plan.
5. To explore the level of support and consensus for developing a strategy for establishing ET as an Essential Climate Variable (CV) within the Global Climate Observing System (GCOS) framework.

II. Global Drought Monitoring Workshop, Hilton Washington DC/Silver Spring, 11-12 April, 2011.

Workshop Objectives:

1. To review the uses of drought monitoring products on regional and global scales.
2. To assess the specific requirements for monitoring agricultural and hydrological droughts and the capabilities of the current suite of NASA data products to provide that information.
3. To develop a set of actions that would enable NASA assets either separately or in collaboration with other agencies such as NOAA, USGS, USAID, or USDA to be used for drought monitoring at regional and global scales.
4. To explore ways in which NASA assets can be used more effectively to inform drought planning at national, regional and local scales

For more information, including workshop overview, registration information and logistics, please go to the workshops link (<http://watercycleforum.com/workshops.html>).

Please feel free to distribute to others who may be interested in attending. The workshops include a mix of invited and unsolicited papers along with several discussion sessions. Also, please consider submitting an abstract for a possible poster or oral presentation. Workshop agendas will be available soon.

Submitted by:
NASA-Water Resources

Nambia salt flats.



Upcoming Conferences and Calls for Papers



International Atomic Energy Agency (IAEA) Water Resources Programme
International Symposium on Isotopes in Hydrology, Marine Ecosystems, and Climate Change Studies

Oceanographic Museum
 Monaco

27 March–1 April 2011

<http://www-pub.iaea.org/mtcd/meetings/Announcements.asp?ConfID=38297>

Abstract submission closed (15 December, 2010)



BOKU - University of Natural Resources and Life Sciences, Vienna
International Conference on the Status and Future of the World's Large Rivers

Vienna, Austria
 11 - 14 April 2011

<http://worldslargerivers.boku.ac.at/wlr/>

Accepting abstracts



2011 Georgia Water Resources Conference
 - Sustaining Georgia's Water Resources -

The University of Georgia
 Athens, Georgia

April 11 – 13, 2011

<http://www.gawrc.org/>

Abstract submission closed (December 15, 2010)

Upcoming Conferences and Calls for Papers



National Hydrologic Warning Council
2011 Training Conference and Exposition

Hilton San Diego at Mission Bay
 San Diego, California

May 9-12, 2011

http://www.hydrologicwarning.org/content.aspx?page_id=22&club_id=617218&module_id=77729

Abstract submission closed (November 15, 2010)



Wessex Institute of Technology, UK

6th International Conference on River Basin Management including all aspects of Hydrology, Ecology, Environmental Management, Flood Plains and Wetlands

Riverside, California, USA
 25 - 27 May 2011

<http://www.wessex.ac.uk/11-conferences/riverbasinmanagement-2011.html>

Accepting abstracts



ASCE-EWRI

2011 World Environmental and Water Resources Congress

Palm Springs, California
 May 22-26, 2011

<http://content.asce.org/conferences/ewri2011/index.html>

Early bird registration through April 11, 2011

Please submit information regarding upcoming conferences and/or calls for papers to [Richard Raione](#) or [Joseph Giacinto](#).

[Back to Table of Contents](#)

For Your Information

Modeling Summit 2011 Advancing the Science of Modeling

March 29-31, 2011 Denver, Colorado
Denver Renaissance Hotel
www.swcs.org/modelingsummit

This meeting will provide a forum to exchange information, discuss opportunities for collaboration, and learn about the advantages and limitations of available data sets for inclusion in current and future models. The target audience for the meeting is modelers and data stewards from federal and state agencies, non-profit organizations, industry, private consulting firms and universities.

Overarching goal: To get model practitioners together to talk about the best way to utilize and integrate available models and data sets to address specific customer conservation/conservation benefit needs. One of the primary concerns of our customers is estimating the site-specific benefits of conservation practices. Modelers must consider the level of precision that is needed for the intended use which may include general conservation planning, program payment support, credit trading support, reports to congress, inside and outside of USDA requests, and policy formulation/regulation.

The meeting will be held at the Denver Renaissance Hotel, which provides complementary transportation to and from DIA. SWCS has arranged a special rate and hotel room block: \$129/night (plus local taxes). Meeting agenda and additional information online at www.swcs.org/

Registration Fees:
\$125.00 on or before March 1, \$175.00 after. Student (Full Time) - includes 12-mo. SWCS Student Membership \$125.00, RSVP by Tuesday, March 22.

Courtesy of David Wells, EPA

USGS – Overview of ARkStorm Scenario and Planning Exercise



The USGS Multi Hazards Demonstration Project (MHDP) has published its latest research on a hypothetical mega-storm to hit the West Coast that could leave the region crippled. The storm is named Atmospheric River 1000 (ARkStorm) for the typical weather system that delivers major winter storms to the region. The only previous storm of similar magnitude occurred in 1861 and 1860 and “left the central valley of California impassable.” The postulated ARkStorm would be state-wide disaster and economic catastrophe.

The research, a collaborative project from more than 100 scientists and experts, examines the meteorology, flooding, and wind speed of the ARkStorm, and the resulting coastal inundation and landslide potential. To estimate the damage of the theoretical storm, MHDP investigated the impacts to the California highway system, power grid, water collection and distribution system and telecommunications. However, the economic effects of the storm would also include business interruption costs and agricultural losses. The report estimates that the disaster could ultimately cost \$725 billion

The report concludes that ARkStorm is “plausible, and perhaps inevitable.” By understanding the potential risk, California may have the ability to update their flood protection and emergency planning structure.

ARkStorm Planning

In 2008 a number of Federal, State and local agencies, including the USGS, held the “Great Southern California Shakeout” to simulate the effects of a magnitude 7.8 earthquake on California and to test emergency response plans and capabilities. Millions of Californians participated in the exercise through home, school, and community drills and other informative events. As a result, those residents and their leaders have a much better understanding of the level of damages that may be possible and what they can do to lessen vulnerability.

Now, a similar exercise, “ARkStorm”, has been developed for California floods. ARkStorm will provide a learning experience to help Californians understand the magnitude of past and possible future flooding in the state and the inherent vulnerabilities of California communities to floods and flood related hazards such as debris flows. The ARkStorm will feature several events that will occur throughout 2011.

As the basis for ARkStorm, scientists unveiled a hypothetical California scenario that describes a storm that could produce up to 10 feet of rain, cause extensive flooding (in many cases overwhelming the state’s flood-protection system) and result in hundreds of billions of dollars in damages.

The ARkStorm is essentially two historic storms (January 1969, and February 1986) put back to back in a scientifically plausible way. “We think this

(Continued on page 7)

[Back to Table of Contents](#)

ARkStorm

(Continued from page 6)

event happens once every 100 or 200 years or so, which puts it in the same category as our big San Andreas earthquakes,” says Lucy Jones, chief scientist of the USGS Multi-Hazards Demonstration Project and architect of ARkStorm. “The ARkStorm scenario is a complete picture of what that storm would do to the social and economic systems of California.”

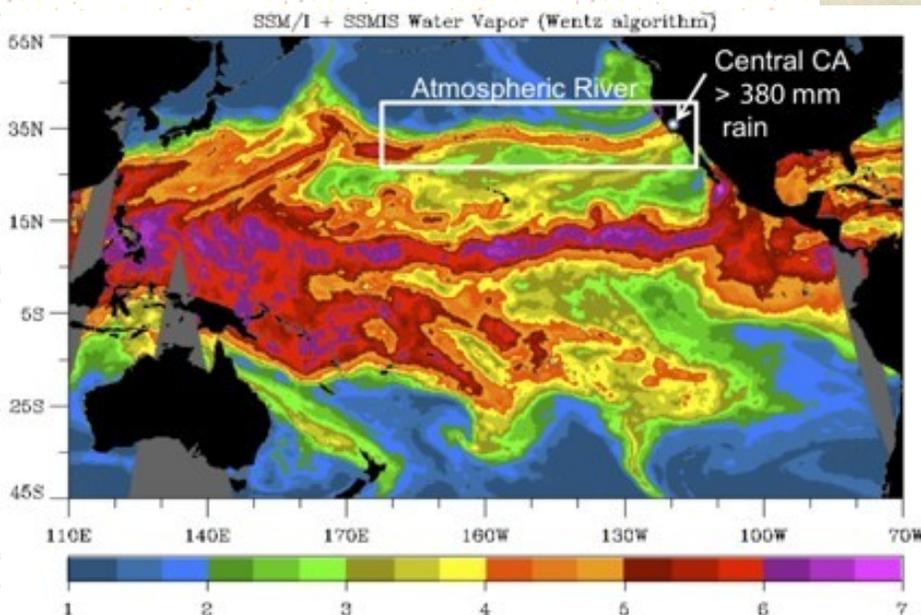
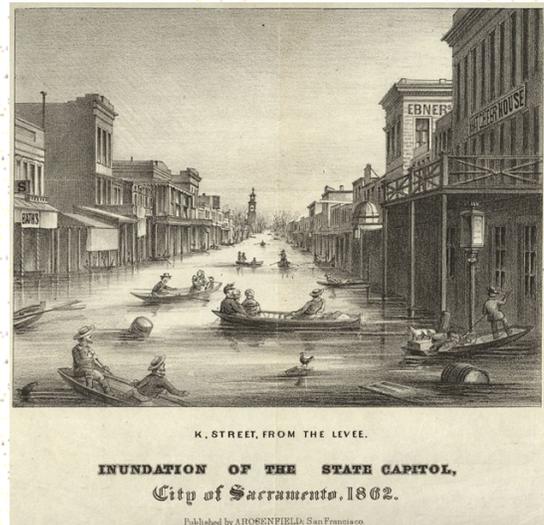
To define impacts of the ARkStorm, the USGS, in partnership with the California Geological Survey, created the first state-wide landslide susceptibility maps for California that are the most detailed landslide susceptibility maps ever created. The project also resulted in the first physics-based coastal storm modeling system for analyzing severe storm impacts (predicting wave height and coastal erosion) under present-day scenarios and under various climate-change and sea-level-rise scenarios.

The ARkStorm Scenario combines prehistoric geologic flood history in California with modern flood mapping and climate-change projections to produce a hypothetical, but plausible, scenario aimed at preparing the emergency response community for this type of hazard.

The ARkStorm Scenario is the second scenario from the USGS Multi-Hazards Demonstration Project led by Jones, which earlier created the ShakeOut earthquake scenario.

To see the full report, visit: <http://pubs.usgs.gov/of/2010/1312/>

Also, check out the blog: “Maximum probable flood considerations for California?” http://news.yahoo.com/s/yblog_thelookout/20110117/us_yblog_thelookout/scientists-warn-california-could-be-struck-by-winter-superstorm





A. JAMES CLARK
SCHOOL OF ENGINEERING



DEPARTMENT OF
CIVIL & ENVIRONMENTAL
ENGINEERING

Student's Corner

University of Maryland - College Park

Water and Energy in Maryland 2010 Symposium

October 28, 2010

University of Maryland, College Park

The Water and Energy in Maryland Symposium addressed the inherent link between our energy production and use and water consumption. The symposium consisted of numerous regional presenters from private and public industry

Presenters touched on problems of using energy for water treatment and distribution and also using water for energy generation and cooling. For future practices, best management practices (BMPs) are offered.

Maryland users are going further for lower quality water while the regulatory requirements are also increasing. BMPs suggested include the reuse of biogas and biosolids, solar panel installation at treatment sites, and a better leak detection system.

Conversely, the increased energy demand has increased the need for water for generation and cooling purposes. The water sources are dwindling for steam engines, hydroelectric dams, and more recently, biomass. BMPs suggested include the use of dry cooling, wastewater reuse for cooling purposes, and the use of non-irrigated crops for biomass.



U.S. Department of Energy Solar Decathlon 2011

“WaterShed, the University of Maryland’s entry in the U.S. Department of Energy Solar Decathlon 2011, is a solar-powered house inspired by the rich, complex ecosystems of the Chesapeake Bay watershed, which stretches over 64,000 square miles of Maryland, Delaware, New York, Pennsylvania, Virginia, and West Virginia.”

This year, 300 UMD students and faculty will begin building the solar powered home. One of the key design elements is the butterfly roof, one half a solar roof and the other half a green roof. The roof will collect rainwater, filter it, and disperse it to the surrounding constructed wetlands and garden. Another design element is the edible green wall. The wall will have some specialized fruit, such as grapes or kiwi, and will function as a water storage and filtration system while reducing runoff.

The house’s design is meant to focus attention on threats to the water quality and ecosystems of the Chesapeake Bay. The UMD team would like to use WaterShed as a model for regional homes. If more homes had similar functions, urban sprawl and inadequate storm water management would have less impact on the Bay.

Submitted by Margaret Sharkey, senior in Civil and Environmental Engineering, University of Maryland

(source: <http://2011.solarteam.org/>)



<http://www.waterresources.umd.edu/>

[Back to Table of Contents](#)

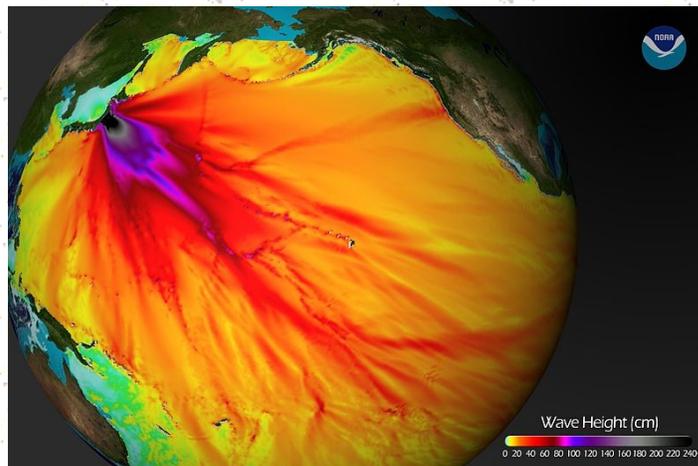
Upcoming Meetings

Subcommittee on Hydrology:

April 21, 2011
9am-noon

USDA – South Building
1400 Independence Ave,
SW
Room 5140-S
Washington, DC 20250

Japanese Earthquake and Tsunami



NOAA rendering of tsunami wave height in the Pacific.

The recent events in Japan have highlighted the importance for us as hydrologists and engineers to effectively communicate and interface with our colleagues in the geological, seismic, atmospheric, and oceanic sciences.

Since the 2004 Indian Ocean earthquake and tsunami, the international and regional tsunami warning system has improved vastly, yet a warning can only do so much if people have but a few minutes to evacuate.

With federal budgets decreasing and the competition for funding a reality, I hope and anticipate that the scientific community can maintain a spirit of cooperation and continue to work as a team. The nexus of human health and safety to hydrology could not have been made clearer during these past events. The implications can serve to both

humble and inspire us.

To submit items for the newsletter, please contact either or Richard Raione, Joseph Giacinto, or Margaret Sharkey.

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