

## Available software tools from Earth Systems Institute (ESI)

### Two sets of analysis tools are available:

**NetStream** is a combination of two programs, Bldgrds and Netrace, used to trace channel networks from gridded elevation data. These programs provide base GIS data layers that can be used for a variety of channel-network analyses. They provide, for example, some of the data files used by NetMap. Output grid files include flow direction, contributing area, measures of topographic convergence, and an estimate of floodplain extent. A vector shapefile is also created, giving the traced channel network, divided into reaches (based on user-specified criteria), with several channel attributes. Available attributes calculated from the DEM are drainage area, elevation, flow direction, and gradient; channel width and mean annual flow are calculated using regression equations with user-supplied coefficients. Netstream does not provide the functionality or ease-of-use of NetMap; the user must design and implement subsequent analyses that use these data and must calibrate several empirical coefficients. However, Netstream can be used with any gridded elevation data to provide channel information for analyses in areas where NetMap data sets have not yet been developed.

**NetMap** is a community based, state of the art, desk-top GIS analysis tool set containing approximately 60 functions and 70 parameters that address watershed attributes and processes such as fluvial geomorphology, fish habitat, erosion, watershed disturbance, road networks, wildfire, hydrology, stream temperature, and large woody debris, among other issues. “Community based” means that as new tools are developed (and funded) by users, they are made immediately available to all users in the form of updated tools on the website.

NetMap is designed to integrate with ESRI ArcMap 9.2 and it utilizes NetStream software to create base watershed layers (stream network, channel gradient etc.). NetMap offers considerable functionality for a range of disciplines including forestry, hydrology, fish habitat management, restoration, monitoring, research, and education. NetMap works with watershed databases where Netrace has been applied and where other types of integrative analyses have been applied by ESI. ESI develops the watershed databases that integrate with NetMap Tools. See available NetMap watershed coverage.

Overall, NetMap, NetStream, and the associated watershed databases and maps comprise a holistic watershed science system that includes forums and advisory groups accessed through the web.

For additional information on what tools are available, see the file: “NetStream versus NetMap”

NetMap database citation: When using NetMap tools and NetMap databases, please cite as: NetMap 200X. Earth Systems Institute. [www.netmaptools.net](http://www.netmaptools.net).

or:

Benda, L., D. J. Miller, K. Andras, P. Bigelow, G. Reeves, and D. Michael. 2007. NetMap: A new tool in support of watershed science and resource management. *Forest Science* 52:206-219.

***Please also note: When using models within NetMap, either developed and published by ESI or developed and published by others, use the appropriate original source citation (found in the Technical Help section of NetMap).***