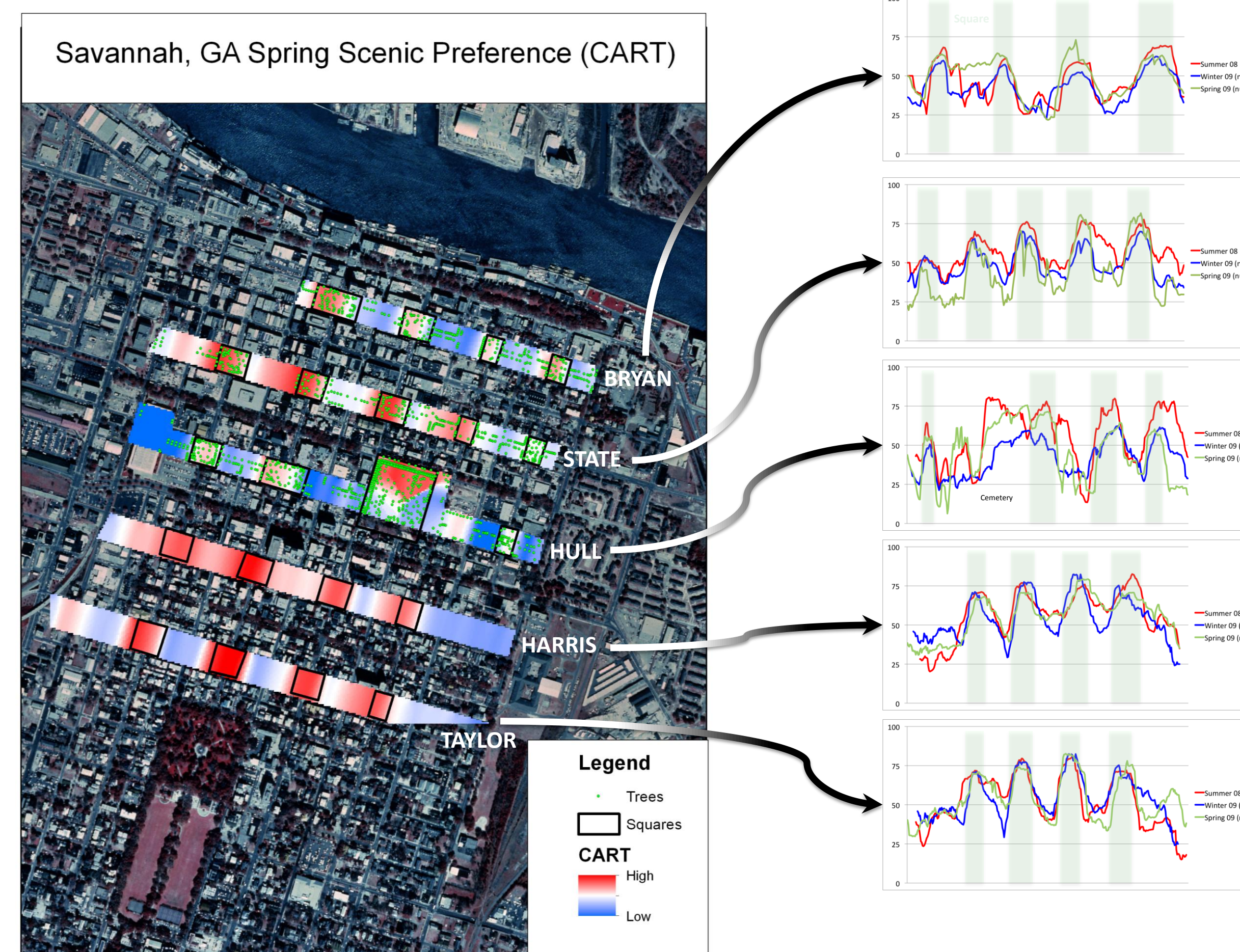
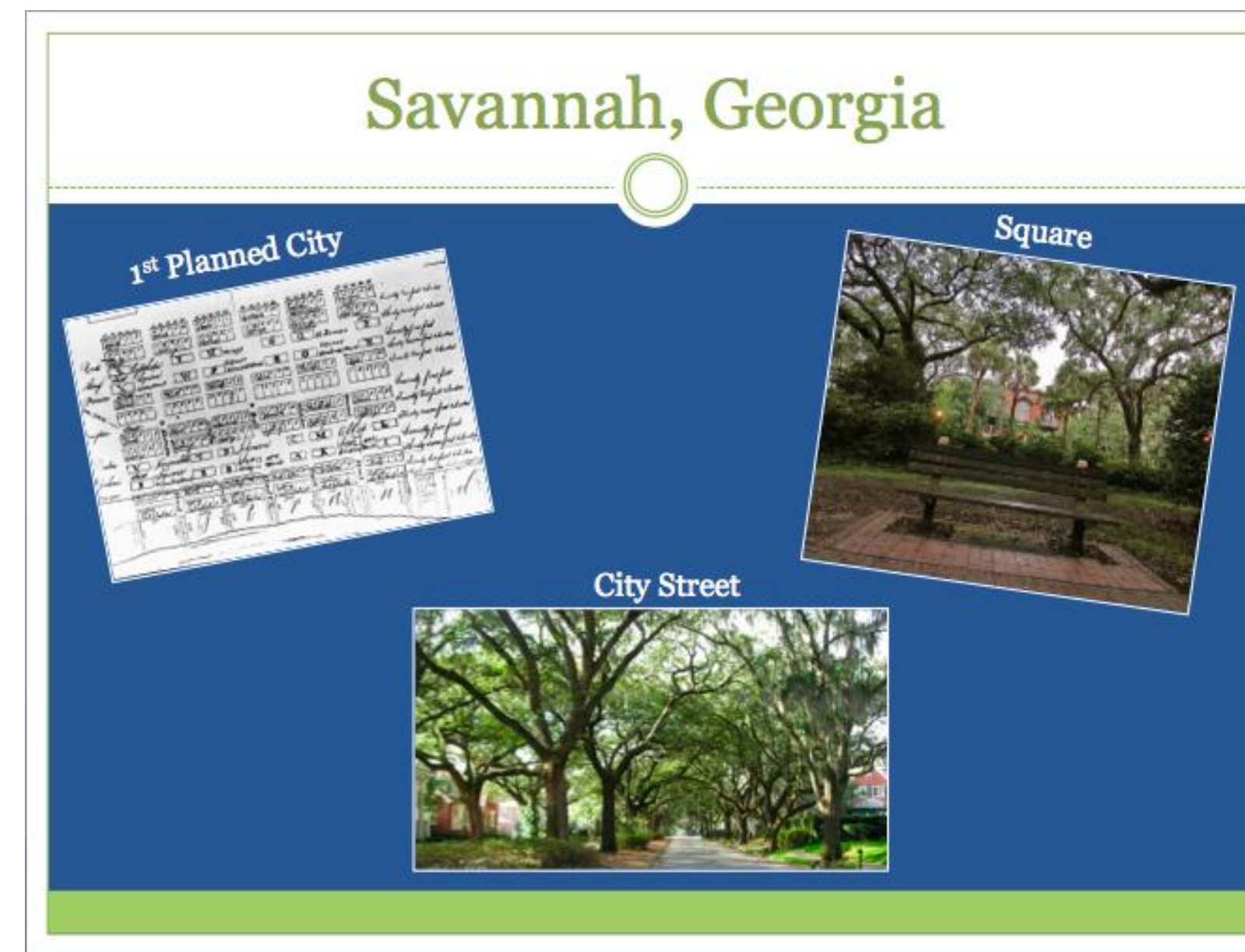


# Developing scenic beauty maps of an urban forest using moment-to-moment derived data and GIS

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Previous studies largely focused on the examination of relationships between measurable landscape or forest/tree characteristics and perceived scenic beauty, with very little research attempting to visually map perceived scenic beauty for a city (although there is exception; e.g., Daniel's et al. study on scenic beauty mapping of forest landscape, 1977). By mapping the visual preferences using GIS, a city forester could use this and other information to prioritize planting programs and management needs. Tourism providers may use the information to better select routes for various tourism packages.

Five city street corridors were video recorded with a roadside view during the spring, summer, and winter seasons (2008-2009) in Savannah, GA. Visitors were asked to evaluate the scenic beauty of a video by turning a hand-held dial (Perceptual Analyzer). A total of 130 visitors participated in the study. Data were collected each second of the evaluation. Respondents also completed a short questionnaire. Moment-to-moment derived data were used to develop scenic beauty maps. The data were compared with other GIS tree data.



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The purpose of this study is to add to the Savannah Park and Tree Department's extensive data base by developing a scenic beauty map of downtown. By mapping the visual preferences using GIS, a city forester could use this and other information to prioritize planting programs and management.

## Main effects:

1. Trees in squares are preferred to trees out of squares ( $p < 0.001$ )
2. Taller trees (21 to 30 or 41 or more feet) were preferred ( $p < 0.001$ )
3. Wider trees (37 or more inches) were preferred ( $p < 0.001$ )
4. Mature trees were preferred ( $p < 0.001$ )
5. Trees in good condition were preferred ( $p = 0.050$ )

## Season interactions:

1. Square presence ( $p < 0.001$ )--a higher preference for trees in squares in the spring and summer
2. Tree height ( $p < 0.001$ )--a higher preference for taller trees in the spring and summer
3. Tree width ( $p < 0.001$ )--a higher preference for wider trees in the spring
4. Mature trees ( $p < 0.001$ )--a higher preference for mature in the spring

Little research visually mapped perceived scenic beauty for a city. By mapping the visual preferences using GIS, a city forester can use this information to prioritize planting programs and management needs by identifying hot spots and tree preferences. A healthy urban forest is also high in scenic beauty. Tourists notice and value healthy and attractive trees. Future analysis needs to identify the economic value of scenic beauty of trees in relation to socioeconomic groups in our study.

