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Abstract. Images of wind-thrown trees make for dramatic news coverage. The implied message in most coverage is that strong winds and heavy rain are the cause of the tree failure. However, is the storm the only cause of the tree falling? Many other, and often bigger, trees did not fall. This feature article reviews some of the current literature relating to windthrow of trees. The size and characteristics of tree canopies have a profound influence of the forces that winds exert on tree trunks and roots systems, while the characteristics of tree root systems often determine whether trees fail during storms. The results of a site inspection suggest that there may be other factors, such as the history of the tree and the history of management practices to which the tree has been exposed, which may contribute to its failure during a storm.

Site inspections of 80 wind-thrown trees from eight different genera were conducted over a period of 20 years. The inspections revealed that damage to exposed lateral roots (87.5%), the loss of descending roots (88.8%), and evidence of soil compaction at the base of the tree (65%) were often coincident with windthrow. Evidence of trenching near the trunk of the tree (58.8%) and waterlogging of the soil around the base of the tree (56.3%) were also common correlates. The literature surveyed and the results presented not only suggest where aspects of urban tree management might be improved, but may also prove helpful to arborists assessing tree hazards related to possible windthrow. Inspection protocol criteria should include damaged or decayed lateral roots, the loss of descending roots, evidence of site or trenching work close to the trunk, and whether trees are growing in compacted and waterlogged soil.

Key words. Descending Roots; Root Damage; Tree Root Systems; Tree Management; Trees and Storm Damage; Urban Trees; Windthrow.

Abstract. Many cities have policies encouraging homeowners to plant trees. For these policies to be effective, it is important to understand what motivates a homeowner's tree-planting decision. Researchers address this question by identifying variables that influence participation in a tree-planting program in Portland, Oregon, U.S. According to the study, homeowners with street trees, and those living in older homes, are more likely to participate in the local program. Homeowners who had owned their homes for longer, and those who live in census-block groups with lower high-school graduation rates, are less likely to participate in the program. Results suggest that tree-planting programs may inadvertently exacerbate environmental inequality.

Key Words. Census; Demographics; Education; Environmental Justice; Income; Oregon; Portland; Race; Urban Forestry.

Abstract. Urban environments present an array of environmental conditions detrimental to the biology of trees. Two major problems include deicing salts, a common soil pollutant, and drought. One potential option for managing these enviro mental disorders may be through the application of commercially available biostimulants, as these products are reported to enhance a plant's resistance to environmental stresses. Trials used containerized stock of evergreen oak (*Quercus ilex*), holly (*Ilex aquifolium*), rowan (*Sorbus aucuparia*), and beech (*Fagus sylvatica*) to evaluate the effectiveness of seven commercially available biostimulants as drought and salt protectant compounds. Results conclude that none of the biostimulants evaluated in this study provided any significant degree of salt or drought damage protection compared to water-treated controls.

Key Words. Drought Tolerance; Environmental Stress; *Fagus sylvatica*; *Ilex aquifolium*; Landscape Disorders; Plant Health Care; *Quercus ilex*; Salt Tolerance; *Sorbus aucuparia*; Tree Physiology.

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Abstract. A growing number of municipalities and nonprofits work with private citizens to co-produce the public benefits associated with urban forests by providing sizeable young trees to neighborhoods that agree to plant and water the trees for the critical first few years after planting. Little research has addressed the effectiveness of such programs or the extent to which variation in neighborhood maintenance and watering strategies may be related to biophysical and social outcomes. Without such knowledge, tree-planting investments are at risk of being a sink of public or charitable funds. This paper presents a case study of Keep Indianapolis Beautiful, Inc.'s neighborhood tree plantings in Indianapolis, Indiana, U.S., where researchers explored the relationship of neighborhood watering strategies with planted-tree outcomes, and with subsequent collective activities. The study authors observed neighborhood variation in whether trees were watered by individuals or collectively (groups of individuals), whether signed watering commitments were utilized, whether monitoring of watering occurred, and whether monitoring and subsequent sanctioning (when necessary) changed watering behavior. Results demonstrate that collective watering, signed watering agreements, and monitoring/sanctioning that changed behavior were positively associated with tree survival. Collective watering was also positively associated with subsequent collective activities, such as a neighborhood clean-up or block party. Such findings can improve the guidance offered by municipalities and nonprofits to neighborhoods for the management of successful tree-planting projects, and can ultimately improve the survival, growth, and thereby benefits provided by neighborhood-planted trees.

Key Words. Collective Action; Indiana; Indianapolis; Institutions; Planting; Tree-planting Programs; Urban Forest Management; Watering.

Abstract. With a growing number of urban tree inventory methods and diversifying use of tree inventory data by city authorities and researchers, there is a need to evaluate, review, and critically assess the inventory methods available. This study reviewed studies using urban tree inventories at single-tree level as their data source. Based on this, a bibliographic overview was established and a typology of contemporary urban tree inventory methods was created and used as a framework for evaluation and discussion of the measurement type and accuracy achievable with different methods. The authors found that data from urban tree inventories are currently being employed in research with an increasing number of focuses across a geographical scope that spans all continents except Africa. Four main types of urban tree inventories were distinguished: satellite-supported methods, airplane-supported methods, on-the-ground scanning or digital photography, and field surveys. Compiling results across studies and evaluating the parameters collected by these inventory methods and their accuracy of measurement revealed that the technology itself and current data processing methods limit the reliability of the data obtained from all methods except field surveys. The study authors recommend further technological development and scientific testing before these methods can replace field surveys.

Key Words. Airborne; Field Survey; Ground Scanning; Inventory; Satellite; Street Tree; Tree Assessment; Urban Forestry.

Abstract. Street trees comprise a fraction of the urban forest; however, due to their public function, the benefits they provide to urban residents have received particular attention from researchers. Spatial analyses of street tree benefits have been based on street tree counts that do not account for differences in tree species and size that in turn impact leaf surface area from which most benefits are derived. The United States Forest Service's i-Tree Streets software program quantifies street tree benefits and does account for differences in tree species and size, but is not a Geographic Information Systems program and does not facilitate the spatial analysis of street tree benefits. This paper proposes a methodology for analyzing the spatial distribution of street tree benefits employing measures based on i-Tree Streets. Providence, Rhode Island, U.S., serves as a case study.

Key Words. Benefits; GIS; i-Tree; Services; Spatial Analysis; Street Trees.