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Abstract. The value of the urban forest as a component of the urban environment is significant. Trees provide both environmental and social benefits to urban dwellers. In many cities, financial support for urban forestry is on the decline. The objective of this research was to evaluate the impact trees have on property values of six communities (Bond Hill, Carthage, Clifton, Hyde Park, Kennedy Heights, and North Avondale) of varying socioeconomic levels in Cincinnati, Ohio, U.S. Tax assessor records were obtained for property sales between the years 2000 and 2005. One hundred sites were randomly selected from each of the six communities. Data were collected from each site during the winter as well as the summer months. Dominant genus, caliper of dominant genus, estimate of tree cover, and overall property maintenance were recorded. The hedonic method was used for this analysis. The average (mean) effect of tree canopy across all six communities was an increase of approximately USD $780 per one percent increase in tree cover. The mean sale price across the 600 sites was $188,730; the mean canopy cover was 25.8%. This indicates the average value of tree canopy is $20,226 or 10.7% of the sale price of the home.

Key Words. Cincinnati; Environmental Benefits; Hedonics; Ohio; Property Value; Urban Forestry.

Abstract. Auburn University (Auburn, Alabama, U.S.) was used as a site for a case study evaluating the standard plot sampling protocol for i-Tree Eco. A 100% tree inventory of the managed areas of campus was conducted in 2009–2010 and provided a complete data set for the evaluation. Air pollution removal, carbon storage, and carbon sequestration were the ecosystem services examined. Total tree population was also utilized for this assessment to provide a comparison to i-Tree Eco protocol. To achieve an estimate with a ±10% allowable error of the total campus value, 622 plots (0.04 ha each) with at least one tree present would need to be inventoried for air pollution removal, 870 plots for carbon storage, 483 plots for carbon sequestration, and 258 plots for number of trees, as opposed to the standard i-Tree Eco protocol of 200 plots. This study provides a first step in evaluating i-Tree Eco sampling protocol; however, efforts testing these results at sites throughout the southern United States are needed to provide the most accurate estimate of plot numbers necessary for predicting ecosystem services of urban forests.

Key Words. Alabama, i-Tree Eco; Plot Sampling; UFORE Model; Urban Tree Inventory.

Abstract. Measurements of urban tree canopy cover are crucial for managing urban forests and required for the quantification of the benefits provided by trees. These types of data are increasingly used to secure funding and justify large-scale planting programs in urban areas. Comparisons of tree canopy measurement methods have been conducted before, but a rapidly evolving set of new technologies and applications may leave urban foresters wondering, "Which method is most appropriate for my circumstances?"

This analysis compares two well-established measures of local tree canopy and building cover with a third, relatively untested technique. Field-based visual estimations (using the USDA Forest Service's i-Tree protocols), summaries of high-resolution land cover data using geographic information systems (GIS), and an analysis of skyward-oriented hemispherical photographs at 215 roadside sites across the five diverse counties of New York City, New York, U.S., are the methods evaluated herein.

The study authors found no statistically significant differences between the methods when comparing tree canopy; however, the hemispherical camera had a tendency to overestimate building coverage.

It is concluded that hemispheric photo techniques are understudied in urban areas, and that the i-Tree and GIS-based approaches are complementary and reinforcing tools indispensable for both the urban forest management and research communities.

Key Words. Forest Measurement; Gap Light Analyzer; GIS; Hemispheric Photos; i-Tree; Urban Land Cover; Urban Tree Canopy.

Abstract. One issue confronting the application of forest management principles to urban tree canopy management decisions is the lack of data correlating site, tree size, and tree age. Researchers tested whether terminal size (stem diameter) can be linked to site type for informed management and design decisions. Data were considered from eleven New Jersey, U.S. communities. Diameter breast height (DBH) distribution established regionalized service life expectancies of commonly planted species by site type and expected maximum DBH. The goal was to develop a method to identify trees approaching senescence within an inventory. Three common urban landscape site types were used: tree pit, planting strip, and unlimited soil. Thirty-one taxa were present in large enough populations to use in species-specific analysis. The species were classified into small, medium, and large size categories based on published growth expectations. The study authors developed DBH occurrence percentiles, and DBH within the ninety-fifth were described as a maximum size range. There was a significant difference in maximum sizes between planting site types. Regardless of the size class of the tree, the data showed reduced planting space resulted in reduced maximum size.

Key Words. Age Class; Canopy Management; New Jersey; Senescence; Site Type; Urban Forest; Urban Tree Growth.

Abstract. Urban governance in Western societies is increasingly shaped by awareness of the importance of trees in maintaining the environmental function and social livability of cities. Records of change in urban forest composition on public land are generally good. However, a great proportion of trees in western cities occur on private land, where such changes are poorly-documented. The study authors trialed the use of size class analysis, a technique widely used to deduce the dynamics of natural forests, to determine change in the private urban forest. From a sample of blocks in ten suburbs of the Australian cities of Melbourne and Hobart, in which most dwellings have front and back gardens, researchers assessed the implications of changes for the functionality of the urban forest. The height class distributions of a large number of front garden tree taxa were classified. Although the factors affecting height class distributions differ between a natural and an urban forest, those distributions found for most species were so extreme that there was little doubt in interpretation. Tree species that can grow to a large height were under-represented in the smaller height classes, indicating their future decline in the private tree estate. Individuals of glossy-leaved small tree species were over-represented in the smaller height classes, indicating a recent increase in their popularity. The shift toward smaller, denser trees on private land has implications for the functions of the urban forest. A higher level of large tree protection on private land and compensation through planting on public land could mitigate impacts.

Key Words. Garden Tree; Species Composition; Species Preference; Street Tree; Suburban Residents; Tree Management; Urban Forest; Urban Plants; Urban Vegetation.

Abstract. Twenty-one mature and thirty-six young common hackberry (*Celtis occidentalis* L.) trees received a single application of ^{15}N double isotope enriched ammonium-nitrate (NH_4NO_3) fertilizer. Application rates were 0, 0.49, and 1.47 kg N 100 m^{-2} of canopy coverage, respectively. Foliage, current season stem wood, stem wood, root, and fruit tissues were analyzed for total concentration [N] and nitrogen derived from fertilizer (NDFF). Growth phase and application rate did not consistently affect total % [N], particularly the N demanding foliage. Growth phase and application rate significantly affected the percentage of NDFF. In every instance, NDFF was highest in the tissues of young trees and/or trees receiving the 1.47 kg N 100 m^{-2} application rate. Mature trees relied upon previously assimilated N to meet the annual demand for N to a greater extent than young trees.

Key Words. ANSI A-300; *Celtis occidentalis*; Fertilization; Hackberry; Nitrogen; Remobilization.