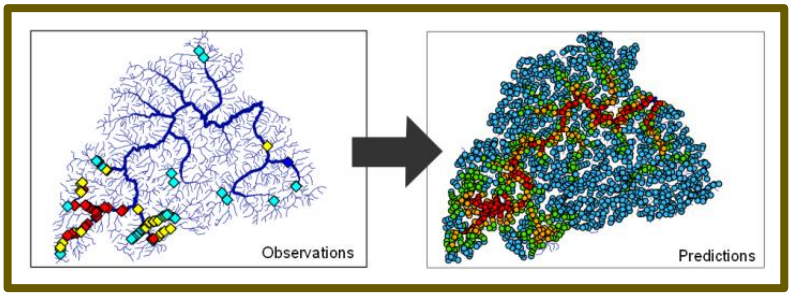
Workshop: Spatial Statistical Modeling on Stream Networks



Co-sponsored by
WDAFS as part of the
2013 Annual Meeting
Boise, Idaho
http://www.idahoafs.org

FREE SOFTWARE PACKAGES

STARS ArcGIS toolset
SSN package for R statistical software
http://www.fs.fed.us/rm/boise/AWAE/projects/SpatialStreamNetworks.shtml

WORKSHOP OVERVIEW

- Provide an overview of spatial statistical modeling on stream networks, including a discussion of when they are, or are not, useful
- Share two sets of free user-friendly tools:
  - STARS ArcGIS toolset
  - SSN package for R Statistical Software
- Demonstrate the GIS tools and the steps necessary to calculate the spatial information needed to fit a spatial statistical model in R
- Demonstrate the statistical tools and their functionality, using an existing stream temperature dataset:
  - spatial regression and prediction for continuous, presence/absence, and count data;
  - block kriging and prediction;
  - simulation;
  - uncertainty estimation; and
  - visualization techniques

REAL-WORLD EXAMPLES

We show how spatial statistical models are being used to inform management decisions

Sample datasets & complete documentation for the tools will be provided

BENEFITS TO YOU

Get additional information from your dataset to help with problem solving

COST	$ 100
DATE	Monday, April 15
TIME	8:30 - 5:00
LOCATION	Idaho Water Center ½ mi from Grove Hotel 322 E Front Street Boise, Idaho

THE LATEST SCIENCE

Exciting new research questions have recently emerged in aquatic ecology; questions that are related to biological, ecological, and physical processes at multiple scales. Sparsely sampled locations make it difficult to recognize multi-scale patterns, and it is prohibitively costly to collect a continuous sample throughout space. Spatial statistical methods use spatial data efficiently, and can be used to investigate spatial patterns in streams, relate patterns to processes, and make predictions throughout stream networks.

Spatial statistical models are typically based on Euclidean distance, which may not be ecologically relevant for many aquatic processes because of flow direction, flow volume, and the network structure of streams. Functional distances that use flow and hydrologic distance better represent the transfer of organisms, material, and energy through networks. Yet, calculating these functional distances for a stream network remains challenging, and substituting hydrologic distance for Euclidean distance usually violates spatial statistical modeling assumptions. **The goal of this workshop is to share new ideas and software to better analyze data from stream networks.**

TO REGISTER:

http://www.idahoafs.org/western2013.php

Registration limited to 25 participants!

SCIENCE CONTACTS

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