

USGS National Hydrography Dataset Newsletter
Vol. 8, No. 12, October 2009
by Jeff Simley, USGS

State Extracts Are Now Available by Kathy Isham

There is now a new method available for downloading NHD data. This method allows for data extraction by state in the form of a file geodatabase in high resolution. Just go to the Data tab in the NHD website <http://nhd.usgs.gov/data.html>. Then click the link [View NHD Extracts by State](#). This will allow you to see the date of the most recent extraction for each state. If a more recent extraction is needed, please specify the reasoning in your request. Due to space constraints, states cannot be pre-staged. Also, State Extracts do not have a geometric network. If the network is needed, please request it before the extract is placed on the ftp site. Send your state request to nhd@usgs.gov and the state will be posted to <ftp://nhdftp.usgs.gov/StateExtracts/High/FileGDB/>.

NHD Data Shift Update

The NHD data shift problem previously described in the Newsletter is being corrected by the USGS staff. Originally it was estimated that the problem may affect 3% of the 7.5-minute quadrangles used to make the high resolution NHD. However, the program has found that only about 0.3% of the quadrangles are affected. This data shift problem appears to have been caused by the incorrect use of datums or incorrect projection parameters. To date, the states that have been inspected and corrections made are New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, Tennessee, Kentucky, Ohio, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Texas, Oklahoma, Kansas, North Dakota, Montana, Idaho, New Mexico, Arizona, and California.

NHD Point Event Dams

The USGS continues to add dams to the NHDPointEventFC feature class, which to date contains approximately 37,000 dams. New dams are being added at a rate of about 1,000 per week. Each dam is verified by photoinspection and placed on a NHDFlowline to derive its address. The dams can be used either as point geometry or as a linear referenced event. As an event, the dam has greater utility in GIS analysis using network analysis. Approximately 20,000 streamgages also exist in NHDPointEventFC. A shapefile of the NHD point events can be found in: ftp://nhdftp.usgs.gov/Custom/Events/NHD_PointEvents_20091020/

NHD Image Update Process

The NHD image update process discussed in the last newsletter continues to move forward. Kansas and Oklahoma updates are done. One quarter of Texas (1,600 quads) has been photoinspected with 2008 imagery with no significant issues in the currency of the NHD detected so far. Kentucky is also being photoinspected and to date there are no significant issues between the NHD and the 2008 imagery. Indiana will be next in the schedule.

Florida by Joe North

Prior to the early 1900's, the central and southernmost portion of the Florida peninsula was covered by a vast connected series of wetlands commonly known as the Everglades. In an effort to convert these wetlands to human-habitable and agricultural lands, a number of water control projects that included the creation of large dike and canal systems were carried out. Periodic hurricanes threatened development, so in subsequent years, activities aimed at controlling flood waters further changed natural flow patterns.

Today, approximately only 50 percent of the natural system remains ([USGS Circular 1182](#)). The predominance of man-altered water features at the land's surface in southern Florida is captured in digital geospatial form in the National Hydrographic Dataset. "Currently, a Comprehensive Everglades Restoration Plan (CERP) is being implemented through a 50-50 state-federal partnership. The plan provides a framework and guide to restore, protect and preserve the water resources of central and south Florida, including the Everglades. The plan encompasses 16 counties over an 18,000-square-mile area. The goal of CERP is to capture fresh water that now flows unused to the ocean and redirect it to areas that need it most ([FDEP](#))." This program and other activities both ongoing and planned will further change surface water capture and flow. As a result, the impact of these activities upon the Bureau of Watershed Management's Stewardship of the NHD is manifold and is expected to continue for many years. CERP activities include; wetlands restoration, backfilling canals, capture and diversion of storm water runoff, installation of levee systems, creation of new canal systems and new water control structures among others. Each of these activities will require changes to the NHD that will include the addition and deletion of features, the reassignment of feature types, new feature names, changes in flow directions, and edition of existing feature extents. Special attention will be paid to the timing of CERP activities so that the NHD can remain an accurate and current data layer for those who depend upon it for mapping and analytical purposes. Sub stewardship partnerships with professionals who have expertise with South Florida's hydrology will be key to the success of Florida's NHD stewardship program.

Watershed Boundary Dataset for Alaska Completed by Karen Hanson

The Watershed Boundary Dataset(WBD) for Alaska has been completed and submitted for certification review in accordance with the Federal Guidelines, Requirements, and Procedures for the National Watershed Boundary Dataset. The dataset was created through a coordinated effort between multiple in state federal and state agencies providing review and oversight, with additional out of state assistance from experienced WBD technical teams at the U.S. Geological Survey, U.S EPA, the Wyoming Geographic Information Science Center (WyGISC), and Utah State University. Beyond the current requirement for WBD certification, the newly developed WBD coastal standard* has been applied in 3 of the 6 Subregions. Work will continue over the next several months to apply the coastal standard to the remaining 3 Subregions. Harmonization of boundaries which span the Alaska and Canadian border are in progress, as are other shared U.S. borders with Canada. Special thanks goes to the Bureau of Land Management in Anchorage, Alaska for their sustained involvement and oversight of this project during the ten year endeavor.

* The WBD coastal standard was developed from the results of a highly collaborative pilot that was implemented in 6 different coastal areas of the U.S. This information is in progress to be included into the Federal Guidelines, Requirements, and Procedures for the National Watershed Boundary Dataset. For more information, please contact khanson@usgs.gov or psteeves@usgs.gov.

FY2010 Exchange Network Grant Solicitation Notice by USEPA

The U.S. EPA has released the FY 2010 Exchange Network Grant Solicitation Notice. The grant guidance states that the program may be used to fund the standardization, exchange and integration of geospatial information to address environmental, natural resource and human-health issues. This grant program has been an important factor in helping to establish Minnesota's NHD stewardship program as described at <http://www.exchangenetwork.net/exchanges/water/owir.htm>. The notice is now available for download at http://www.epa.gov/exchangenetwork/grants/FY_2010_SolicitationNotice_FINAL_07282009.pdf. The application deadline for FY2010 Exchange Network grants is midnight November 20, 2009. The Solicitation Notice contains important information about eligibility, application procedures, and funding priorities. As a reminder, the Exchange Network Message Board is a good place for Network partners to share ideas on innovative projects and perhaps find new groups with which to partner at <http://www.websitetoolbox.com/tool/mb/exnet?forum=97250>. The EPA Web site at

<http://www.epa.gov/exchangenetwork/grants> includes information on What's New, Frequently Asked Questions, and do's and don't's for the FY 2010 Exchange Network Solicitation Notice.

The Importance of Sub-Stewards in Idaho by Wilma Robertson

The Idaho Department of Water Resources (IDWR) functions as the National Hydrography Dataset (NHD) Steward for Idaho. This means that updates to the NHD are submitted to the IDWR, who then processes this data using specialized USGS tools and submits the edits to the USGS for inclusion into the national database. See <http://www.idwr.idaho.gov/GeographicInfo/NHD/default.htm> for more information about the NHD in Idaho. Several States have introduced the concept of Sub-Stewards where designated people in agencies will be trained on using the specialized USGS tools and submit their data to IDWR in a form that IDWR can easily forward to the USGS without extensive processing by IDWR. Here are some advantages of having Sub-Stewards: (1) The 1:24,000 scale NHD layer has been selected by the Spatial Data Infrastructure (SDI) in Idaho as the official hydrography dataset. It makes sense if we all work together to maintain and update this dataset so we can all benefit from our "collective knowledge" to create and maintain the best available data. (2) Being a Sub-Steward allows more control of the updates, including the speed at which those updates can be included in the national dataset. Currently IDWR has one employee processing data and there is a queue and waiting list for updates that need to be processed by the IDWR. Any waiting time would be greatly reduced if an agency can provide the data to IDWR in a format that can be easily forwarded to the USGS with only minimal processing at IDWR. Hank Nelson, the USGS NHD Point of Contact, is planning a training session on the USGS NHD editing tools in Boise in early 2010. This will be an ideal opportunity for potential Sub-Stewards to receive training and learn more about the NHD update process.

NHD in Google Maps

Google Lat Long Blog posted the following statement: "Today you may notice that the United States looks a bit different in Google Maps... That's because we've worked directly with a wide range of authoritative information sources to create a new base map dataset. In our experience, these organizations that create the data do the best job of keeping it accurate and up-to-date. For example, in the US there are a number of publicly accessible geospatial datasets created by the government for the Census, land surveying, and transportation. These datasets provide information on everything from road networks and water bodies to toll roads and bridges. By integrating this information, and working with specialized data sources like the USDA Forest Service's Forest Boundaries and the US Geological Survey's National Hydrography Dataset, we've been able to expand and improve features in our maps like parks and water bodies. Satellite, aerial, and Street View imagery also helped... The best part about this new dataset is that we've been able to add a lot of new, detailed information to Google Maps - information that helps people better explore and get around the real world." From <http://google-latlong.blogspot.com/2009/10/your-world-your-map.html>

NHD Stewardship Activity

The following states have updated the NHD in the past six months through data stewardship processes: New York, Maine, New Jersey, Montana, Idaho, Washington, Oregon, California, Alaska, Delaware, West Virginia, Virginia, North Carolina, Florida, Arkansas, Illinois, Iowa, Nebraska, Minnesota, Colorado, Alabama, Kentucky, and Michigan. Louisiana and Utah have submitted edits that are not yet accepted.

NHD Web Site Activity

In the past twelve months there have been 380,103 successful requests for pages on the NHD web site. That averages over 1,000 per day! That's third behind *The National Map* (1,287,378) and Topomaps (837,534). That's a lot of viewers!

NHD Photo of the Month

Allen Karsh of the U. S. Geological Survey has submitted the featured photo for this month highlighting Oneonta Falls in Oregon ftp://nhdftp.usgs.gov/Hydro_Images/OneontaFalls.pdf. The gorge where this waterfall can be found is known as Oneonta Gorge and has been designated by the U.S. Forest Service as a Botanical Area due to its unique aquatic and woodland plants. To submit your photo to be considered for the NHD Photo of the Month, please send it to krisham@usgs.gov.

AWRA Conference

The American Water Resources Association's popular series of conferences on GIS & Water Resources continues with its sixth GIS & Water Resources conference, this time in Orlando, FL March 29-31, 2010. For the latest information visit: <http://www.awra.org/meetings/Florida2010/>

September Hydrography Quiz / New October Quiz

Grant Wilcox was the first to correctly guess the September hydrography quiz as Lake Dillon nestled near the Continental Divide 70 miles west of Denver. See <ftp://nhdftp.usgs.gov/Quiz/Hydrography50.pdf>. The Lake was built in the 1960's using a mile-long 230 foot high earthen dam to supply water to Denver via a 23 mile tunnel diverting water from the western to eastern slope of the Rocky Mountains. The purple line in the image is the Harold Roberts tunnel with a capacity of 1,020 cfs. Grant is the Aquatic GIS Analyst for the Colorado Division of Wildlife. He has been working to move the GIS unit away from older hydrology data by tying in fish sampling, stocking, fishing regulations, and water quality data to NHD hydrology data for more consistency when working with other agencies. They are also using NHD data as the base for the Cutthroat Trout databases storing population information as route events. He has been participating on the Colorado NHD Stewardship committee and spent several months re-digitizing approximately 1,000 lakes in the NHD that have been passed up to the committee for inclusion into a future local resolution NHD.

Others with the correct answer (in order received) were: Jean Parcher, Janel Day, Michael Smith, David Asbury, David Fetter, John Lynam, Ellen Finelli, John Beebe, Joe North, Richard Patton, Brian Sanborn, Ken Koch, Erik Johnson, Bob DenOuden, David Greenlee, David Straub, Dillon Reservoir, Calvin Meyer, Linda Davis, Gail Jackson, Carl Zulick, Steve Char, Tom Christy, Tom Denslinger, Frank Jackson, Roger Barlow, Tommy Dewald, Jim McDonald, and Edwin Abbey.

This month's hydrography quiz can be found at <ftp://nhdftp.usgs.gov/Quiz/Hydrography51.pdf>. What is the name of the lake and why is there an inner and outer polygon defining the lake? The dark blue lines are perennial streams and the light blue lines are intermittent streams. That should give you a hint as to what area of the country this is in. The lake, the largest in this state, is a dammed river, which flows north to south. Send your guess to jsimley@usgs.gov. Thanks to Kathy Isham for the quiz.

Upcoming NHD Maintenance Training

January 12–15, 2010: Trenton, N.J., Contact David Anderson (danderson@usgs.gov) or Craig Coutros (craig.coutros@dep.state.nj.us)

January 19–22, 2010: Concord, N.H., Contact David Anderson (danderson@usgs.gov) or Greg Barker (Gregory.Barker@des.nh.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 John Chaney, Charles Bowker, Kathy Walker, Joe North, Tommy Dewald, and Kathy Isham.

The NHD Newsletter is published monthly. Get on the mailing list by contacting jdsimley@usgs.gov.

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

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