USGS National Hydrography Dataset Newsletter
Vol. 1, No. 9, July, 2002
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NHD Geodatabase and the 2002 ESRI Users Conference

Several significant software changes were rolled out by the Environmental Systems Research Institute (ESRI) at the annual 2002 Users Conference in San Diego. ArcGIS 8.3, due out later this fall, completes the migration of ArcInfo workstation functionality to ArcGIS Desktop, plus adds some new capabilities. Items of particular interest for geodatabase development are the availability of topology, the completion of the dynamic segmentation tools (*), and new disconnected edit capabilities. Prior to version 8.3, only the geometric network supported topology. In version 8.3, users will be able to support new forms of topology and choose when to apply it. With dynamic segmentation, multiple route systems will be supported as well as full event support. The disconnected edit capabilities will fit right in with the versioned database design of the new system. This new capability will allow in-house users, contractors, and others, to "check-out" data for updating and then "check-in" the changes.

ESRI also provided previews of ArcGIS 9. Of particular interest for the NHD crowd are the database replication capabilities, the addition of a much more robust web services environment, more topology functionality, much tighter integration of ArcIMS with geodatabase, the addition of non-topological networks, support for GML/XML input and output, and built in feature-based metadata management. ArcGIS 9 is due out by the 2003 User Conference.

* For more information about dynamic segmentation, see the July-September 2002 issue of ArcUser.

July Status Graphic

This map provides a comprehensive and up-to-date status of the high resolution NHD program in the conterminous U.S. It is compiled from eight databases used by managers throughout the program. Here is a review of the status. (1) Authorized means that the sub-basin is registered with the USGS for production. This is the first step in starting production. (2) Planned means the sub-basin is ready to be assigned for production. (3) Preparing for Production means that that the sub-basin has been assigned to the producer. In a number of cases, such as North Carolina, Missouri, and Georgia, a state partner is producing the data. In such a case, the sub-basin may be in-work, but the USGS has not received this status. In other cases, the USGS is simply gathering materials for production. (4) Work-in-Progress means that work is underway, typically a two to three month process. (5) Passed Quality Assurance means that the main production process is complete, it has passed the quality review process, and is now ready to be loaded into the Feature Operational Database (FOD). (6) Has Been Made Distributable means that the sub-basin has been loaded into the FOD, converted to the distribution format, and is now ready for downloading by the user. (7) Made Distributable and at Least Some Inter-CU Connections Made means that in addition to the above, the sub-basin has received additional processing to network it with adjacent sub-basins. However, all such links may not have been completed. This is due to the differing availability of adjacent sub-basins. (8) Temporarily Made Non-Distributable to Allow Editing means that the sub-basin has reached the stage where it has been loaded into the FOD, but the sub-basin is being edited and should not be made available to the user until this editing is complete. In many cases, a sub-basin has been made distributable, and then made not-distributable to allow edits to take place. This is a temporary situation and an up-to-date status can be obtained by checking http://nhd.usgs.gov.

Department of Interior High Priority Lands Program

The Department of Interior (DOI) High Priority Lands Program has been a significant source of direction and funding for the NHD program. A portion of the USGS budget is earmarked for the production of mapping data in support of programs in other non-USGS DOI bureaus. Representatives of the DOI bureaus meet with the USGS to provide requirements for mapping. The requirements are then prioritized based on need and budget, and finally are programmed for production. In fiscal year 2002, 14 sub-basins in New Mexico were authorized, 6 in North Dakota, and 47 sub-basins in Texas, associated with the U.S. – Mexico border, have been planned. The current plan for fiscal year 2003 is to produce sub-basins in the Chesapeake Bay Watershed, Tennessee, Idaho, New Mexico, Oregon, Texas, and Utah.

Observations on High Resolution Production

The July status graphic provides some interesting observations. One is that the Kentucky coverage is making good progress. A second is that southern California is likewise obtaining the desired coverage. These two projects are the first major projects attempted by the USGS and proved to be a significant challenge to the people, software, and processes that were developed for the high-resolution program. This work is well behind schedule, so the progress is a relief to producer and customer alike. You will note that two partner-producers, Georgia and Missouri, are making a dent in their coverage. Note that in these two cases, information on sub-basins in-work is incomplete. Although with a later start, New York is achieving good progress, as is the adjacent state of Vermont. The Delaware Bay watershed is achieving good progress. The final sub-basin in this project, with over 28,000 reaches, has been distributed, but only after breaking every piece of software it ran through. Projects in eastern Kansas and southern Minnesota are making good progress after a number of delays. Production as a part of the Utah partnership is well underway and you will note that the massive Texas project has now started. New Mexico production is benefiting from strong contributions by the DOI program described above. The USGS-USFS inter-agency agreement program is providing significant coverage for Idaho, western Montana, and western Wyoming. The Bridger-Teton National Forest (N.F.) project in Wyoming is nearing completion. Further to the east, the George Washington-Jefferson N.F. project on the Virginia-West Virginia border is complete. The inter-agency agreement is also initiating significant coverage in north-central California, Arkansas, Mississippi, and Minnesota. Please review the map to observe additional items of interest.

Thanks to Paul Wiese for his review of the ESRI conference.
Jeff Simley, USGS, assumes full responsibility for the content of this newsletter.