

Jason Edwards, Environmental Science

University: University of Missouri

Year in School: Junior

Hometown: St. Louis, Missouri

Faculty Mentor: Dr. Charles Nilon, Fisheries & Wildlife

Funding Source: NSF Undergraduate Mentoring in Environmental Biology

Biotope mapping to compare and contrast Columbia, Missouri neighborhoods

Jason T. Edwards, T. Kevin O'Donnell, and Charles H. Nilon

How people manage their property can ultimately have an affect on biodiversity, and ecosystem services. Our project seeks to understand the relationship of socioeconomic status to property management and how it affects biodiversity and ecosystem services. Our project compares neighborhoods with different socioeconomic characteristics by studying vegetation pattern and structure at three different scales: neighborhood, block, and lot. In this poster we compare vegetation pattern at a neighborhood scale. Our objectives are to classify vegetation in eight Columbia, Missouri neighborhoods and to determine if there are associated with socioeconomic differences. We defined neighborhoods as eight census block groups, and used data from the 2000 census to group the eight block groups into four socioeconomic categories. We used biotope mapping, a method of vegetation classification, to describe the different vegetation types in each block group. We used a similarity analysis to group the block groups based on biotope (vegetation) type. We used percent cover of the dominant biotope types to test for differences among the four socioeconomic groups. We identified 46 biotope types among the eight neighborhoods. Residential biotope types with lawn, trees and shrubs were dominant. These were divided into two subtypes, yard trees and fence rows, based on location of trees. Fence row were most common in the inner city area where the income is much lower than the areas with yard trees. The classification of the eight block groups based on the percentage of each biotope type in the block group did not match the classification based on socioeconomic data. The biotope classification did join the two block groups dominated by renters, Black residents, and low median income, a relationship supported by census data.