

USGS National Hydrography Dataset Newsletter  
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by Jeff Simley, USGS

### **NHDGeoEdit Tool Development Review**

The new editing tool for the NHD promises to be a complete change from the old way of doing business. A development review meeting was recently held to demonstrate the advancements that are being made. All in attendance, including several knowledgeable editors, were very pleased with what they saw. The development team is doing an excellent job completely revamping the tool to streamline it and make it reliable. This will mean that the investment necessary to edit the NHD will be much lower. It also means that many more people who work with the NHD will have the ability to successfully edit it. This will lead to a better NHD.

It is estimated the beta version of the tool will be ready March 1st at which time a roughly three-month testing cycle will begin. A nationwide rollout will probably occur in June. This will be accompanied by a phased training and implementation schedule throughout the summer. This will allow the NHD Point of Contacts the chance to incrementally assist the stewards and avoid too rapid a deployment. By October the new tool should be in full operation. Feedback from actual operations will be used by the development team to further enhance and modernize the tool to keep pace with expectations. Future Newsletters will highlight the features that make the tool so significant to the continued success of the NHD and WBD programs.

### **Maryland MOU by Roger Barlow**

The Maryland Department of the Environment (MDE) and the United States Geological Survey (USGS) have signed a Memorandum of Understanding (MOU) to identify the activities and responsibilities that each will undertake to maintain, update, and improve the National Hydrography Dataset (NHD) and the Watershed Boundary Dataset (WBD) in a program of data stewardship. This agreement also provides that the NHD and the WBD data will be viewable and available for public use. The most direct benefit of shared maintenance is the ability to be informed about changes on the landscape and to receive spatial data that reliably represents those changes. The most current, best resolution, and continuously maintained geospatial information typically reside with state and local governments and other resource oversight organizations. These organizations will work cooperatively with MDE to implement a program to exchange updates and improvements to the NHD and WBD for the state of Maryland.

### **NHD US/Mexico Hydro Harmonization Project by Tony Litschewski**

The USGS along with their Mexico counterpart agency, INEGI, is currently working on a cross-border hydrography harmonization project. The harmonized datasets (28 HU8's) will eventually be available for public download along the international border. The US data is from the 1:24,000-scale National Hydrography Dataset (NHD), while the Mexico data is from their 1:50,000-scale hydrography dataset. New methodologies have been developed during the course of this project. Some of the major steps include; re-digitizing the shoreline of the entire Rio Grande River using NAIP imagery from 2008 and 2005, edge matching drainages along the border, incorporating the bi-national waterbodies for the Mexican side, converting the Mexico data into the US data model using Feature Manipulation Engine (FME), incorporating an external crosswalk table for future maintenance, populating reaches and waterbody area comID's on the Mexico data, and QC/corrections before uploading the final product to the US database.

To date, the western portion of the project (up to the Rio Grande River) has been edge matched, converted, and uploaded to the NHD database. Several more steps remain on this portion of the project including adding reaches, populating the waterbody area ComID's, and QC. As for the eastern portion of the project (Rio Grande River), the shoreline for the Rio Grande River has been totally re-digitized and is in the NHD database. We are currently working on edge matching and converting this portion of the project to the US data model.

When completed, the resulting data will facilitate scientists, public health officials, resource managers, and the general public to make informed decisions in support of environmental health and other future studies. For further information contact: Tony Litschewski – U.S. NHD Project technical lead – [aalitschewski@usgs.gov](mailto:aalitschewski@usgs.gov), Paul Kimsey – U.S. NHD Project manager – [pjkimsey@usgs.gov](mailto:pjkimsey@usgs.gov). The English version of the INEGI user's manual is located at - [ftp://nhdftp/US\\_Mexico/](ftp://nhdftp/US_Mexico/)

### **Ongoing WBD Activities** by Karen Hanson

Although nationwide WBD exists, several projects are ongoing to improve the dataset. (1) Minor WBD improvements are being accomplished in various states. (2) A nationwide review of hydrologic unit names at all levels is in progress for integration with GNIS. (3) Nationwide review, minor edits, and updates to accommodate the NHDPlus refresh are in progress. (4) The WBD coastal standard is currently being applied to the Texas and California coast. (5) Linework adjustments based on high resolution IFSAR or LiDAR base products have recently been incorporated into WBD in areas of Alaska and Oregon and are in-progress in Minnesota, New Jersey and Florida.

### **WBD/NHD Integration Status** by Stephen Daw

Reach migration is nearly complete. Only 34 subbasins out of 2264 have not had their reach codes migrated. 28 of those subbasins are in Alaska. Every effort will be made to finish up those remaining subbasins. In relation to reach code migration, it was discovered that there were some truncated reach codes on water bodies in HU4's 1701 1702 and 1006 totaling 465 truncated reach codes in all. These incorrect reach codes have been updated and should be posted to the NHD distribution dataset by Monday, January 31.

Also on January 31, The National Map users and NHD users will see an updated version of the WBD. Since integration in July 2010, a snapshot of the WBD from April of 2010 was in use in the NHD and TNM. The new version of the WBD is a snapshot from early November, 2010. This new version of the WBD reflects not only changes along the Canadian border but also includes more data such as hydrologic unit names. This version of the WBD will remain in use in the NHD until the live integration of WBD into NHD happens this summer. More details about live integration will be presented at the National Map user's conference here in Denver this May.

WBD tool development continues to move forward. WBD editing tools are being developed in conjunction with the new version of the NHD editing tools. These tools will share several common features such as metadata editing capabilities and the tools needed at the beginning and ending of the editing process. This shared development has necessitated that WBD tool development wait while NHD common pieces are developed. Beta-testing of the new WBD tools should start in February 2011.

## Colorado River

Two videos of interest on the Colorado River can be found on YouTube:

[http://www.youtube.com/watch?v=FIPV-H9iCPA&feature=related&safety\\_mode=true&persist\\_safety\\_mode=1](http://www.youtube.com/watch?v=FIPV-H9iCPA&feature=related&safety_mode=true&persist_safety_mode=1)

[http://www.youtube.com/watch?v=aTkOKns3YwY&NR=1&feature=fvwp&safety\\_mode=true&persist\\_safety\\_mode=1](http://www.youtube.com/watch?v=aTkOKns3YwY&NR=1&feature=fvwp&safety_mode=true&persist_safety_mode=1)

## In Memoriam - Greg Braynt

Those of us in the GIS hydrography community are saddened by the passing of our colleague Greg Bryant of the Denver Water Board. Greg was an early developer of hydrography databases when he worked with the USGS in the mid-1990's to digitize 7.5-minute series topographic maps into Digital Line Graphs. Greg and his team assembled these and 1:100,000-scale hydrography into databases covering the water supply systems for the Denver Water Board which cover significant portions of Colorado.

The GIS Colorado Board of Directors noted: "Greg was a tireless champion for our industry, a wealth of hydrologic GIS knowledge, and a friend to all of us. Greg worked tirelessly to push forward the efforts of the National Hydrography Dataset, hydrologic modeling, data stewardship, and inter-agency collaboration. His passing quiets a booming voice in hydrology geosciences and the entire geospatial industry. Greg firmly believed that sharing knowledge was fundamental to the success of our industry. His passion for developing GIS through knowledge-transfer between colleagues remains the fundamental tenet of GIS Colorado. His contributions in this regard were numerous and significant. Greg was key to making many conferences successes, and frequently led GIS Colorado's conference tracks at both GIS in the Rockies and SWUG. Each of us also knew Greg as the steward for the GIS Colorado listserv. He firmly believed that this open forum should remain free and unrestricted to facilitate sharing of GIS knowledge. It is because of Greg's efforts that this listserv remains as one of the nation's greatest resources for peer collaboration. Greg served as a GIS Colorado board member for several years, was integral to the formation of the organization, and was a regular fixture at GIS Colorado meetings statewide. Had he not persevered in the early years, GIS Colorado probably wouldn't be around today. He believed that collaboration and sharing between colleagues was more than just professional networking, but also was opportunity to forge lasting friendships. Whether over a beer at a local tavern, strumming a guitar at a social event, or even in a quiet meeting, Greg lit up the room with his vibrant personality."

Go to this link [ftp://nhdftp.usgs.gov/GeoWorld/Greg\\_Bryant\\_1.jpg](ftp://nhdftp.usgs.gov/GeoWorld/Greg_Bryant_1.jpg) to see a picture of Greg in action at the 2009 NHD Stewardship Conference in Denver.

## NHD Photo of the Month by Kathy Isham

This month's photo was submitted by Giovanni Gomez of the U.S. Bureau of Reclamation. This is of the Yampa River near Dinosaur National Monument in Colorado and is a popular river rafting spot. To see the photo of the month go to [ftp://nhdftp.usgs.gov/Hydro\\_Images/Yampa.jpg](ftp://nhdftp.usgs.gov/Hydro_Images/Yampa.jpg). Submit your photo for the NHD Photo of the Month by sending it to [krisham@usgs.gov](mailto:krisham@usgs.gov).

## December Hydrography Quiz / New January Quiz

Linda Davis was the first to correctly guess the December hydrography quiz as the Kettle River on the U.S. – Canadian border. See <ftp://nhdftp.usgs.gov/Quiz/Hydrography65.pdf>. Why is this significant? Because it's seamless hydrography, eh! Two nations working together - no minor undertaking! Linda is the GIS Manager for the Idaho Department of Water Resources. They are a state agency providing support for water planning, flood plain management, stream channel alteration and water rights. She is also an Idaho Point of Contact for NHD and Watersheds.

Linda forwarded this from Wikipedia: "The Kettle River is a 175-mile tributary of the Columbia River in northeastern Washington in the United States and southeastern British Columbia in Canada. Its drainage basin is 4,200 square miles large, of which 3,177 square miles are in Canada and 1,023 square miles in the United States. From its source at the outlet of Holmes Lake in the Monashee Mountains of British Columbia, the Kettle River flows south to Midway, British Columbia. Along the way it is joined by many tributaries, most notably the West Kettle River. Below Midway, the river loops south into the United States, through Ferry County, Washington, before flowing north back into Canada, passing by Grand Forks, British Columbia where the Granby River joins. After flowing east for about 10 miles, the river turns south again, just south of Christina Lake, entering the United States again. It then flows south, joining the Columbia River near Kettle Falls, Washington. The Columbia River at this point is a large reservoir impounded behind Grand Coulee Dam, called Lake Roosevelt. The Kettle enters the lake at the Columbia's river mile 706."

Others with the correct answer were (in order received): Tom Denslinger, Al Rea, David Straub, and Ken Koch.

This month's hydrography quiz can be found at <ftp://nhdftp.usgs.gov/Quiz/Hydrography66.jpg>. This is the drainage basin of Boulder Creek above its crossing of Broadway Street in Boulder, Colorado. The question is what is the area in square miles? It should take you less than three minutes to figure this out. Send your guess to [jdsimley@usgs.gov](mailto:jdsimley@usgs.gov).

## Upcoming NHD Training

February 16: Basic HEM Functions - 4 Hour WebEx, Sign up at: <http://nhd.usgs.gov/tools.html#hem>  
Contact: [HEM@usgs.gov](mailto:HEM@usgs.gov)

March 10: Advanced HEM Functions - 4 Hour WebEx, Sign up at: <http://nhd.usgs.gov/tools.html#hem>  
Contact: [HEM@usgs.gov](mailto:HEM@usgs.gov)

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Thanks to Roger Barlow, Tony Litschewski, Karen Hanson, Stephen Daw, 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)

If you actually read this all the way down to here, send me an email.

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