

American Water Resources Association
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GIS & Water Resources VI
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Wednesday, March 31

1:30 PM – 3:00 PM

SESSION 33: National Hydrography Dataset III

Fundamentals of Stewardship for the National Hydrography Dataset (NHD) - Elizabeth McCartney, U.S. Geological Survey, Rolla, MO

The U.S. Geological Survey mapping program is making the transition from a historically based production model to the stewardship model. Strong partnerships with State and Federal partners are vital to the success of The National Map, and more specifically for the National Hydrography Dataset (NHD). The NHD is a seamless surface water dataset used for analysis, mapping, reporting and tracking of water data and issues. As with any geospatial dataset designed to capture the real world, changes are constantly occurring. Updating the NHD takes advantage of new imagery, LiDAR and other sources of information. Because of their familiarity of the landscape, local users of the NHD are in the best position to provide updates, maintenance and feedback about the NHD. The basic premise of the NHD provides for an easy-to-use, yet very powerful dataset designed around change management practices to ensure updates allow for continuous integrity of the data. The change management process consists of five elements. The NHD stewardship program uses the change management foundation to build a network of data users to generate updates to the data. The change management system, stewardship organization, tools and processes to make updates, and examples of stewardship in action are presented.

Florida's National Hydrographic Dataset (NHD) - Joseph North, FDEP, Tallahassee, FL

The Florida Department of Environmental Protection's Bureau of Watershed Restoration participates in a Memorandum of Understanding with the U.S. Geological Survey that provides that the Bureau serve as the officially recognized data steward for 1:24K NHD products for the State of Florida. This presentation includes an introduction to the NHD data model, an update on the progress toward revising the NHD for Florida and the Bureau's related activities in support of this effort.

NHDPlus Version 2.0 - Cindy McKay, Horizon Systems Corporation, Herndon, VA (co-author: Tommy Dewald)

NHDPlus Version 1.0, the first national, spatial database to link the mapped stream network to the landscape, was released in September 2006. Since that time, hundreds of water resources projects have built powerful applications upon the framework provided by NHDPlus. Fate and transport models, water quality analyses, habitat studies, homeland security tools and more have reaped the benefits of NHDPlus capabilities. The US EPA and the USGS are poised to deliver the next generation of NHDPlus. Tools are being built, data is being improved and resources are being assembled in order to produce NHDPlus Version 2.0. This presentation will describe NHDPlus Version 2.0 in terms of data structure, data content and capabilities.

Hydrography Conflation: Challenges in Updating Hydrography Data - Bernard Catalinotto, Data Enhancement Services, Frederick, MD

States and local agencies rely on accurate hydrography data for making important decisions related to water surfaces in their region. Whether concerned about water availability, pollution control, ecosystem protection, resource management or a combination, each group pays attention to its water, especially where it is located and where it goes. Hydrography data, however, is in a perpetual state of evolution. When new tributaries form, location of the water changes; when agriculture and industry release chemicals into water, they impact clean water availability and ecosystem biology; and when drought occurs, water resources dry up. How can states effectively keep up with the changes in their hydrography? With more than 6 million lakes and 6.5 million linear miles of streams in the U.S., new technical approaches are required to track water resources and their changing features and allow fast and efficient updates to shared datasets, such as the U.S. Geological Survey's National

Hydrography Dataset (NHD). Data conflation is one such method used to update hydrographic data. Conflation is a "matching" of old data layers with the new - and is a necessary step to ensuring that information in the database is accurate and up to date. Conflation is complicated by the fact that mapping standards have changed and more detail is available in maps than ever before. For decades, mapping standards held at a scale accuracy of 1:24,000. Today, many states are mapping at a scale of 1:2,400 or 1:4,800. While this higher level of detail helps states understand their hydrographic assets with a better perspective, the geometry of these features is often out of alignment when compared to previous maps. Improvements in hydrology data have led to new challenges in creating and uploading datasets into common databases such as the NHD. This presentation will introduce new ideas and technology for meeting those challenges. The presentation will discuss hydrography conflation, why it's important to properly conflate hydrography features, how conflation works with feature extraction technologies, and how states with budget and time constraints can effectively address the conflation challenge.