River Network Toolkit

Gonçalo Duarte, Tiago Oliveira, Pedro Segurado, Paulo Branco, Gertrud Haidvogl, Didier Pont & Maria Teresa Ferreira

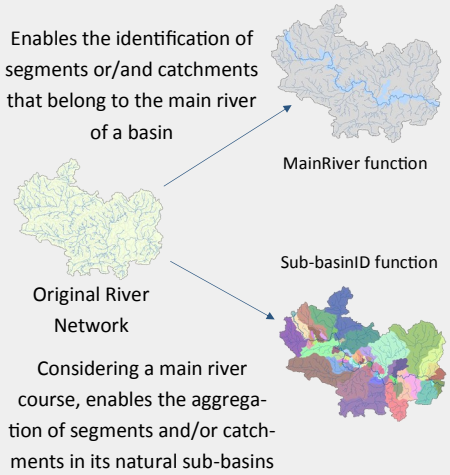
What does it do?

RivTool is an innovative software that integrates river network information with environmental data. Designed to be a straightforward and user-friendly software it facilitates: (1) obtaining information that characterises the network based only on its topographic structure; and (2) by linking environmental data to freshwater networks acquire new data through mathematical calculations that account for the hierarchical nature of these systems. The software is table driven and was developed to work with two distinct basic units: segment and sub-basin.

What can we obtain?

Depending on provided files there is the possibility of obtaining information to characterise a river network based solely on its topological features or perform a network analysis using network and environmental data (e.g., for a given segment a user can calculate maximum channel slope towards the mouth or compute the average temperature in the upstream drainage area).

Topological features of a network

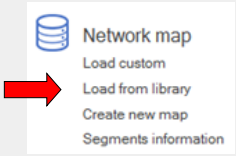


Computations along a network

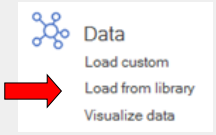
- Sum/average considering all upstream/downstream segments (e.g., upstream drainage area)
- Relative occupancy in Upstream Drainage Area
- Distance between segments
- Conditional Sub-basin
- Relative Distance to Mouth
- Stream Power (rate of potential energy expenditure over a reach)

How to use in 5 steps?

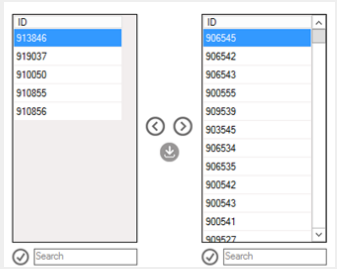
1. Load a map file



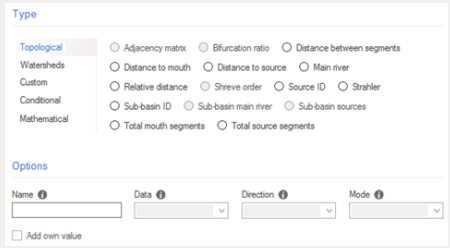
2. Load a variables file



3. Define segments to be used in calculations



4. Specify the calculations to be performed



5. Obtain, visualise and export results

Why is it advantageous to use RivTool?

Takes full advantage of river network databases

Straightforward link between environmental and river network data

Extensive set of functions, all in one program

No topological restrictions as it is database driven

Fast performance even with large datasets

Universal applicability

Works with segment or sub-basin as a basic analysis unit

A set of ready-to-use libraries

User-friendly and with straightforward implementation

Download the trial version

http://bit.ly/RivTool_beta

The current beta version, though available, is still under testing procedures.

Let us know your comments and/or suggestions. Help us improve:

Info@rivtoolkit.com