

# USGS National Hydrography Dataset Newsletter

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by Steve Aichele and Al Rea, USGS

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## AWRA GIS Specialty Conference IX

By Steve Aichele

The NHD was well represented at the recent AWRA GIS Specialty Conference in Sacramento. Seven separate sessions in a dedicated track explored recent developments with the NHD and NHDPlus, including the High-res NHDPlus; the Open Water Data Initiative and linked data; unifying data networks through generalization; applications of the National Water Census Data Resources & Portal; and a group discussion of what hydrography will look like in five years. The conference was also an excellent opportunity for users of the NHD and WBD to reconnect with the USGS staff and stewards who maintain the data. There will be several NHD topics at the AWRA Annual Meeting this fall, and we look forward to an even stronger showing at the 2018 GIS Specialty Conference.

## NHDPlus Technical Workshop

EPA and USGS collaborated with the California Water and Environmental Modeling Forum to hold the “Getting to Know NHDPlus: Applying A National Geospatial Surfacewater Framework” Workshop on July 14-15, 2016 in Sacramento, CA. The Workshop was attended by over 130 Geographic Information System (GIS) practitioners, hydrologic modelers, and water resource analysts from federal/state government, academia and private industry, who were instructed on the latest NHDPlus techniques, tools, and data enhancements. The Workshop followed the American Water Resources Association (AWRA) Specialty Conference on GIS and Water Resources held in Sacramento earlier in the week. This pairing of events provided a unique opportunity for the water resources geospatial community to share their applications and interests. (Point of contact: Tommy Dewald, [dewald.tommy@epa.gov](mailto:dewald.tommy@epa.gov))

# July 2016 NHD Network Improvement Project Status Report

By Cynthia Ritmiller, Project Manager

The NGTOC continues its focus on the Network Improvement Project with the goal of identifying and correcting network and data quality issues existing in the high resolution NHD. One of the key drivers for this effort is the need to provide data ready to use for the production of NHDPlus High Resolution (NHDPlusHR). Data is being reviewed and edited to support the production schedule for NHDPlusHR beginning with Regions 06, 01,12,02,14,and 15. Coordination with appropriate NHD POC's will begin prior to review. Please see status information for details.

Network Improvement- Status (As of July 22, 2016):

Network Improvement Regions Completed: 06, 01, 12, 20, 21 and 22

Network Improvement Regions In Work:

\*\*\*Note: For all regions listed below, as new data becomes available it will go through the QA/QC process.

Region 02 - New QC's were ran for sub-regions 0201- 0208, Chris Helm and Tanya Buxton-Torres is reviewing.

Region 07 - Charles Browker and Allen Karsh are reviewing sub-region's 1701 - 1714.

Region 10 - Chris Helm, Allen Karsh, Travis Landauer, Bob Merson, and are reviewing sub-regions 1003 - 1030.

Region 14 - Subregions 1401 through 1407 have been reviewed and sent to Horizon Systems for NHDPlusHR processing. Tanya Buxton- Torres is reviewing 1408.

Region 15 - Subregions 1501 through 1504, 1506, and 1508 have been reviewed and sent to Horizon Systems for NHDPlusHR processing. Tanya Buxton- Torres is reviewing 1505 and 1507.

Region 16- Carol Brady is reviewing sub-regions 1601-1606.

Within the month of August, work will begin within region 03, 04, 05, 08, 11, 13, and possible 17.

Network Improvement Regions Remaining: 03, 04, 05, 08, 09, 11, 17, 18, and 19

## WBD News

Elizabeth Stevens-Klein, Kimberly Jones, Susan Buto

National WBD USGS Team Structure

USGS is positioning its Water Boundary Dataset (WBD) investment to align with the NHDPlus HR vision for the future. USGS and the Natural Resources Conservation Service (NRCS) co-manage the WBD. NRCS is represented by Steve Nechero who co-chairs the WBD Steering Committee and by Laura Davenport who represents NRCS on the WBD Technical Coordination Team.

The USGS WBD team is jointly managed by the National Geospatial Program (NGP) Topographic Data Services Office, NGP National Geospatial Technical Operations Center (NGTOC), and the USGS Water Mission Area Office of Water Information. The USGS WBD team structure and membership recently has been organized into four management and technical functions. The functions and team members are:

1. WBD Team Lead: Sue Buto (USGS Nevada Water Science Center (WSC))
2. WBD National Technical Coordination Team Lead: Kimberly Jones (USGS Utah WSC)
3. WBD National Technical Point of Contact and Tools Product Owner: Elizabeth Stevens-Klein (USGS National Geospatial Technical Operations Center (NGTOC))
4. WBD Technical Applications Specialist: Pete Steeves (USGS New England WSC)

In addition, the WBD Editor Tools are supported by developers within NGTOC, and the dataset is maintained at a national level by editors in NGTOC and the GIS unit of the Utah WSC.

Contact Sue Buto ([sbuto@usgs.gov](mailto:sbuto@usgs.gov)) with questions.

#### WBD Model Implementation and Required WBD Editor Tools

The new WBD Model 2.2.1 is on track to be implemented the beginning of August. WBD Editor Tools 2.3.2.5 for ArcGIS 10.3.1 and WBD Model 2.2.1 will be required in order to edit WBD after the new model is implemented. Stewards and editors, please obtain these new tools from the Hydrographic Data Community, WBD Community, Software Download page. Please remember to uninstall all USGS add-ins and tools before uninstalling ArcGIS 10.2 and upgrading to ArcGIS 10.3. WBD Editor Tools 2.3.2.5 were just delivered to NRCS to begin the certification process, which may take up to 6 weeks. For NRCS stewards who need to edit WBD before September, please contact Elizabeth Stevens-Klein ([estevens-klein@usgs.gov](mailto:estevens-klein@usgs.gov)) to coordinate an alternative editing workflow.

#### NHD Photo

This month's photo was contributed by Al Rea, and was taken in Hells Canyon, the deepest river gorge in North America, at more than a mile deep. (Deeper than the Grand Canyon, though admittedly a little less spectacular.) Here's some more info:

<http://www.fs.usda.gov/detail/wallowa-whitman/recreation/?cid=stelprdb5238987>

Check it out at [NHD Photo of the Month](#)

## NHD Quiz

Last month's quiz was Optima Lake, in the middle of the Oklahoma panhandle.

The Corps of Engineers built it based on data collected prior to the mid 1960's. By the time it was finished in 1978, however, the circle pivot technology had come about and the High Plains (also known as Ogalla) Aquifer had been drawn down substantially with by pumping. The river went from a gaining stream to a losing stream, and the reservoir never filled. There were boat ramps, campgrounds, etc., expecting a big recreational lake, but it never materialized.

Check out the graph of the gage data:

[http://waterdata.usgs.gov/nwis/dv?cb\\_00060=on&format=gif\\_default&site\\_no=07232500&referr ed\\_module=sw&period=&begin\\_date=1937-01-01&end\\_date=1993-12-31](http://waterdata.usgs.gov/nwis/dv?cb_00060=on&format=gif_default&site_no=07232500&referr ed_module=sw&period=&begin_date=1937-01-01&end_date=1993-12-31)

There essentially are no floods anymore on the Beaver River, but not because the dam is holding them back. Floods now soak into the dry river bed after traveling downstream a few miles.

The original USGS topographic quads apparently were made using the planned storage pool. Both the 24K and 100K DRGs showed the planned lake as if it really existed, even though it never filled. By the time NHD High Resolution was made someone realized it would never fill and showed its true extent.

[https://en.wikipedia.org/wiki/Optima\\_Lake](https://en.wikipedia.org/wiki/Optima_Lake)

Images:

[https://www.google.com/search?q=lake+optima&espv=2&biw=1125&bih=686&tbm=isch&tbo=u &source=univ&sa=X&ved=0ahUKEwihzO2i7\\_DMAhWEHT4KHWVyDkQQ7AkIMA](https://www.google.com/search?q=lake+optima&espv=2&biw=1125&bih=686&tbm=isch&tbo=u &source=univ&sa=X&ved=0ahUKEwihzO2i7_DMAhWEHT4KHWVyDkQQ7AkIMA)

David Hockman-Wert of the USGS Aquatic Ecology Lab of the USGS Forest and Rangeland Ecosystem Science Center in Corvallis, Oregon was the first to correctly identify Optima Lake. David's work has recently been focusing on the \*lack\* of water in streams -- intermittency, flow (in)permanence, etc.

David has been using the NHD and NHDPlus streams a lot lately to model stream habitat patches for T&E-listed trout (bull trout, Lahontan cutthroat trout). Because the work spans multiple states (Oregon, Washington, Idaho, Montana, Nevada), having a solid, consistent stream layer is vital. The extra attributes of the NHDPlus streams have been very useful, as has the national NHDPointEventFC layer of dams (NID) linked to high-resolution NHD streams.

Others with the correct answer include: Matt Rehwald, David Straub, and John Kosovich

This month's hydrography quiz is a little different from the usual. This time, we're telling you what the water body is. The challenge is to find the reach code. The water body is Spotted Lake, in British Columbia. What is the ReachCode for the lake? Send your responses to [saichele@usgs.gov](mailto:saichele@usgs.gov). First correct answer wins. When you're done doing that, check out the beautiful video, story and photos here:

[http://www.nytimes.com/2016/07/21/science/spotted-lake-british-columbia.html?\\_r=0](http://www.nytimes.com/2016/07/21/science/spotted-lake-british-columbia.html?_r=0)