

USGS National Hydrography Dataset Newsletter
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Generalization of the NHD

An effort has been underway to generalize the NHD to create smaller scale representations of the data, such as 1:100,000-scale from 1:24,000-scale, and to create a normalized representation from disparate density data such as 1:24,000-scale from a mixture of 1:24,000-scale and 1:4,800-scale. Initially this work focuses on the “pruning” of the data, which is the elimination of certain flowlines to “thin” the representation. Later work will deal with the “simplification” of the data, which is the elimination or modification of vertexes within the remaining flowlines to “smooth” the geometry. Results of the pruning process are available for review at the NHD FTP site by going to <ftp://nhdftp.usgs.gov/Generalization/>. Try pasting this URL in your web browser if the link doesn't work. You will find a five subbasin series of pdf images showing the original high resolution (nominally 1:24,000-scale) data, and the data pruned to 1:50,000-scale and 1:100,000-scale. The algorithm is based on an estimate of the upstream drainage area for each flowline and subsequent elimination of the flowline based on minimum thresholds.

New Release of NHDGeoEdit Tool

A new version of the NHD Geo Edit tool has been posted on the NHD Stewardship Website/Download NHD Software page: NHDGeoEditTool_v3.2.2_20080925.zip. Please read the NHD Geo Edit Tool readme.doc that is included with the zip file prior to installation for enhancements and bug fixes. New Releases available soon: (1) NHD Merge Utility - Utility that will allow the user to Merge File Geodatabase datasets, (2) WaterBodyAreaComID Script - Python Script that will be included with NHD Tools Toolbox to validate WBAreaComID's and track the changes, and (3) NHDUtilities Setup - Added functionality to handle File Geodatabase format (BuildFlow, NetworkBuilder, NHDMValues, XMLExtract, XML2GDB).

USGS *The National Map* 2.0 Tactical Plan Now Available

The National Map 2.0 Tactical Plan is primarily a working document to guide *The National Map* program's execution, production, and metrics monitoring for fiscal years (FY) 2008 and 2009. The Tactical Plan addresses data, products, and services, as well as supporting and enabling activities. *The National Map's* 2-year goal for FY 2008 and FY 2009 is to provide a range of geospatial products and services that further the National Spatial Data Infrastructure and underpin USGS science. You can access this plan at <http://pubs.usgs.gov/fs/2008/3074/>.

New FGDC Hydrography Standard Published

The Federal Geographic Data Committee (FGDC) endorsed the Geographic Information Framework Data Standard in May 2008. The Geographic Information Framework Data Content Standards that comprise the GIFDS were recently posted on September 16, 2008 and are available for download. The hydrography standard is Part 6, Hydrography, FGDC-STD-014.6-2008. Go to http://www.fgdc.gov/standards/standards_publications/ and click on Part 6, Hydrography.

U.S. EPA Releases Final FY2009 Exchange Network Grant Solicitation Notice

The U.S. EPA has released the final FY 2009 Exchange Network Grant Solicitation Notice. The grant guidance has many references to geospatial data. This grant has been an important factor in Minnesota's NHD stewardship program. The notice is now available for download at:

<http://www.epa.gov/exchangenetwork/OEI%20EN%202009%20Solicitation%209-16%20FINAL.pdf>

The application deadline for FY2009 Exchange Network grants is November 21, 2008. The Solicitation Notice contains important information about eligibility, application procedures, and funding priorities, which include the transition to Node 2.0 and innovative multi-partner collaboration grants. 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. You can find a forum dedicated to sharing Exchange Network project ideas at <http://www.websitetoolbox.com/tool/mb/exnet?forum=97250>.

Additional information about the grant program is available on the EPA website at <http://www.epa.gov/exchangenetwork/grants>.

Rea's Corollary to Moore's Law

Rea's First Corollary to Moore's Law: GIS practitioners are inexorably drawn into a vortex--the never ending pursuit of increasing resolution. The rate of increase in resolution achieved roughly mirrors the rate of improving computer storage capacity and processing speed, which is governed by Moore's Law. Basically, we'll process as much data as we can stand to wait for.

Rea's Second Corollary to Moore's Law: As the scale of GIS data approaches 1:1 and absent a drastic improvement in our ability to model the physical processes represented, the amount of real information gained with increasing resolution approaches zero.

Rea's Third Corollary to Moore's Law: Nothing in Rea's Second Corollary negates Rea's First Corollary.

Hydrography Stewardship Conference

A national conference will be held April 15-17, 2009 in Denver, Colorado to discuss hydrography data stewardship composed of the NHD and WBD. The goal of the conference is to better develop data stewardship by exchanging ideas amongst a broad group of participants to find out what works, what doesn't work, and how to fix what doesn't work.

August Hydrography Quiz / New September Quiz

Jim McDonald, a GIS specialist and geologist with the Ohio Geological Survey, was the first to correctly guess last month's hydrography quiz <ftp://nhdftp.usgs.gov/Quiz/Hydrography38.pdf> as the Juneau Icefield in Alaska. Jim is currently working on projects involving coastal erosion, carbon sequestration, and developing software applications using ArcObjects. His interest in the NHD stems from a project to site a coal-fired power plant that would also do carbon-sequestration. The proposal required certain amount of water to cool the plant. Jim's interest in the NHD continues due the software applications that have been developed for the NHD. He studied glaciology and geophysics at Ohio State University, and did field work in both Antarctica and Greenland and was very familiar with the Juneau Icefield through work in school. Jim notes that the Beavers in the NHD clue are de Havilland Beaver airplanes used to fly tourists over the Juneau Icefield.

The Juneau Icefield (from <http://www.juneauicefield.com/>):

“The Juneau Icefield, the fifth largest icefield in the Western hemisphere, is a prototype example of interconnected highland glaciers in the Alaska-Canada Boundary Range. Situation immediately north and east of Alaska’s capital city of Juneau, the icefield lies at 60° N. latitude, close to the eastern shore of the Gulf of Alaska. On some of its glaciers, the depth of winter snowfall exceeds annual melting. On others, the opposite pertains. This makes the icefield a total system, particularly valuable for study of glacio-climatic variations resulting from continual shifts in the Arctic Front, the interaction zone between cold dry high-pressure continental air and warm wet low-pressure maritime air over the North Pacific Ocean. Comprising a rock and ice area of 5000 square miles, the icefield is punctuated by bedrock islands (nunataks) and spectacular subsidiary mountain ranges. It has 38 out-flowing trunk glaciers, the termini of which reach low elevations at or near sea level. The most significant of these are the Mendenhall, Taku, Talsekwe, and Llewellyn Glaciers. Dense spruce and hemlock rain forests and forbidding cliffs, with deep gorges and fiords, rim the coastal edge of the icefield. Approach routes by foot are limited and difficult.”

Others with the correct answer were (in order received): Jory Hecht, Jim Sherwood, Ken Koch, Al Rea, Dan Saul, Daniel Sandhaus, Matt Rehwald, Roger Barlow, Kerry Casey, Elaine Blok, John Lynam, Dave Mott, Jim Schramek, and Erik Johnson.

This month’s hydrography quiz can be found at <ftp://nhdftp.usgs.gov/Quiz/Hydrography39.pdf>. The salmon color represents urban areas. The light blue area is Sea/Ocean while the dark blue area is Stream/River. The green represents swamps. The NHD feature Estuary is not in use. Note the orientation of the coastline. This should help you locate this quiz. Send your guess to jdsimley@usgs.gov.

Upcoming NHD Geo Edit Tool Training

October 7-9, Montgomery, AL, Contact Carl Nelson cwnelson@usgs.gov or Phillip Henderson at Phillip.Henderson@adeca.alabama.gov

October 21-23, Jackson, MS, Contact Carl Nelson cwnelson@usgs.gov

November 4-6, Concord, NH, Contact Carl Nelson cwnelson@usgs.gov

Upcoming NHD Applications Training

Oct. 7 and 8, Boise, Idaho, contact Scott Van Hoff at svanhoff@usgs.gov

Oct. 21, Laramie, Wyoming, ESRI SWUG, contact Paul Caffrey at Caffrey@uwyo.edu

Nov. 4-6, Sacramento, California, contact Carol Ostergren at costergren@usgs.gov.

Feb. 4-6, Michigan, contact Steve Aichele at saichele@usgs.gov.

Feb. 18-20, Wisconsin, contact Dick Vraga at rsvrage@usgs.gov.

Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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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.