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February 27, 2013  
Proposal to Present a Poster, GSU Undergraduate Research Conference

"Developing a GIS Methodology for Mapping Elements of Urban Greenspace"

Key Words  
Environmental Justice | Biogeography | Urban Greenspace | Environmental Conservancy | GIS | Urban Geography | Invasives

Introduction  
During the Summer 2012 REU program at Georgia State University, track 2 was developed to explore new methods in GIS along side community groups acting in conservancy for the Hampton-Beecher Nature Preserve in Southwest Atlanta. The objectives became; mapping the extent of non-native invasive plant species, mapping infrastructure and other features of the landscape, demonstrating the functionality of a new method for mapping elements of urban greenspace. and finally to develop a comprehensive resource for local organizations and stakeholders to build better awareness, participation, and support for an urban greenspace.

Method  
A community defined research agenda developed in response to respected needs of a community based organization WAWA and local non profit Trees Atlanta. Using smartphones, tablets, and ArcGIS 10, a team of 5 undergraduate students physically mapped several features through 160 acres of this urban nature preserve in Southwest Atlanta.

Results  
Of the 7 species intended for eradication, Chinese Privet, and English Ivy were considerably dominant. Furthermore, English Ivy is almost exclusive to disturbed edges. Additionally, the team observed Hampton-Beecher as a variable mosaic of vegetation effected by topography, drainage patterns, and proximity to water, and or disturbed edges.

Discussion/Conclusion  
Mapping with the Esri ArcGIS app on smartphones and iPads streamlines data collection, optimizes accuracy, and communication between involved parties for more effective field work. At times devices faced technical difficulties; usually due to server issue or canopy coverage. Human error also presented issues in species identification and logistic strategies. The final collection and geographic visualization of the data has helped Trees Atlanta to efficiently prioritize areas for eradication and restoration of Beecher-Hampton. Furthermore, the data collected, and visualized by this research track provides WAWA with a birds-eye perspective on the entirety of their urban forest, and will increase perceptions and awareness for support and advocacy. Local volunteers can potentially
become part of a process of managing their urban nature preserve, and help to make decisions in future conservancy of the forest. Finally, this research tests and supports a methodology that can be replicated for an endless array of urban cases.