

USGS National Hydrography Dataset Newsletter  
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By Jeff Simley, USGS

### **National Hydrography Dataset Stewardship Conference**

The NHD Stewardship Conference in Denver, Colorado, April 24-26 was attended by 155 people representing 43 states, 6 federal agencies, and 6 private companies. Attendees were given an overview of future directions of the NHD and of the NHD stewardship program. The role of the USGS team to assist in data stewardship was covered as well as the role of NSDI Geospatial liaisons. A look at basic problems in the NHD dataset was explored followed by a look at the NHD change management system. Although stewardship is oriented around a state-based approach, Federal agencies also play an important role, so the U.S. Environmental Protection Agency, U.S. Forest Service, and Bureau of Land Management presented their perspective. The edit transaction process was covered followed by a presentation from Minnesota on how it has adopted this system along with its approach towards NHD stewardship. An in-depth look at revision programs in New Jersey, West Virginia, and North Carolina was presented by these states. Also NHD activities in Arkansas, Montana, Utah, Vermont, Florida, Texas, and Colorado were presented to give a sampling of how various states approach the NHD. A thorough examination of the maintenance process was presented in a series of talks about the NHD Geo Edit tool and its application in editing. Typical edits were demonstrated to give attendees a taste of the work performed to upgrade the dataset. Since names are a critical part of the NHD, a presentation was made on the Geographic Names Information System followed by how names can be handled in the editing process. An overview of stream densification in the Pacific Northwest was covered. Then three datasets highly related to the NHD were explored: the Watershed Boundary Dataset, the National Wetlands Inventory, and the National Elevation Dataset. This later presentation included a look at the role of LIDAR in hydrography. The role of the USEPA and its medium-resolution based NHDPlus was covered. Then the related role of StreamStats was reviewed. These two datasets represent future directions of the NHD and can be important guides in prioritizing the relative importance of edits needed in the NHD. A prospective of future possibilities of creating high-resolution NHDPlus was presented. The migration of events resulting from maintenance was also covered. Then the Event Management Tool was presented. Future developments of the NHD Geo Edit Tool were noted and then future geospatial dataset developments were previewed. New developments in NHD documentation were presented. The conference concluded with a question and answer session. The PowerPoint presentations from the conference can be seen at [ftp://nhdftp.usgs.gov/Stewardship/Denver\\_Conference](ftp://nhdftp.usgs.gov/Stewardship/Denver_Conference). The conference was viewed by all as being highly productive and strong support was voiced for the USGS NHD stewardship program.

### **New Stewardship POC Areas Staffed**

Steve Char will be the point of contact for NHD stewardship issues in California, Nevada, Utah, Arizona, and Hawaii. Steve can be contacted at [sjchar@usgs.gov](mailto:sjchar@usgs.gov) or 303-236-4882x320. Hank Nelson will be the point of contact for Michigan, Indiana, Ohio, Kentucky, and Tennessee. Hank can be contacted at [hpnelson@usgs.gov](mailto:hpnelson@usgs.gov) or 303-202-4448. Pete Steeves will be the point of contact for Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, and New York. Pete can be contacted at [psteeves@usgs.gov](mailto:psteeves@usgs.gov) or 508-490-5054.

### **Hydrography Event Management Tool**

The Pacific Northwest Hydrography Framework (PNWHF), in coordination with the National NHD Project Team and several state partners across the country, has completed work on Release 1.0 of the Hydrography Event Management (HEM) Tools. This set of tools supports creation, management, and

refresh of event data that is referenced to the NHD. The tools and supporting documentation are available for download from the PNW Hydrography Framework website at <http://hydro.reo.gov/redesign.html>. This initial release is under ArcGIS 9.1, Visual Studio 2003, and .NET 1.1.4. Following this release the PNWHF will be upgrading to Visual Studio 2005 and .NET 2.0 for ArcGIS 9.2. This second release will also be posted for download from the PNWHF website. The 9.2 release will be available by early May, 2007. Future bug fixes and enhancements will occur in the 9.2 version. Testing of the application prior to deployment highlighted a number of potential enhancements. The requirements discussions for these and other enhancements will begin in mid-late July, 2007. This is a very significant application that should benefit the NHD community across the nation. Contact Dan Wickwire, BLM, at 503-808-6272 or Bill Kaiser, USFS, at 503-808-2812 for any questions regarding the release.

### **Processing Performance of the NHD**

The limited performance of the NHD processing system has been a factor in the increasingly large backlog of subbasins that are in the geodatabase backlog queue. To alleviate this large backlog a new server is being prepared. This will take some of the load off one of the two servers that are now processing NHD new subbasin loads, NHD maintenance updates, and NHD subregion loads. When this server is bought on line in the near future a much needed gain in system performance is anticipated. A procurement is also going forward for an additional new server for the NHD program. This new server will have substantially more processing capacity, and will make a further gain in system performance.

### **NHD Documentation**

Look for a new and revised set of NHD documentation in draft form available for your review and comments. The documents: (1) [Standards for National Hydrography Dataset – High Resolution](#), (2) [Best Practices for the Revision of the National Hydrography Dataset](#), (3) [The National Hydrography Dataset Concepts and Contents](#), (4) [Introducing the NHDinGeo](#), and (5) [Stewardship of The National Hydrography Dataset](#) can be found at <ftp://nhdftp.usgs.gov/Docs>.

### **Answer to March Hydrography Quiz**

Bob DenOuden, a Senior Analyst, was the first to correctly guess last month's hydrography quiz <ftp://nhdftp.usgs.gov/Quiz/Hydrography22.pdf> as the Bonneville Dam, on the Columbia River along the Washington/Oregon state line. Bob works for Lane Council of Governments in Eugene, Oregon. LCOG is a voluntary association of local governments that provides planning and technical assistance to member agencies. He is a senior GIS analyst/project manager and one of the things he does is to provide support for hydrologic modeling and GIS analysis for drinking water source protection and other water quality issues. Others with the correct answer were: Dan Saul, Laurie Morgan, Mike Thompson, Ed Carter, Calvin Meyer, M. Butler, Bob Wucher, David Asbury, and Thomas Denslinger.

You can find out more about the dam at <https://www.nwp.usace.army.mil/op/b/home.asp>. Laurie Morgan notes: "The central waterway is the spillway, the lower waterway in the picture is the original powerhouse on the Oregon side, and the navigation lock is next to it. On the upper side is the Washington power house that was built much later." David Asbury notes: "This is the Bonneville Dam on the Columbia River. It is the most downstream of the major dams on the Columbia/Snake system. The original navigation lock at Bonneville was opened in 1938 and was, at that time, the largest single-lift lock in the world. Despite its world record size in 1938, "Bonneville Lock" became the smallest of seven locks built subsequently at different locations upstream on the Columbia and Snake Rivers; eventually a new lock was needed at Bonneville. This new structure was built on the Oregon shore, opening to ship and barge traffic in 1993. The old lock is still present, but is no longer used (from

[http://en.wikipedia.org/wiki/Bonneville\\_Dam](http://en.wikipedia.org/wiki/Bonneville_Dam) ). Also, the predation of salmonids by pinnipeds (primarily Stellar sea lions) below the dam has increased dramatically in the past few years. The Pacific Northwest's salmon and steelhead populations have been in serious crisis for the past number of decades, primarily due to passage barriers such as Bonneville Dam and other anthropogenic pressures. Despite extensive and expensive deterrent measures taken by the ACOE, the sea lions have capitalized on the accumulation of migrating fish below Bonneville Dam (as it's the first passage barrier on the Columbia) and significantly impacted the numbers of fish successfully navigating further upstream.”

There will not be an April quiz due to the NHD Stewardship Conference.

### **Upcoming NHD Geo Edit Tool Training**

Anchorage, AK - May, 2007. Contact Paul Kimsey or Carl Markon [markon@usgs.gov](mailto:markon@usgs.gov)

### **Upcoming NHD Application Workshops**

Kalamazoo, Michigan – May 7, 2007. Contact Steve Aichele at [saichele@usgs.gov](mailto:saichele@usgs.gov)

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Thanks to Terry Higgins.

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

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