

Advanced GIS Project

Objective: The best way to expand your skills in using GIS is to do a real project. The project will culminate in a presentation to the class of the results from your project and a 5-page paper which summarizes your results and conclusions. The grade from the project will be based equally upon the class presentation and the paper.

Groups of 1-4 class members may collaborate on a single project (presentation and paper)

Assignment:

- 1) Presentation: Each individual or group will provide a brief (15-20 minute) presentation of the results of its project to the entire class.
- 2) Project report: Each individual or group will prepare a project report. The report should take the form of a short scientific paper (5 pages plus tables, figures and literature cited) which succinctly addresses your objectives, methods, results and conclusions. Appendices should include metadata on major GIS data layers you developed.

Sample Project Topics

- Identifying areas suitable for development within an existing urban or suburban setting
- Locating a sight-seeing tower to maximize scenic vistas
- Hydrologic delineation of basins and streams within a watershed using digital elevation data
- Determining the effects of global nitrogen deposition by country
- Modeling the spread of wildfires through a landscape
- Finding landscape characteristics that predict the location of bird colonies
- Identifying minimum-cost paths for animal migration and dispersal
- Designing a conservation reserve (or set of reserves) for a single species, or multiple species
- Analysis of changes in an urban or natural landscape
- Describing the effects of beavers on a landscape
- An analysis of differences between human-impacted and natural landscapes
- Design of an urban area that balances human needs with the development of urban forestry
- Modeling energy flows through a complex landscape
- Remote sensing of forest composition
- A comparison of methods for quantifying patch shape and/or landscape heterogeneity