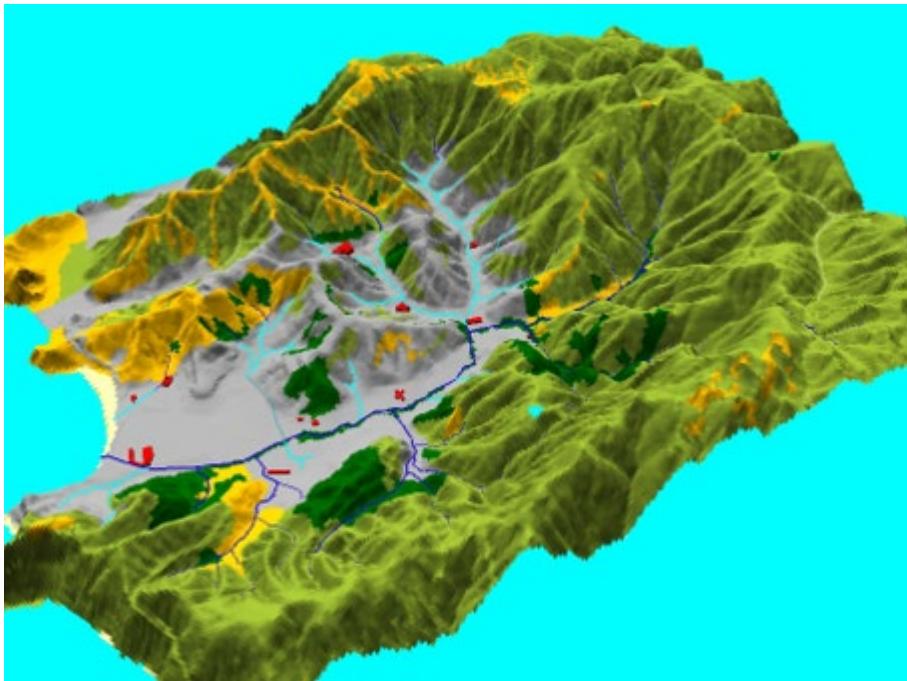


Geog 9024: Watershed GIS



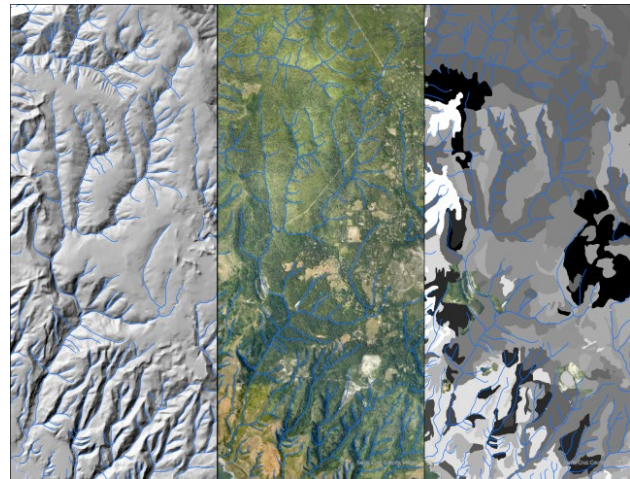
Instructor:
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In this class, we'll explore GIS methods that are especially useful for studying and managing watersheds. We'll build a watershed GIS using publicly available data at The National Map, the National Hydrography Dataset, and ArcGIS, including elevation, hydrography, soils, and land cover, then use these data to model surface hydrologic flows, channel development, erosion potential, and water quality.

1. Introduction to Watersheds & Building a Watershed GIS

Exer.1. Download Data and Create Map

In this lab, your task is to build a GIS for your chosen watershed. Make sure to clear your watershed with the instructor. Should be drained by a creek, not a river, and preferably be one you can visit to see watershed features and the stream channel. Two maps, one showing the whole watershed, the other zoomed in to a study site showing labelled elevation contours. Provide titles, a scale bar and/or a location grid, and any relevant legend items.



2. Watershed GIS methods & modeling

Exer 2. Raster methods for modeling erosion and hillslope morphology

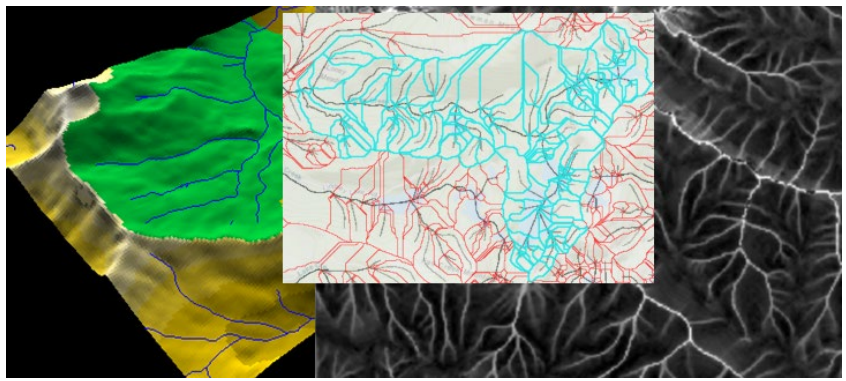
We'll work with watershed data to build a soil erosion model from slope and soil k factor, then a curvature map.



3. Hydrologic Modeling

Exer 3. Hydrologic Modeling

In this exercise, you'll use various hydrologic modeling tools to create maps of detected stream drainages, watershed extents and other hydrologic systems.



4. Water Quality

Exer 4. Water quality and interpolation

Water quality map and graph, plus two interpolation results -- salinity and temperature.

