NHD Utility

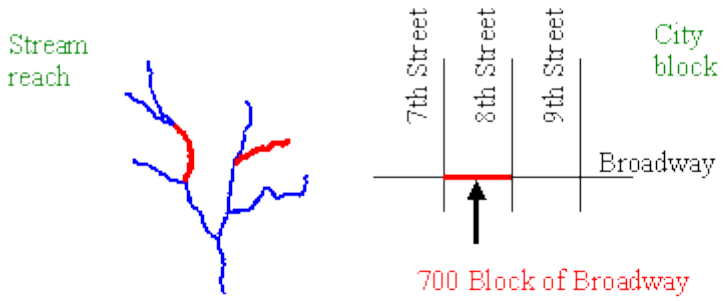
There are an endless number of ways in which a digital stream network can be used as a tool for research, management, and planning. Most uses will fall within 5 general categories:

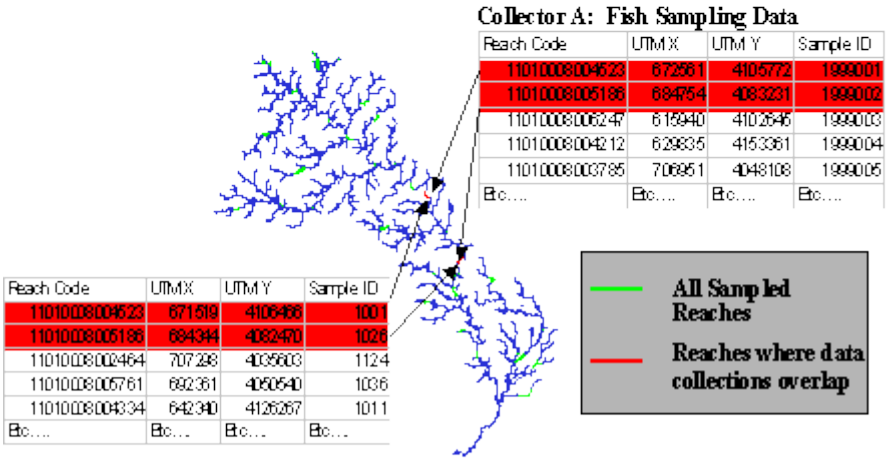
- Georeferencing Data
- Experimental Design
- Inventory and Assessment
- Modeling
- Visual Display of Information

Georeferencing Data

When it comes to natural resource management it has been estimated that as much as 90% of what we do is spatially oriented. Consequently, accurately and precisely documenting where we conduct our research or management is equally important as the actual data we collect or the work we do. Each reach in the NHD will have a unique identifier (the "Reach Code") just like each house has a unique address or each person has a unique social security number. This allows for rapid cross-referencing of data.

Reaches are analogous to city blocks

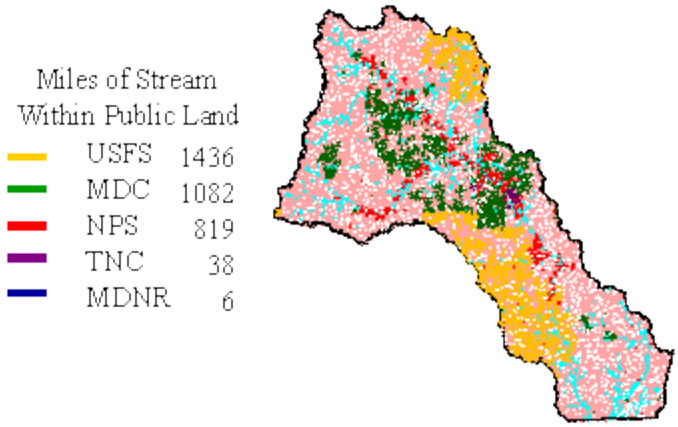




Inventory and Assessment:

The first step to effective resource management is having an accurate inventory of the resources you are trying to manage. A digital stream network can be very helpful with generating inventory statistics. It can be used alone if the appropriate attributes are already attached to the network or it can be used with other digital data layers (e.g., public lands).

NHD files can be combined with other geospatial data to generate inventory statistics



Modeling:

Many stream research and management questions require spatial analysis and modeling of stream dynamics. Using GIS we are able to construct digital stream networks that actually simulate natural stream networks. We do this by ensuring that all of the individual stream reaches in a network are physically connected, spatially related, and have uniform downstream direction. Consequently, we can use NHD files to develop and implement hydrologic, water quality, and sediment models.

NHD files can be used to model hydrology, water quality, and sediment movement