Water Quality Assessment Tool by Jeff Schloss and Ray Postolovski

The State of Missouri joined the NHD stewardship program in 2010 and has been active performing data maintenance. Improving the NHD within Missouri is only one facet of their program. The true value comes from using the NHD. In an effort to streamline and manage all their Water Quality Assessment business data, the State of Missouri developed an application to integrate their business system with spatial data. The Missouri Department of Natural Resources' GIS Editor is a Web application that is integrated with the enterprise Water Quality Assessment (WQA) system. The integrated system provides water quality assessment staff with a platform to manage all the WQA business data and at the same time create and maintain the GIS feature classes associated with the data.   The WQA system maintains information on toxic events, stream surveys, water sampling sites, nonpoint source areas, and assessments completed on waters of the State.

All editing for the WQA GIS data is done entirely in the GIS Editor application. The feature classes maintained using the GIS editor are point, line and polygon features related to almost all the data collected and stored in the business database, and six of the nine feature classes are referenced to the High Resolution NHD. Two of the point feature classes store the locations where samples are taken and where stream surveys are conducted.   When a location is added, the GIS Editor performs a surface trace using a flow direction grid to determine the NHD reach code and measure which are stored with the point feature. A third point feature class is used strictly as means of establishing the most downstream point for lake assessment polygons and is not referenced to the NHD.

Line feature classes are used to represent toxic events that impact streams, stream survey use attainability ratings, and stream assessments. These are also referenced to the NHD and are attributed with a reach code, a "from" measure, and a "to" measure derived from a flowline trace between an upstream and downstream point indicated by the user.   Streams that are too small to be included in the High Resolution NHD are handled by performing a surface trace to the nearest flowline.   When the user indicates the upstream and downstream points of the segment of interest, the GIS Editor saves the surface trace as a part of the feature class. These features are attributed with a reach code and measure that indicate where the trace intersected a flowline from the High Resolution NHD.

Polygons feature classes are used to represent nonpoint sources of pollution, toxic events that impact lakes, and lake assessments. Nonpoint sources are digitized by the user and are not referenced to the NHD. Toxic events that impact lakes are digitized and are not referenced to the NHD. Lake assessments can be copied from a polygon feature class representing Missouri's classified lakes which were created using the High Resolution NHD and are already attributed with a reach code. If a lake does not exist in the High Resolution NHD, it is digitized and will not have a reach code. For more information about this application, please contact Jeff Schloss at Jeff.Schloss@oa.mo.gov or (573) 751-5110.

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