

USGS National Hydrography Dataset Newsletter  
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100K Status: A final step in the production of intermediate-scale NHD is to correctly set the stream level based on the proper sequence of streams making up the final national database. Every effort was made to correctly code the levels in the initial 1:100K-scale production, but they may need to be updated as the full network is established. This re-leveling process is underway with just under half the nation completed. The entire process should be completed mid-way through the fiscal year. At present, the majority of the re-leveled sub-basins have not been re-entered into the FOD because of a backlog problem, however, it is hoped to clear the backlog in the next month. This process is having some effect on high resolution production because the intermediate-scale stream levels are transferred in creating the high resolution product. If the stream levels are changed after the high resolution NHD is complete, the high resolution levels may not be correct.

High Resolution News:

New England News: Three New England states are currently involved in NHD production and three other states are readying themselves for future production. Vermont 1:24K NHD is being produced by the USGS in a joint effort between the Water Resources and Geography disciplines. Also, through an Innovative Partnership with USGS, the Vermont Center for Geographic Information is building 1:5K NHD by conflating higher resolution surface waters with the new 1:24K NHD. New Hampshire is being produced by the University of New Hampshire under an Innovative Partnership with the USGS. Maine is being produced by the Maine Office of GIS, also under an Innovative Partnership with the USGS. Massachusetts, Rhode Island and Connecticut are rapidly building up NHD expertise and in the planning stages of developing partnerships with the USGS to enter production. The compactness of the New England states means that many sub-basins are shared, making good cooperation and coordination essential to efficiency. All six states are engaged in coordination and met in early December for talks and training. Contact Lynn Bjorklund, [lcbjorklund@usgs.gov](mailto:lcbjorklund@usgs.gov), for more information.

Progress in Southern California: A joint project between the USGS and the U.S. Forest Service, pre-dating the NHD Inter-Agency Agreement, is providing for the production of 33 sub-basins in southern California. Production work is complete on 24 of these sub-basins, mostly along the coastline, of which 11 are now distributable. The work is being done at the Rocky Mountain Mapping Center using both the Framework Tools Interface and NHD Create production systems.

USGS-USFS Progress: Work under the Inter-Agency Agreement for NHD production is off to a somewhat slow start due to a large number of coordination issues that must be conducted. Four projects are currently in work. Typically one of three different sources of 1:24K-scale base hydrography data are used depending on availability. There are; 1) DLG-3 data, 2) USFS Cartographic Feature Files (CFF) which may come either the

national holdings at the USFS Geospatial Service and Technology Center or directly from the Forests, and 3) Tagged Vector-Hydrography (TVH). TVH files are lower cost versions of DLG-3 files, made possible by not creating the full topology found in DLG-3's. This topology is established in the NHD production anyway, so by eliminating the duplication of this process, a cost savings can be realized. Thus far, the USGS has made 939 TVH files in anticipation of NHD production.

CFF Converter: The software that converts the CFF files into the appropriate format for NHD conflation, known as the CFF converter, is complete and undergoing testing. Additional versions of this converter will be produced to input various other forms of source data. Currently, a version which converts CFF files enhanced by the local forests is being developed. This capability is a key component of the NHD project because it allows the use of pre-existing hydrography source data, creating a stronger link with local agencies and eliminating duplicate digitizing.

Technology News: The evolution of the NHD data model has many objectives which are designed to extend the power of the NHD and make its use more efficient. One powerful capability which will be enhanced is the ability to maintain a historical record of various versions of the data. Real-world hydrography can easily and quickly be changed by nature or human intervention. Therefore a hydrography mapping system must be able to anticipate and handle these changes as cartographers update the data. Furthermore, the temporal characteristics of hydrography are an important component of hydrographic science. Given enough time, the NHD can become a spatial-temporal dataset to the benefit of science. The system managing the change transactions will likely utilize the Environmental Systems Research Institute (ESRI) Inc. capability known as ArcSDE (Spatial Data Engine) which was designed to manage the interface between the GIS and the database management system. Users of NHD will be able to request the best available NHD, those changes made to the NHD since a user's last query, or a complete record of changes to the data, recorded at regular intervals. The NHD changes can also be a result of quality improvement initiatives and the optimized management of transactions will allow more efficient and more effective quality assurance programs, creating a better NHD.

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