

USGS National Hydrography Dataset Newsletter

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by Steve Aichele and Al Rea, USGS

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HRBS Update

by Steve Aichele

The Hydrography Requirements and Benefits Study (HRBS) has entered the analysis phase. We received the last of the state and agency summaries back from the points-of-contact in late December, and received the updated geodatabase from Dewberry January 22, 2016. A complete report documenting the methods used and data collected will be produced by Dewberry this spring.

Although there will be a considerable amount of effort involved in the analysis, a few general tendencies are worthy of note. Based on the 420 Mission Critical Activities identified by 50 states, 23 agencies, and several private organizations, the overwhelming trends are toward better positional accuracy, larger scale content for both streams and waterbodies, more frequent update/verification of the data, and simplified integration with other datasets, particularly elevation. There is also information on the benefit of these improvements to the user community.

Over the course of the next several months, we will analyze this requirements information and the associated benefits, along with estimates of the cost of implementation, to develop a set of program recommendations.

NHDPlusHR Update

by Al Rea and Ellen Finelli

Work on the NHDPlus High Resolution (NHDPlusHR) is progressing. Development of the Build/Refresh tools is essentially complete, and we are well into testing and validating the results. The development of NHDPlusHR will be an incremental process, consisting of the initial production of “Beta” datasets, QC review by stakeholders to identify problems, editing of the ingredient datasets to address those problems, and a “refresh” process that will produce new and improved versions of all the NHDPlusHR datasets. The first few HUC4’s of data have been produced, and the team now is examining the data carefully. Barring any unforeseen difficulties, we should be able to release some early “Beta” datasets for the community to review soon.

The processing is done on a Subregion (HUC4) basis, and is proceeding by region, beginning with Region 06 (Tennessee River), to be followed by Region 01 (New England), and Region 12 (Texas-Gulf). Region 06 was chosen as the first region to be processed because it is the smallest. The subsequent regions each introduce new data issues for the team to consider, such as coastlines and closed basins. Regions 14 and 15 (Upper and Lower Colorado) will then introduce inter-region flow connections. The work is being done partly by USGS and partly by a contractor, Horizon Systems. Once we have gotten a few regions processed, we hope to be able to estimate how long it will take to complete the work, and approximately when we will be working on each region.

Some stewards have indicated their interest in helping to correct data problems in advance of our NHDPlusHR processing. This will result in better quality in the Beta datasets, and is encouraged. We have developed tools/QC checks to aid in the discovery of errors, and will continue developing additional such tools. All editing will be done using the standard stewardship processes. If you would like more information about how you can improve the data in your area prior to the initial Beta processing, please contact Paul Kimsey (pjkimsey@usgs.gov). We also plan to develop a web-based “markup” capability, which will allow non-stewards to view the Beta datasets and identify data problems and solutions. The markups will be input to the stewardship process. Once the QC review and any necessary edits are accomplished, USGS will run the refresh process. We hope to begin the refresh process within a few months of completing the initial Beta datasets for each region. We will not wait till the Beta datasets have been produced nationally to begin the refresh process. After the first refresh of Beta data has been done for a subregion, subsequent refresh processing will be governed by the amount and kind of changes that have occurred in the ingredient datasets.

New EPA Grant Program

by Tommy Dewald

There is a new EPA grant program which might reasonably support some geospatial framework investment related to healthy watersheds ... eg NHD, NHDPlus and WBD.

Healthy Watershed Grants

Healthy Watersheds Consortium Grant Program and U.S. Endowment for Forestry and Communities. EPA has awarded the U.S. Endowment for Forestry and Communities, Inc. (Endowment) \$3.75 million over six years to support the Healthy Watersheds Consortium Grant

Program. The program's focus is to accelerate the strategic protection of healthy freshwater ecosystems and their watersheds across the country. The Endowment is matching EPA's award dollar-for-dollar and will seek to engage other public and private partners in the Consortium. See the link below for information on how to apply under the new Healthy Watersheds Grants RFP that runs until March 14th. To view the website:

<http://www.usendowment.org/partnerships/hwcgrantprogram.html>.

Ariel Doumbouya selected as NHD Applied Researcher

by Ellen Finelli

USGS is pleased to announce the selection of Ariel Doumbouya as a NHD Applied Researcher within the Topographic Applied Research Section of NGTOC's Applied Research and Technology Branch. Her assignment to this position will be effective January 24. Ariel's substantial knowledge and experience with the NHD and proven ability to manage development activities will serve her (and the NGP) well in this new role.

As the NHD Applied Researcher her duties will include, leading applied research activities for NHDPlus High Resolution, Generalization, Hydrography Requirements Benefits Study, and Vector Tools Innovations Working Group. Additionally Ariel will continue to support the Vector Tools Agile Development Team to ensure a smooth transition.

WBD Update

by Elizabeth Stevens-Klein

Sue Buto is continuing in a part-time Acting position as the Product and Service Lead of the Watershed Boundary Dataset.

If you've recently used the WBD for an interesting project, or have recently completed major edits that you'd like to share with the community, please contact Elizabeth Stevens-Klein at estevens-klein@usgs.gov or Kimberly Jones at kjones@usgs.gov. We are looking for monthly WBD presenters for the NHD Advisory Meetings and encourage you to participate to keep WBD in the forefront. Any WBD topic is welcome.

An updated 12/22/2015 version of the WBD National Seamless with updated metadata xmls is now available for public download at: <ftp://rockyftp.cr.usgs.gov/vdelivery/Datasets/Staged/WBD/>. This WBD National Seamless product will continue to be the most up-to-date, inclusive option and includes all WBD feature classes, tables, and updated metadata xmls. WBD may also be downloaded from the NRCS Gateway, which is refreshed on a biannual basis, and from NHD staged products, which include up-to-date WBD as per the date on the ftp site at: <ftp://rockyftp.cr.usgs.gov/vdelivery/Datasets/Staged/Hydro/>. NHD staged products are available by 4-digit HU, 8-digit HU, and State, and currently do not include WBD tables or updated metadata xmls. Coming soon are WBD staged products by 2-digit HU. These will include everything the WBD National Seamless includes broken out by region for smaller, more manageable downloads.

WBD Stewards and Technical POCs, please join us at the next Technical Exchange Meeting scheduled for February 10th at 10:00AM Mountain Time, and the next training scheduled for February 18th at 10:00AM Mountain Time. We will go over the new Name Add-In during the February 18th training. Please visit the Hydrographic Data Community (HDC) <https://my.usgs.gov/confluence/display/hdc/Hydrographic+Data+Community> for more information. If you're a Steward or Technical POC and need a Hydrographic Data Community (HDC) account, please contact Elizabeth Stevens-Klein at estevens-klein@usgs.gov.

TNM training videos

by Dan Walters

The National Geospatial Program recently published a series of training modules for The National Map (TNM). The training will help you perform many useful tasks such as accessing pre-rendered topographic base maps for anywhere in the US including 1:24,000-scale USTopos in geopdf format and topographic web services at a variety of scales. Lessons for accessing data in Earth Explorer, using TNM web services on mobile devices and for downloading historical topographic maps are also included. If you are interested in geospatial data, you will find clear instructions for downloading core data sets such as the National Hydrography Database, the Watershed Boundary Database and high resolution elevation data derived from lidar, all public domain and free of license restrictions.

The lessons are primarily YouTube-based and are compiled in one convenient location and named to facilitate finding topics that interest you. A process has been established to easily update the content over time, provide training on new TNM products and services and to quickly respond with training for frequently asked questions.

<http://training.usgs.gov/TEL/TheNationalMap/TNM-TEL-Index.html>

A team of TNM liaisons and NGP products and service managers developed scripts for the lessons and Nick Stasulis, Maine Office of the New England Water Science Center, produced the on-line training and videos. The USGS Office of Organizational and Employee development provided funds for the work. We welcome your input on improving and expanding the catalog of National Map training materials. Please send your suggestions to me at danwalters@usgs.gov

Opening of the Bonnet Carré Spillway

by Jim Mitchell (State of Louisiana, Office of Technology Services)

This month (January, 2016) the Bonnet Carré Spillway upstream of New Orleans was opened. There have been only 11 openings of the Bonnet Carré since 1931. The openings last long enough to stabilize the water levels downstream in New Orleans and relieve pressure on those structures. They have lasted from 13 to 75 days, averaging about 41 days.

The facility consists of the gate structure and the floodway that extends to Lake Pontchartrain. It finished construction in 1931 and consists of 350 “bays” or gates that are closed by over 7000 “needles.” These are 8” x 12” wooden beams that are lifted in and out of the gates, one at a time, with a crane. The beams do not “seal” the bay, so when water reaches the bottom elevation of the structure (18 or 20 ft elevation, depending on which deck of bays), it “leaks.” With all bays open, it can flow 250,000 cfs into the lake.

Years ago, I asked a French instructor and native speaker about the name. She told me bonnet was a reference to “hat,” “head,” or “top” and carré refers to a “crossing.” Their combination referring to the “top crossing” or its role as bypassing the river above New Orleans.

The Spillway is crossed by I-10 and US 61, as well as, the KCS and CN railways. Most of the time the floodway is, “dry,” with only seepage from the Mississippi River Levee keeping the low spots inundated. It is generally open to the public and managed for recreation, hunting, fishing,

ATVs, etc. There is a small visitor's center, with interesting displays and a video on the project, which is managed by the US Army Corps of Engineers. There are lots of other interesting historical notes about the area. An Internet search will find many images of the recent opening and other interesting information about the spillway.

Photo of the Month

This month's photo is of Shoshone Falls, on the Snake River near Twin Falls, Idaho. Shoshone Falls is sometimes called the "Niagara of the West". It is, in fact, higher than Niagara Falls, though only about 1/3 the width and carries only about 4-5% of the average annual flow. It is, nevertheless, quite impressive in non-drought years when flows are high during spring runoff. The falls were the upper limit for native sturgeon, salmon, and steelhead before the construction of dams lower on the Snake River. The photo was taken by Al Rea of the USGS in 2006.

ftp://nhdftp.cr.usgs.gov/Hydro/Images/ShoshoneFalls_20060430.JPG

NHD Quiz

Rankin Holmes of the National Fish and Wildlife Foundation was the winner of December's Hydrography Quiz, guessing it as the Snake River. See <ftp://nhdftp.usgs.gov/Quiz/Hydrography125.jpg>.

Rankin Holmes is a the Monitoring, Data and Evaluation Manager with the National Fish and Wildlife Foundation's (NFWF) Columbia Basin Water Transactions Program (CBWTP) based in Portland, OR. The CBWTP implements the Bonneville Power Administration's (BPA) streamflow restoration and mitigation program in the Columbia Basin. Rankin has a geo-spatial, water rights and hydrology background, and works with an extended network of non-profit organizations and state agencies throughout the Columbia Basin to re-connect and restore streamflow to dewatered river habitats for endangered salmon and other aquatic species of concern.

The [Snake River](#) is an interesting and hard-working river. It begins in the Grand Tetons in Wyoming, flows across southern Idaho, turns north and forms the border between Idaho and first Oregon, then Washington, then turns west into Washington where it joins the Columbia River. It is used heavily for irrigation and hydroelectric power generation, among many other uses. About halfway across southern Idaho below Milner Dam the flow often drops to zero during the summer when all of the water is diverted for irrigation. A little further downstream the Snake River Plain Aquifer discharges into the river from a series of mid-bluff springs known as [Thousand Springs](#). The Snake River carved out [Hells Canyon](#), which is the deepest canyon in North America, even deeper than the Grand Canyon.

Others with the correct answer (in the order received) were: Gerry Daumiller, Peter Holmes, Peter Cada, David Hockman-Wert, Barb Rosenbaum, Jen Crea, Mark Olsen, Sandra Thiel, David Straub, Kris Parson, Jake Kleinknecht, Roger Barlow, Neil Olson, Tom Christy, Dan Saul, Al Rea, Sheryl Boyack, Marc Weber, David Nagel, Matt Rehwald.

This month's hydrography quiz can be found at <ftp://nhdftp.cr.usgs.gov/Quiz/Hydrography126.png>. The area in and around the wetlands and large lakes in this image has been in the news lately. The areas of the lakes have been known to fluctuate greatly in the last several decades in response to changes in precipitation,

sometimes to the dismay of local landowners. What are the names of the largest two lakes?
Send your guess to saichele@usgs.gov

Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Thanks to Ellen Finelli, Tommy Dewald, Elizabeth Stevens-Klein, Dan Walters, and Jim Mitchell. The NHD Newsletter is published monthly. Get on (or off) the mailing list by contacting Steve Aichele at saichele@usgs.gov.

You can view past NHD Newsletters at http://nhd.usgs.gov/newsletter_list.html