

USGS National Hydrography Dataset Newsletter  
Vol. 11, No. 1, November, 2011  
by Jeff Simley, USGS

### **Eleventh Year of NHD Newsletter**

This issue marks the start of the 11<sup>th</sup> year for the NHD Newsletter. It has been published every month without fail for ten years. The primary objective is to provide a forum for communicating information on the NHD and WBD programs and also serves as a means to document program information for reference. It also acts as a focal point for the program around which the user community can help remain cohesive. Just having a mailing list for the Newsletter is important in identifying the user community. Every month a number of people ask to be added to the distribution list. From these requests and from the addresses of those who play the hydrography quiz every month it can be seen that the Newsletter distribution reaches far beyond the 500 person email list. Thanks to all of those who forward the Newsletter to colleagues. An important way to make the Newsletter more successful is to see more contributions from the readers on how they are using the NHD and WBD. Please do not hesitate sending in a blurb on what you do regardless of how experimental or insignificant it might seem. The sharing of ideas is critical to allow the evolving science of hydrography to prosper. See below for the lead stories in the first NHD Newsletter. To see past Newsletters, go to [http://nhd.usgs.gov/newsletter\\_list.html](http://nhd.usgs.gov/newsletter_list.html).

### **NHD/WBD Stewardship Conference**

The fourth bi-annual NHD/WBD Stewardship Conference will be held in New Orleans, Louisiana March 29-30, 2012. It will be held in conjunction with the American Water Resources Association's 2012 Spring Specialty Conference on Geographic Information Systems and Water Resources VI, held March 26-28 in New Orleans at the Sheraton, see <http://www.awra.org/meetings/Spring2012/index.html>. The AWRA conference will focus on applications of GIS in water resources, which involves the NHD and WBD, while the stewardship conference will focus on data stewardship and data maintenance issues. Holding the two conferences together will enable travelers who would normally attend both conferences do so in just one trip. Although abstracts for the AWRA conference are closed, abstracts for the stewardship conference will be open through January 23, 2012. Please submit an abstract in an email to Jeff Simley, [jdsimley@usgs.gov](mailto:jdsimley@usgs.gov) with the subject "Stewardship Conference". More information on the conference will be forthcoming. If you have an interest in the NHD/WBD Stewardship Conference, please contact Jeff Simley at [jdsimley@usgs.gov](mailto:jdsimley@usgs.gov).

### **Attending the NHD/WBD Stewardship Conference**

The stewardship conference will be held all-day Thursday and Friday morning March 29-30, 2012. If you plan to attend the stewardship conference send an email with the subject "Stewardship Conference" to Jeff Simley at [jdsimley@usgs.gov](mailto:jdsimley@usgs.gov). If you would like to attend, but are not sure if you can, please also send an email with the same subject line. That will help determine interest in the conference. If you plan to attend, make hotel reservations as soon as possible. The weekend is the Men's Final Four NCAA Basketball Championship. See <http://www.ncaa.com/championships/basketball-men/d1>. Hotel rooms are very scarce and very expensive. However, if booking the hotel room through AWRA you can take advantage of 60 rooms set aside for the Stewardship Conference Thursday night at \$149.00. See <http://www.awra.org/meetings/Spring2012/travel.html>. Plan on departing New Orleans Friday afternoon.

### **AWRA Papers**

The AWRA Spring Specialty Conference on GIS and Water Resources VI will include 14 papers on the NHD and an additional 8 papers that reference the NHD, plus 3 NHD posters. The AWRA Sunday

(March 25) workshops will include an all-day series on the NHD including: (1) An introduction to the NHD, (2) Using the Hydrography Event Management Tool, and (3) Using the New NHDGeoEdit Tool.

Tracks for the conference are expected to include 1. Executive Track, 2. Arc Hydro Groundwater, 3. Urban Watershed Planning with GIS, 4. Soil/Water Geospatial Modeling, 5. Panel - World Water Online, 6. Integrated Surface and Groundwater, 7. GIS Flood Loss Planning and Mitigation Tools, 8. Modeling Sediment Transport and Impoundment, 9. NHD 1, 10. HIS 1, 11. Atchafalaya Basin Resource Management: Spatial Tools for Decisions, 12. Decision Support / Water and Power, 13. NHD 2, 14. HIS 2, 15. Cool Coastal Stuff, 16. Multiagency Flood Information/Flood Mitigation, 17. Updates – NHD, 18. Hydrofracture/Mining Impact Assessment, 19. Decision Support / Coastal Systems, 20. Decision Support / Forecasting, 21. NHD Plus, 22. Using Open Standards, 23. Riparian, 24. Watershed Planning and Outreach Information Systems, 25. BBB, 26. Integrated Streamflow Simulation 1, 27. LiDAR Enhanced Analyses 1, 28. Total Maximum Daily Load (TMDL) Tracking and Assessment, 29. Automated Geospatial Watershed Assessment (AGWA) Tool, 30. Integrated Streamflow Simulation 2, 31. LiDAR Enhanced Analyses 2, 32. Land Use/Landscape Analysis, 33. Applications of the Hydrologic Schematic Processor, 34. Climate Change 1 - Impact Assessment, 35. Real Time Flood Awareness, 36. Watershed Assessment for Environmental Management, 37. Bridging Boundaries, 38. Climate Change 2 - Hydrologic Forecasting, 39. Integrated Assessment Frameworks, and 40. Using Infrastructure GIS with Business Data. Each track will have four papers.

### **Moratorium on NHD updates - by Paul Kimsey**

USGS is nearing the completion of the NHD Update Process Improvement Project and in order to make the transition from the current update process to the new process we will need to invoke a moratorium on NHD updates. Requests for data extracts from The National Map viewer will not be affected however, extracts for the purpose of updating NHD data with the intent to submit updates back to the national database will be affected by the schedule below:

- (1) Requesting submittal of all large updates (Conflation/Complete Revision etc.) by December 7, 2011  
Final QC approved prior to submittal
- (2) Requesting submittal of all medium/small updates by December 14, 2011  
Final QC approved prior to submittal
- (3) NHD editors may continue to check out small jobs through December 9, 2011
- (4) All updates must be received by COB December 14, 2011 otherwise they will not be processed  
Final QC approved prior to submittal
- (5) Total estimated downtime is one month (no updates can be performed during this time) with a goal to go live with new process mid-January, 2012.

Please direct questions to Paul Kimsey [pjkimsey@usgs.gov](mailto:pjkimsey@usgs.gov) or any of the NHD Regional Points of Contact.

### **Determining Steward Web Editing Needs – by Kathy Isham**

Over the past few weeks, the NHD performed a study to determine the business need for the implementation of a National Web Editing tool. In order to do this, the NHD interviewed a cross-section of stewards to determine whether a national web editing tool is needed, and if so, what functionality should this tool have. Several examples of Web Editing tools, such as the Alabama WET tool and the Idaho web editing tool were used as examples of Markup tools, while the OpenGeo web editing prototype was used as an example of a fuller functionality editor for the NHD. The results of the interview will assist in writing requirements for implementation and development of a web editing tool hosted by the USGS. Most of those interviewed in the survey were enthusiastic about a national web editing tool but

there were some that that could not say how necessary a full functionality web editing tool is with the impending availability of the new Geo Edit tools. Still others thought that USGS resources would be better spent elsewhere rather than on web editing tools. Of those in the greater majority that support web editing, most agreed that a Web Markup tool could be available to the general public but a markup tool must have an excellent metadata tool and the editors submitting markups should be required to submit contact information in case further clarification is needed. These markups would provide basic attribute and geometry edits and the ability to create new features. The markups would go to the Steward to be accepted or rejected (as they are with the Alabama WET tools) and in the case where a state does not actively participate in Stewardship these edits would go to the USGS for verification. Of those that support a fuller functionality web editing tool (applies feature to feature rules, reach delineation rules, edit data directly, imports geometry etc) all agreed that access must be restricted to those highly knowledgeable in editing NHD data. These people would be appointed by stewards and/or USGS. Some people would like to see a full functionality web editing tool performing conflation and editing of the WBD. Everyone that was interviewed agreed that tool simplicity is key. By interviewing stewards, the USGS was able to gain insight on the extent of the functionality that would be required for editing NHD over the web. This information will be helpful in writing requirements needed for implementing a national web editing tool. If you would like to provide feedback, comments, concerns, or to learn more about web editing investigations being performed by USGS, please contact Kathy Isham at [krisham@usgs.gov](mailto:krisham@usgs.gov).

### **USGS National Hydrography Dataset Newsletter, Vol. 1, No. 1, November, 2001**

Here were the topics in the first NHD Newsletter...

100K NHD Status: The 1:100,000-scale NHD is nearly complete for the U.S. The final few sub-basins (out of over two thousand) are being completed. Stand by for the announcement that the U.S. (except Alaska) is complete.

Progress in Utah: The state of Utah agency responsible for geo-spatial data, the Automated Geographic Reference Center (AGRC), is working with the USGS and the U.S. Forest Service to create a three-way partnership to produce NHD over the state...

USGS – USFS Meeting: Representatives of the USGS and the U.S. Forest Service met November 6 and 7 to strategize production plans for joint NHD production for the next six months... The program, involving about \$9 million in overall funding, serves as a powerful foundation to the geo-spatial data needs of each agency. Forest Service lands involve 40% of the sub-basins in the U.S...

USGS - USFS Progress: Currently, the George Washington-Jefferson, Bridger-Teton, Salmon-Challis, and Payette National Forests are in NHD production... A large project covering USFS lands in southern California is nearing completion...

Technology News: The NHD program has always had its sights on more advanced geo-spatial models that will make data applications and data updating, easier and faster. This has led to an approach using object-oriented models and the Environmental Systems Research Institute (ESRI) Inc. Geodatabase model has shown promise as a pathway towards this goal. The USGS, the Environmental Protection Agency, and ESRI (under contract) are working in partnership to implement NHD in Geodatabase...

CFF Converter: The ability to convert non-USGS hydrography data into the NHD production process is particularly critical to successful partnerships. The U.S. Forest Service is providing

hydrography data in the form of their Cartographic Feature Files (CFF) and these must be converted into a form directly usable by the NHD process...

Alaska News: A large volume of Alaska 1:63,360-scale NHD is in work using an integrated production team of the USGS and two contractors; Horizon Systems Corp., and Titan Systems Corp. With many of the technical issues resolved, production is running smoothly and progress is building rapidly. It is expected that Alaska NHD will be completed by September, 2002.

### **NHD Photo of the Month** by Kathy Isham

This month's photo was submitted by Roger Barlow of the USGS and shows Grinnell Glacier in Montana. The rock wall backing the glacier is the Continental Divide and only 300 acres of glacier remain. This photo was taken September 24th, 2011. To see the photo of the month go to [ftp://nhdftp.usgs.gov/Hydro/Images/Grinnell\\_Glacier.JPG](ftp://nhdftp.usgs.gov/Hydro/Images/Grinnell_Glacier.JPG). Submit your photo for the NHD Photo of the Month by sending it to [krisham@usgs.gov](mailto:krisham@usgs.gov). This will allow the program to build a library of real-world photos linked to the NHD.

### **October Hydrography Quiz / New November Quiz**

Florence Thompson of the USGS Texas Water Science Center was the first to guess the October NHD Quiz as the North Fork Shenandoah River. See <ftp://nhdftp.usgs.gov/Quiz/Hydrography75.pdf>. Florence is a geographer at the USGS-Texas Water Science Center (TWSC) in Austin, Texas. The Center has about a dozen geographers, physical scientists, IT specialists, and web developers collaborating on a variety of water related GIS projects. Florence's primary work for the last few years has been the creation of 1:1,000,000-scale hydrographic data for the National Atlas of the United States. The dataset includes waterbodies, coastlines, and networked stream gages and streams. It is also vertically integrated with other 1:1,000,000-scale National Atlas datasets such as transportation features, and county, state, and national boundaries. It should be available soon for download at <http://www.nationalatlas.gov/> and as a WMS. The original source for the hydrographic data was the medium resolution NHD. Other work at TWSC includes: geodatabase development, cartography, data management, watershed modeling, watershed delineation and characterization, mapping applications for the web, mobile apps, and custom ArcGIS Add-Ins. For more examples and detailed descriptions of recent projects, see <http://tx.usgs.gov/GIS/>.

Others with the correct answer (in order received) were Kitty Kolb, Tom Denslinger, Sean Deinert, Jim McDonald, James Simard, Richard Patton, Edwin Abbey, Dean Tucker, Matt Rehwald, Ken Koch, Claire DeVaughan, Steve Shivers, Roger Barlow, Dave Hockman-Wert, Rob Dollison, Dave Straub, Bernie Sroka, and Cindy McKay.

Ken Koch notes Google maps incorrectly identifies this stream as the South Fork Shenandoah River, the GNIS Name is North Fork Shenandoah River.

Jim McDonald notes: To the immediate east is the Massanutten Mountain, which is located in the George Washington National Forest. The town of Strasburg is located in northeastern portion of the NHD quiz map area. The stream network shows a classic trellis drainage, which occurs in folded mountains, such as the Appalachian Mountains. The north fork of the Shenandoah River is located within the Shenandoah Valley, which is underlain by limestone and dolomites of the Cambrian and Ordovician age. To the east, the tops of the ridges on Massanutten Mountain are composed primarily of Silurian Massanutten Sandstone. Underlying the Massanutten Sandstone is the Ordovician age Martinsburg Shale. The Massanutten Mountain bisects the into a north fork and a south fork (which also can be seen in the quiz) near Front Royal, Virginia.”

Richard Patton notes: From: Intrenched Meanders of the North Fork of the Shenandoah River, Virginia, by John T. Hack and Robert S. Young, 1959, Geological Survey Professional Paper 354-A :

"The North Fork of the Shenandoah River, Va., is a classic example of a meandering stream intrenched in hard rocks. The spectacular meanders in which the river travels 3.2 times as far as the direct down valley distance coincide with the outcrop area of a belt of Martinsburg shale. Along the entire river the channel is adjusted to carry bed material of approximately uniform size, and passes through the meandering reach without significant change in channel cross section. The profile of the stream follows a simple logarithmic curve from the source to mouth. The upland on either side of the stream, however, slopes downstream at a grade much steeper in the arc of the meanders than in the nonmeandering area upstream. It is concluded that the meanders are caused by strong planar and prismatic structures in the Martinsburg shale that favor northwest-southeast differential erosion. The topography of the adjacent upland is graded to the present river. There is no reason to believe that the river has been intrenched from an erosion surface on which the relief was less than that of the present upland or that changes in base level have influenced the meander development."

This month's hydrography quiz can be found at <ftp://nhdftp.usgs.gov/Quiz/Hydrography76.bmp>. What's the name of the meandering river in the center? Send your guess to [jdsimley@usgs.gov](mailto:jdsimley@usgs.gov).

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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 Paul Kimsey and Kathy Isham.

The NHD Newsletter is published monthly. Get on the mailing list by contacting [jdsimley@usgs.gov](mailto:jdsimley@usgs.gov).

You can view past NHD Newsletters at [http://nhd.usgs.gov/newsletter\\_list.html](http://nhd.usgs.gov/newsletter_list.html)

Jeff Simley, USGS, assumes full responsibility for the content of this newsletter.