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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.