GIS-based Service Learning at Wesleyan University: Contributing to the Quality Of Open Space in South Central Connecticut

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Introduction

The Department of Earth & Environmental Sciences offers an introductory GIS course annually. The high-demand course is open to ~19 upper-level students across campus. The course integrates a traditional lecture/laboratory framework with a community-based service learning component. The principle aim of the semester-long group project is for students to gain applied GIS skills while directly benefiting the local community.

Community Partners

With increased suburbanization of New England, networks of open space and greenways have become essential for maintaining rural character and ecosystem integrity across the region. The State of Connecticut recognizes the importance of open space and has mandated a goal of protecting a minimum of 21% of the state as open space by 2023. With money and effort focused on open space land acquisition, public and private organizations have not been able to direct resources toward management strategies for newly purchased properties.

Both the City of Middletown and Middlesex Land Trust (MLT) approached the University requesting partnerships with students to assess open space properties for possible uses, recommend strategies for preventing unwanted uses, map existing conditions, and/or conduct spatial analyses. The community partners presented background information about their organizations’ mission and land-holdings to the class, then gave them free reign to create a GIS.

Project Management

Throughout the semester, I try to foster a productive and collaborative environment within and among the groups. Typically, there are ~5 groups per semester. A general outline of production:

- Week 1: Project concept introduced
- Week 2: Community partners visit class
- Week 3: Students form groups; open space case study readings
- Week 4: Students explore GIS data available for the region; groups choose liaisons for interacting among groups and with community partners
- Week 5: Project description distributed, with specific requirements
- Week 6: Groups choose sites
- Weeks 6-12: Groups work on projects during lab periods and outside of class; regular progress/reflection reports, course discussions, and critiques in class
- Week 13: Class session to organize data; project materials due

Assessment

In order to demonstrate evidence of learning, groups submit:
- DVF of project products to submit to the community partner, including an explanatory “read me” file
- A task list detailing GIS skills and analyses used in the project
- PDF files of all map layouts
- MXD files of all maps
- Geodatabases of all data sources
- Annotated bibliography of spatial data sources
- PowerPoint presentation
- A professional report aimed at the community partners
- Photographs of students at the sites

Additionally, each student is responsible for contributing a substantial GIS component to the project. Students submit a report, map, and geodatabase demonstrating their individual contribution to the project.

Connection to Community

During class discussions, I encourage students to think about the place of their work in the community. Continued involvement with the same community partners allows students to recognize the accumulation of data over time, culminating (hopefully) in an organizational GIS rather than scattered site-specific projects. Course assistants each year do a great job of providing context for current students regarding the value of their projects to the community partners. The public presentations (~15 minutes per group) actively empower students to recognize the value and potential of their work. Audience members comprise Wesleyan faculty and staff members, community partners, and members of other community conservation groups. Individuals of these organizations rarely meet, which results in fruitful discussion of the groups’ property management recommendations.

Despite the engaging discussions during the presentation, actual outcomes lag a couple of years behind student involvement on the project. But, outcomes do occur. For example, in summer 2012 a trail was built on land trust land based on the recommendations of a spring 2010 GIS project. Another exciting outcome, David Brown, Director of MLT, successfully won a grant to acquire a computer and ArcGIS. He recently took a GIS workshop in order to have the skills to use (and advance) the students’ data.

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