GEOG 454: GIS for Terrain Analysis

Fall 2015, Tuesday and Thursday 2:10 pm - 3:25 pm,
206 Burchfiel Geography Building
Instructor: Dr. Yingkui Li

GEOG 454 focuses on the theory and methods of the generation, analysis, and applications of digital elevation/terrain data. Specific topics include GIS-based terrain data models, terrain surface parameter extraction, profile analysis, hillshade and visibility analysis, watershed delineation, and terrain visualization and animation. The course provides lectures and computer based lab exercises in generating and processing of digital elevation/terrain data using ArcGIS (ArcCatalog, ArcMap, ArcGIS 3D Analyst, Modelbuilder, and ArcScene).

The knowledge and skills learned from this course can be used to solve a variety of issues, including (but not limited to):
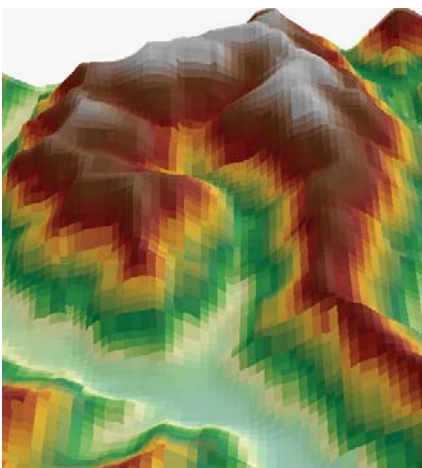- Earth surface processes, such as landslides, hillslope erosion, and sediment deposition
- Watershed management
- Landscape architecture design
- Civil and environmental engineering
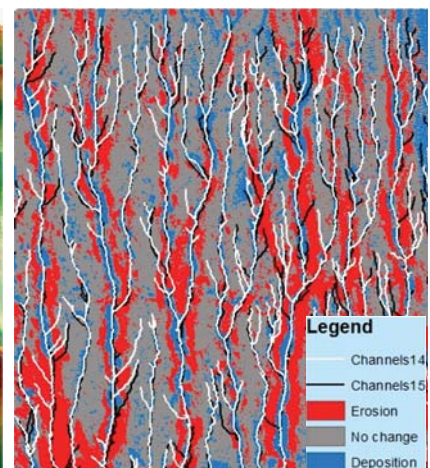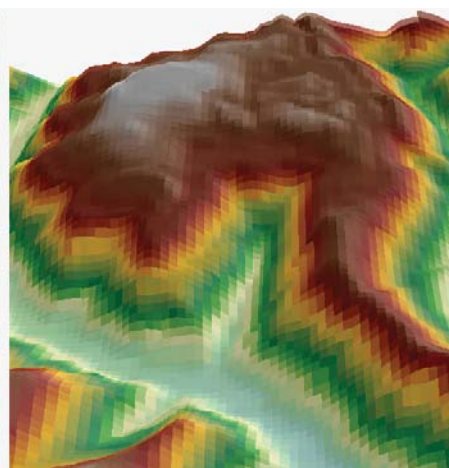- Land use and urban planning
- …
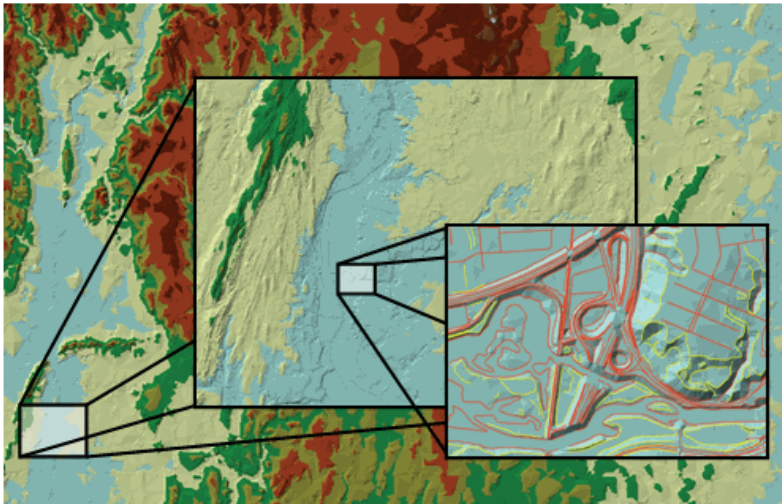
Multi-resolution Terrain data representation
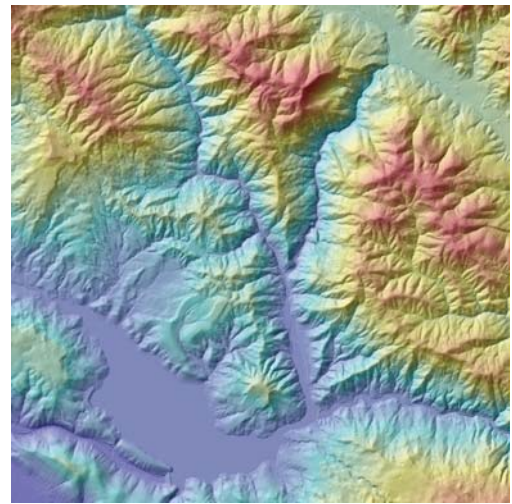
Terrain visualization

The impacts of mountaintop removal

Hillslope processes

Prerequisite: GEOG 132 and 411 provide related background for conducting terrain analysis using GIS, but other similar courses can be substituted. Please contact the instructor, Dr. Yingkui Li (yli32@utk.edu) if you are interested in further information. Thank you!