

# Newsletter of the Subcommittee on Hydrology

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

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## Welcome from the Chair



*SOH Chair, Steve Blanchard, USGS (l) and Vice-Chair, Mary Greene, OSM (r)*

The Terms of Reference for the Subcommittee on Hydrology (SOH) state that our focus is to be on “surface-water quantity.” Current events and the news demonstrate just how important this topic of surface-water quantity really is. There is currently (March 17-24) major flooding in the central USA (TX, MO, IL, IN, OH); the National Weather Service has issued its “2008 National Hydrologic Assessment” (<http://www.nws.noaa.gov/oh/hic/nho/index.shtml>) which forecasts above average chance of flooding in the Mississippi, Ohio, Susquehanna, Delaware, and Connecticut River Basins and the states of Colorado and Idaho; and the severe drought in the southeastern USA continues to persist (<http://www.drought.unl.edu/DM/monitor.html>).

In addition to current excesses and shortages in surface-water conditions, there are on-going battles across the country over competing surface-water uses such as navigation, recreation, aquatic life, flood control, and water supply as evidenced by the headline “Bitter water battles brew in Southeast” (from the Tennessean.com). Then there are concerns about potential new water supply demands as indicated by the headline “U.S. Water Under Pressure as Ethanol Production Soars” (Environmental News Service).

The current interest in surface-water quantity issues throughout the USA is an indication of the importance of the work of the SOH. Through our quarterly meetings we are able to share valuable water related information amongst our member organizations and with others. Much of the work accomplished between meetings is carried on by our Work Groups. The Hydrologic Frequency and Analysis Work Group (HFAWG) is making good progress on a restudy of Bulletin 17B. The Satellite Telemetry Interagency Work Group (STIWG) is celebrating the establishment of a back-up site to the NOAA Wallop’s Island GOES satellite data telemetry system.

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## 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 is currently chaired by Steve Blanchard of the United States Geological Survey. Steve can be reached by phone at 703-648-5629 or by e-mail at: [sfblanch@usgs.gov](mailto:sfblanch@usgs.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.*

## Welcome from the Chair

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Our newly formed Hydrologic and Hydraulic GIS Applications Work Group is circulating a questionnaire to develop an inventory of existing GIS applications to help promote collaboration and sharing of existing tools. The Hydrologic Modelling Work Group is working with the Subcommittee on Sedimentation to plan for the 2010 Joint Federal Interagency Hydrologic Modeling and Sedimentation Conference. Looking to the future, the SOH is exploring the formation of Work Groups on "Extreme Events" and "Hydrologic Data Sharing"

to better provide up-to-date hydrologic data, data products, and easier data access to important hydrologic data needed by water resources managers and scientist across the nation.

I want to thank all the SOH member organizations and you as representatives for your active involvement and participation in the important work of the Subcommittee. The effort you put forth and the products we produce are needed as much now as any time in the past.

*Steve Blanchard  
Chair, Subcommittee on Hydrology  
Chief, USGS Office of Surface Water*

## Highlights from the January 2008 Meeting

### Featured Speaker

Claudia Hoefft, USDA-NRCS, gave a presentation on the Snow Survey and Water Supply Forecasting Program administered by the Natural Resources Conservation Service. Her presentation covered a brief history of the program; data collection; development of water supply forecasts; other climate services within NRCS, including new products for the dissemination of information; and future directions within Snow Survey. Claudia's PowerPoint slides may be viewed by visiting [http://acwi.gov/hydrology/minutes/acwi\\_soh\\_snow.pdf](http://acwi.gov/hydrology/minutes/acwi_soh_snow.pdf)



*Illustration of meteor burst communications technology used to transmit snow data from remote sites to master collection stations.*

## Work Group Reports

### Hydrologic and Hydraulic GIS Applications Work Group

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

The Work Group met via teleconference on March 5, 2008. During this meeting, major purposes of the Work Group were reviewed. The purposes are to:

- Provide a forum for information exchange
- Provide learning opportunities
- Develop a list of web links to GIS applications in H&H
- Provide a forum to express needs for GIS applications

A request for information on public domain GIS applications in H&H is being prepared in the form of a questionnaire. The questionnaire will be

distributed over the next two months and also be made available on the Work Group web-site for anyone interested in submitting information. Responses will be compiled and results made available on the Work Group web-site.

Preparations are being made to enable the Work Group to hold on-line meetings in order to demonstrate GIS applications at future teleconferences. Representatives of federal agencies, state agencies, and others are invited to participate in the Work Group. The next teleconference will be held April 24, 2008.

*For additional 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](mailto:william.merkel@wdc.usda.gov).*

### Task Force on Extreme Events

A kick-off meeting/teleconference of a Task Force was held on March 3, 2008 to further explore the establishment of a Work Group on Extreme Events.

This initial meeting focused on reviewing the need for routine collection, analysis and archival of extreme storm data used in runoff

modeling and methods for estimating extreme storms up to, and including, Probable Maximum Precipitation (PMP) events. Also discussed were the necessity for procedures to update storm data sets, methodology and reports used to develop generalized PMP estimates.

*Meeting minutes and additional information on the activities of this Task Group can be obtained from Tom Nicholson. He can be reached by email at: [Thomas.Nicholson@nrc.gov](mailto:Thomas.Nicholson@nrc.gov).*

## Work Group Reports

(continued)

### Hydrologic Frequency Analysis Work Group

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

#### Introduction

The last report on the activities of the Hydrologic Frequency Analysis Work Group (HFAWG) was in the June 2007 issue of the Subcommittee on Hydrology (SOH) Newsletter. In the June 2007 article, a history of the HFAWG was provided with a brief status of current activities. This article provides an update on HFAWG activities since June 2007.

The plans to update Bulletin 17B are described on the HFAWG web site at <http://acwi.gov/hydrology/Frequency>.

Briefly, the plans are to:

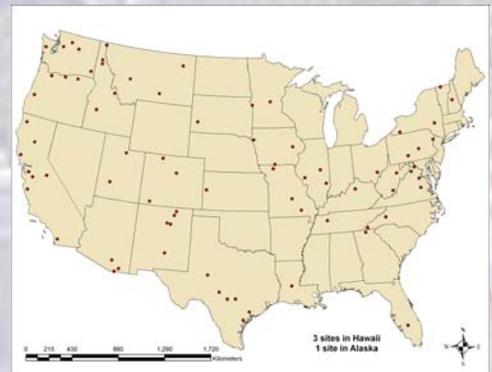
- Evaluate and compare the Expected Moments Algorithm (EMA) and Bulletin 17B procedures for analyzing data sets with historic and paleoflood data,
- Evaluate and compare EMA and Bulletin 17B procedures for analyzing data sets with low outliers and zero flows,
- Describe improved procedures for estimating generalized/regional skew,
- Describe improved procedures for defining confidence limits.

The testing of EMA, which began in August 2007, is taking two approaches based on:

- Observed data – 82 gaging stations with historic peaks, high and low outliers and some stations with no extreme data,
- Monte Carlo simulations – simulating data from assumed frequency distributions including the Pearson Type III, other distributions and a combination of distributions.

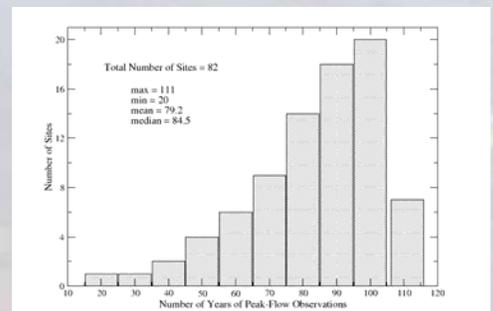
#### Observed Data

The 82 gaging stations were selected primarily from the U.S. Geological Survey (USGS) HydroClimatic Data Network because this network represents some of the longest records in the US for which the streamflow and watershed characteristics are not significantly affected by urbanization, deforestation, regulation, etc. These gaging stations are scattered geographically around the country and their locations are shown in Figure 1.



**Figure 1.** Locations of the 82 peak-flow gaging stations used in HFAWG testing

The distribution of record lengths for the 82 stations is shown in Figure 2. The average record length is 79 years and the median record length is 84 years.



**Figure 2.** Distribution of peak-flow record lengths for the 82 testing sites

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## Work Group Reports (continued)

### Hydrologic Frequency Analysis Work Group

*continued from page 4*

Twenty seven of the stations have record lengths in excess of 95 years. The objective is to do split sampling analyses from these long records and compute and compare frequency curves using 20-, 40-, 60-year samples from the longer records.

The gaging stations can be grouped into the following categories according to the occurrence of historic peaks, high systematic peaks, low outliers and some combination thereof:

- Stations with historic peaks = 27
- Stations with low outliers based on the Grubbs and Beck test in Bulletin 17B = 29
- Stations with historic peaks and high systematic peaks = 13
- Stations with high systematic peaks and no historic period = 10
- Stations with historic peaks and low outliers = 10
- Stations with historic peaks, high systematic peaks, and low outliers = 7
- Stations with no historic peaks or outliers = 36

The results from the testing may be summarized according to the groups above to determine if EMA and Bulletin 17B perform differently for each group.

#### Progress

The EMA procedures have now been implemented in the latest USGS PeakFQ program (Version 5.2) that implements Bulletin 17B which was published in November 2007. The Bureau of Reclamation Bulletin 17B program is consistent with the USGS program. The U.S. Army Corps of Engineers is incorporating the EMA code as part of their Bulletin 17B

program HEC-SSP that replaces HEC-FFA. John England, Bureau of Reclamation, and Tim Cohn, USGS, are performing the tests for the comparison of EMA and Bulletin 17B.

The EMA and Bulletin 17B analyses were completed for the 82 stations based on the full period of record. The preliminary differences in percent for the 100-year estimates for the two methods are ((EMA-B17)/B17):

- 10<sup>th</sup> percentile = -12.24 percent,
- 25<sup>th</sup> percentile = -2.44 percent,
- 50<sup>th</sup> percentile = -0.02 percent,
- 75<sup>th</sup> percentile = 0.54 percent,
- 90<sup>th</sup> percentile = 9.71 percent.

The results above are considered preliminary because the data have not been thoroughly reviewed. Assuming the preliminary results are correct, there were 10 percent of the stations where the Bulletin 17B 100-year estimates were more than 12.24 percent greater than the EMA estimates. Conversely, there were 10 percent of the stations where the EMA 100-year estimates were 9.71 percent greater than the Bulletin 17B estimates. The median difference was essentially zero. Keep in mind that 36 of the 82 stations do not have any historic peaks or outliers and the EMA and Bulletin 17B estimates will be the same for those stations.

For the 18 stations where the difference between EMA and Bulletin 17B estimates was more than 10 percent:

- 6 stations had historic peaks,
- 6 stations had high systematic peaks with historic data,
- 12 stations had low outliers and/or zero flows.

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## Work Group Reports (continued)

### **Hydrologic Frequency Analysis Work Group**

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Based on a cursory review of the results, it appears that the two methods differ mostly where there are low outliers or zero flow events in the sample. The EMA procedure has a different approach for detecting and adjusting for low outliers than Bulletin 17B so these differences need further investigation.

Estimating generalized or regional skew with generalized least squares regression techniques looks promising. A recent study by the USGS in the southeastern US indicates that the effective record length of the estimated generalized skew is about 70 years. This is a significant improvement over the existing Bulletin 17B skew map where the effective record length averages about 17 years. The generalized least squares regression approach is a strong candidate as a new approach for developing estimates of generalized skew. The computational procedures for this new approach could be documented in the revised Bulletin 17B.

The confidence intervals in Bulletin 17B do not consider the uncertainty in skew estimates and do not reflect the extended record length based on the use of historic flood peaks. Several published papers describe improved procedures for estimating confidence limits and a new procedure for estimating confidence limits could be documented in the revised Bulletin 17B.

The plans for the future include:

- Perform split-sampling analyses using the observed peak data,
- Complete the Monte Carlo simulations,
- Hold a HFAWG meeting to discuss the results to date, determine any new analyses that are needed, and define revisions needed in Bulletin 17B,
- Revise Bulletin 17B as appropriate,
- Begin the review process of publishing a new Bulletin 17C.

*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](mailto:WTHOMAS@mbakercorp.com).*

### **Satellite Telemetry Interagency Work Group**

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

The Satellite Telemetry Interagency Work Group (STIWG) held a meeting in Gulfport, MS on January 23, 2008.

STIWG is celebrating the establishment of a back-up site to the NOAA Wallop's Island GOES satellite data telemetry system. The back-up site, located at the USGS' EROS Data Center, is called the Emergency Data Distribution Network (EDDN). The back-up eliminates the Wallop's Island facility as a possible

single point of failure in the extremely important real-time data transmission system for hydrologic and meteorologic data.

All antennas and outside infrastructure (power cables, fiber optic cables, etc.) have been installed and the GOES receive system has been installed in the EROS computer center and connected with the antennas. The system is receiving data from all domestic

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## Work Group Reports

(continued)

### *Satellite Telemetry Interagency Work Group*

*continued from page 6*

channels on both GOES East and West. System testing will continue through February and integration into operational systems will begin in March.

The Sutron Corporation was awarded a contract to propose an operational system and develop a prototype for the Data Collection Platforms (DCP) Interrogate (DCPI) project, supported by NOAA/NOS, to include two-way communications with DCPs over the GOES Data Collection System (DCS).

The HDR DCPs can transmit in a much narrower bandwidth than the old 100-baud DCPS. So the current bandwidth of each GOES channel can be reduced by ½ of its current length. This will have the effect of doubling the current capacity of the GOES DCS when the conversion to HDR DCPs is complete.

The new HDR demodulators can receive 100 and 300 baud transmissions on the same channel. However, not every receive site has this capability. This capability will facilitate the transition from 100-baud DCPS to HDR DCPs.

Status of NESDIS action items regarding changes to DOMSAT:

- Explore possibility of transmitting of dual streams of data to DOMSAT: one from Wallops; one from backup.
- Explore replacement of transmission protocol which is becoming obsolete
- Support for acquiring newly available frequency band for GOES DCS use.

An unused frequency band has been identified and may be available for use by the GOES DCS when the satellite GOES-S is launched (2013). The band is about the same size as the current GOES DCS band and its use would effectively double the current capacity of the GOES DCS. Along with the reduction in the size of each GOES channel, this would quadruple the current capacity.

The GOES DCS community will have to present a good case for the use of the newly-available band for the GOES DCS because other groups may apply for it also. The ARGOS system has already expressed an interest in it. We may need SOH and ACWI support for justifying its use in the GOES DCS.

*Meeting minutes and additional information on the activities of this Work Group can be obtained from Ernest Dreyer. He can be reached by phone at: (703) 648-5365 or by e-mail at: [sedreyer@usgs.gov](mailto:sedreyer@usgs.gov).*

## Work Group Reports (continued)

### ***Special Notice:***

*I am pleased to inform you that the dates and location for the **2nd Joint Federal Interagency Conference** have been set.*

*The 4th Federal Interagency Hydrologic Modeling Conference and the 9th Federal Interagency Sedimentation Conference will be held jointly from **June 27 to July 1, 2010 at the Riviera Hotel in Las Vegas, NV.***

*Doug Glysson  
Chair, JFIC  
March 21, 2008*

### **Hydrologic Modeling Work Group**

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

The Hydrologic Modeling Work Group met by teleconference on February 12, 2008.

Problems have been encountered with linking the proceedings from the 1998, 2002 and 2006 Federal Interagency Hydrologic Modeling Conferences to the Subcommittee on Hydrology web-site. Proceedings from the 1993 Hydrologic Modeling Needs Workshop will also be linked to the web-site when the problems are resolved.

A location for the 2010 Joint Federal Interagency Hydrologic Modeling and Sedimentation conference was recommended to both the Hydrology and Sedimentation Subcommittees and both concurred in the recommendation. Doug Glysson, USGS, Chair of the Joint

Federal Interagency Conference (JFIC) sent out a notice (shown to the left) announcing the dates and location of the 2010 conference to the Chairs of each Subcommittee which we are able to share with you here.

A number of positions involving conference planning and management will be available for volunteers from both the Hydrologic Modeling and Sedimentation disciplines. These positions will involve organizing field trips, short courses, exhibits, posters, demonstrations and proceedings. The first organizing committee meeting will be held in June in Denver.

The next teleconference is scheduled for Monday, April 7<sup>th</sup> at 1:00 pm Eastern time.

*Teleconference minutes and additional information on the activities of the Work Group can be obtained from Don Frevert. He can be reached by phone at (303) 445-2473 or by e-mail at: [dfrevert@do.usbr.gov](mailto:dfrevert@do.usbr.gov).*

## News from Member Organizations

### USGS announces the release of 3 new Fact Sheets

#### ***Recent Improvements to the U.S. Geological Survey Streamgaging Program - FS 2007-3080***

This fact sheet provides a nice summary of improvements made to the USGS streamgaging program over the last several decades.

<http://pubs.usgs.gov/fs/2007/3080/>

#### ***From the River to You: USGS Real-Time Streamflow Information - FS 2007-3043***

This fact sheet describes how the typical USGS streamgage transmits data from the "gage" to the "page" in near-real time.

<http://pubs.usgs.gov/fs/2007/3043/>

#### ***Surface-Water Techniques: On Demand Training Opportunities - FS 2007-3099***

This fact sheet describes CD-ROM and Web-based training on streamgaging and sediment related activities.

<http://pubs.usgs.gov/fs/2007/3099/>

*Submitted by Steve Blanchard, USGS*

### NRCS' Annual West-wide Snow Survey Training School

The 2008 West-wide Snow Survey Training School was held January 13-18, 2008 at the Snow Mountain Ranch YMCA in Winter Park, Colorado. Fifty-four students from NRCS and several partner agencies received avalanche awareness and winter survival training, a wilderness first aid refresher, and training in proper manual snow data collection techniques in order to obtain accurate snow water content measurements.

The highlight of the week was a bivouac exercise. Students were required to build snow shelters and spend the night outdoors. With low temperatures dipping to -18° F during the night, students learned a great deal about the importance of constructing suitable shelter and how to survive the winter conditions in the unlikely event that they need to spend a night out in the snow.

NRCS uses snow data to produce monthly streamflow volume forecasts at over 700 points across the west. This annual training is vital to protecting the health and safety of all persons involved with collecting snow data and is open to NRCS personnel and others who cooperate with NRCS in snow survey operations.

Next year's school is scheduled for January 11-16, 2009 in Tahoe City, California.

*Submitted by Claudia C. Hoeft, NRCS*



*Students learning proper manual techniques for collecting accurate snow water content data.*

**News from  
Member  
Organizations  
(continued)**

**New Ground-water and  
Surface-water flow Model  
available**

The U.S. Geological Survey (USGS) is pleased to announce the release of the new GSFLOW **G**round-water and **S**urface-water **F**LOW model. The model is based on the USGS Precipitation-Runoff Modeling System (PRMS) and Modular Ground-Water Flow Model (MODFLOW-2005). GSFLOW was developed to simulate ground-water/surface-water interactions in one or more watersheds by simultaneously simulating flow across the land surface, within saturated and unsaturated subsurface materials, and between terrestrial and surface-water domains (streams and lakes). GSFLOW can be used to evaluate the effects of such factors as land-use change, climate variability, and ground-water withdrawals on surface and subsurface flow. The model is applicable to watersheds that range from a few square kilometers to several thousand square kilometers, and for time periods that range from months to several decades.

GSFLOW is documented in USGS Techniques and Methods Report 6-D1, "GSFLOW--Coupled ground-water and

surface-water flow model based on the integration of the Precipitation-Runoff Modeling System (PRMS) and the Modular Ground-Water Flow Model (MODFLOW-2005)," by Steven Markstrom, Richard Niswonger, Steven Regan, David Prudic, and Paul Barlow. The report is available online at: <http://pubs.usgs.gov/tm/tm6d1/pdf/tm6d1.pdf>. The code can be accessed from the USGS Water Resources Applications Software web-pages at: <http://water.usgs.gov/nrp/gwsoftware/gsflow/gsflow.html>.

*Submitted by Steve Blanchard, USGS*

**Western Snowpack Conditions  
and Water Supply Forecasts  
available on-line**

USDA's Natural Resources Conservation Service (NRCS) makes all of its Western Snowpack Conditions and Water Supply Forecast Reports available on-line through NRCS' National Water and Climate Center (NWCC). Official reports for the months of January through May of each year starting with 2001 are available and can be viewed and or downloaded. <http://www.wcc.nrcs.usda.gov/cgi-bin/westsnowsummary.pl>

*Submitted by Claudia C. Hoefl, NRCS*

## Upcoming Conferences and Calls for Papers

### WESTERN SNOW CONFERENCE

Western Snow Conference  
Hood River, Oregon  
April 15-17, 2008  
[www.westernsnowconference.org](http://www.westernsnowconference.org)



Association of State  
Floodplain Managers  
Annual Floodplain  
Management  
Conference  
Reno-Sparks, Nevada  
May 18-23, 2008  
<http://www.floods.org/>

### 4<sup>th</sup> International Symposium on Flood Defence



4<sup>th</sup> International  
Symposium on Flood  
Defence  
Toronto, Canada  
May 6-8, 2008

<http://www.flood2008.org/flood/>



Association of American  
Geographers  
Annual Meeting  
Boston, MA  
April 15 – 19, 2008  
<http://www.aag.org/annualmeetings/2008/index.htm>



ASCE World Environmental and  
Water Resources Congress  
Honolulu, Hawaii  
May 12-16, 2008  
<http://content.asce.org/conferences/ewri2008/>



American Forests  
National Conference on Urban  
Ecosystems  
May 28 - 30, 2008  
Orlando, Florida  
[www.americanforests.org/conference/conf\\_08.php](http://www.americanforests.org/conference/conf_08.php)



ConSoil 2008  
10<sup>th</sup> International UFZ/TNO  
Conference on Soil-Water Systems  
Milano, Italy  
3-6 June 2008  
<http://www.consoil.de/>



ESRI  
28th Annual International  
User Conference  
San Diego, CA  
August 4–8, 2008  
<http://www.esri.com/uc>



Association of State  
Dam Safety Officials  
Dam Safety '08  
Indian Wells, California  
September 7-11, 2008  
<http://damsafety.org/conferences/?p=8a505588-202e-4463-8fac-9b31475217ac>



1<sup>st</sup> Call for Papers  
The 6<sup>th</sup> International Conference on  
Urban Watershed Management and  
Lake Eco-system Protection and  
Resource Utilization  
The 1<sup>st</sup> International Conference on  
Sustainable Development of the  
Poyang Lake Region  
Nanchang, China  
October 27-31, 2008  
<http://hjxy.ncu.edu.cn/icuwm/>



2008 International Low Impact  
Development Conference  
Seattle, Washington  
November 16-19, 2008  
<http://content.asce.org/conferences/lid08/>

*Due to the large number of submissions for conferences and calls for papers, only the conference name, location and date along with the conference web-site are included. Please visit the web-sites for additional information.*

## Special Report: Update on Hydrologic Information Systems (HIS)

Bob Hirsch (USGS) and Prof. David Maidment (U. Texas) made an announcement about the USGS Daily Values web service at a Texas Water Summit in San Antonio on 1 December. Called GetDV, the service provides direct access to USGS' daily values archive (about 30,000 sites). An announcement about this is at: <http://www.cuahsi.org/docs/usgs-cuahsi-webservices.pdf>.

Prof. Maidment presented a lecture at this summit in which he tried to set the whole web services development in context. His presentation can be viewed at: <http://www.ce.utexas.edu/prof/maidment/meetings/WaterSummit/Maidment.ppt>.

This presentation talks about the idea of web pages enabling communication between machines and people while web services are focused on machine-machine information communication. Also, there are at least four different ways that agencies and organizations can contribute their information to the water web services network.

Consortium for the Advancement of Hydrologic Sciences, Inc. (CUAHSI) has adapted its NWISDailyValues

web services so that the GetValues function calls the USGS GetDV to obtain its information, rather than using a web page scraper onto NWIS as has been done in the past.

The National Science Foundation (NSF) has announced three awards for Critical Zone Observatories (CZO's) at Penn State, Colorado and California, and has asked the HIS team to assess what kind of information system is needed to support these observatories.

The CZO's are concerned in part with the evolution of the regolith and soil and rock weathering, so the HIS part of that may be to make a more secure data representation for the soil and near subsurface media. Inevitably, this brings in 3D representation of subsurface data.

The HydroSeek system that was developed at Drexel University ([www.hydroseek.org](http://www.hydroseek.org) or [www.hydroseek.net](http://www.hydroseek.net)) has been replicated at the San Diego Supercomputer Center (<http://water.sdsc.edu/search/>) and HIS is seeking to make this a modular system that can be implemented elsewhere.

*Submitted by David Goodrich, ARS*

## Editor's Corner

Each edition of this newsletter includes a thank you to members who provided articles and a reminder that without member submissions this newsletter would not be possible. I'd like to ask each member to consider submitting at least one brief article a year.

The newsletter is a great way to provide updates on Subcommittee Work Group activities and highlights from the previous Subcommittee meeting as well as ACWI meetings, but we can make it more than that.

There is a section on "Latest News from Member Organizations" where something new or exciting in member agencies can be covered with a brief description. There's also a section titled, "Special Report" where longer articles can feature activities within member agencies that have broader implications to the Subcommittee as a whole - or just something fun and interesting that requires a longer article to describe.

We get a lot of positive feedback on the newsletter which makes putting it together a lot of fun and well worth the effort. But without submissions, there's nothing to assemble. So, please help us out and keep those articles coming in.

Thanks so much for your time and your support.

*Claudia C. Hoeft,  
Associate Editor*

To submit articles, please contact either Mary or Claudia.

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## Upcoming Meetings

### **Subcommittee on Hydrology:**

April 17, 2008; 9:00 a.m.  
Department of the Interior  
Main Building  
Washington, DC