ARBORICULTURE & URBAN FORESTRY

Volume 37, Issue 2, March 2011

Formerly the Journal of Arboriculture, 1975 – 2005 (Volumes 1 – 31)

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CONTENTS

Abstract. An experiment was established to determine the effect of porous pavement on underlying root growth. An augmented factorial arrangementof pavement profile designs and pavement types was installed and fifty *Platanus orientalis* seedlings were evenly distributed to control plots or one of four treatments. Treated plots were characterized by either porous or impervious pavement pads measuring 2.3 m × 2.3 m, and underlain by either fine sandy loam or a gravel base and compacted subgrade, reflecting two pavement profile designs. Following two growing seasons, root abundance was categorized by diameter and depth. Results suggest root abundance is greater, especially at shallow soil depths, under pavements. Pavements designed with a compacted subgrade and gravel base only exacerbated shallow root growth, though they could decrease total root abundance. Finally, porous and impervious pavements affected root abundance and distribution in similar ways, dismissing the use of porous pavements to promote deeper rooting.

Key Words. Abundance; Biomass; Diameter; Distribution; Oriental Plan; Permeable; Pervious; Road; Sidewalk; Soil Compaction; Street Tree.

Abstract. The professional skills and expertise demanded of practicing arborists are greater than at any time in the past, and many employers and educators believe that higher education plays a role in educating future professionals in this field. Although recent surveys have identified major instructional topics that are critically important for future arborists, no assessment of whether these topics are being taught in college and university programs is available. The following paper is a syllabus-level assessment of 68 arboriculture courses being taught at U.S. institutions of higher education. The most common instructional topics observed in syllabi of arboriculture courses at both two- and four-year institutions were pruning (85%), disorders (81%), physiology/biology (79%), risks/hazards (79%), and soils/nutrition (75%). Tree planting and tree selection, topics identified by educators and public sector employers in previous studies as among the most important instructional areas, were found only in 74% and 62% of course syllabi, respectively. Safety was mentioned in only 53% of syllabi. Syllabus content was similar at two-year and four-year institutions, although tree identification and arborist certification were mentioned more frequently in two-year institution syllabi. Trends in arboriculture education and implications for employers and professionals are discussed.

Key Words. Arboriculture Education; Arborist Training; Course Objectives; Educational Assessment.

Abstract. A subsample of 332, 0.06-hectare plots measured during 2001–2002 in Houston, TX, U.S., were relocated and measured in 2008 following Hurricane Ike. These 37 re-measured plots provide a unique opportunity to explore the effects of urbanization and hurricanes on the forest structure of coastal urban forests. Statistical analyses of growth, mortality, and in-growth were conducted using plot- and tree-level factors. In total, 305 trees were re-measured, of which 195 (63.9%) still remained on-site and 110 (36.1%) had been removed. Ninety-seven (31.8%) of these trees were determined to be removed due to urbanization and 13 trees (4.3%) were removed due to hurricane impacts. Results show an overall annual net loss in tree numbers and an increase in tree density during the analysis period. Average annual mortality and in-growth rates were 3.9% and 5.3%, respectively. Growth rates were significantly influenced by land cover type, tree stem diameter, crown width, and percent dieback ($P < 0.05$). Overall, Hurricane Ike resulted in the removal of 4.3% of all trees measured, with removal occurring on six (16%) of the 37 re-measured plots. These initial findings could be used to understand changes in forest structure in coastal urban areas, improve estimates of carbon sequestration, and develop management goals.

Key Words. Emergency Management; Hurricane Damage; Urban Forest Growth; Urban Forest Mortality.

Abstract. Supplemental support systems are used to reduce the risk of failure of codominant stems. The goal of this study was to evaluate dead-end stop terminated cables used in trees and to compare the strength of small tree cable systems. Field evaluations comparing eyebolt and Wire Stop® anchored cables found an enlargement of the hole through the branch in 39% of the Wire Stop terminations with a mean size of 6 mm. Static break tests found that the strength of cable system varied with the strength of the wood and system configuration. From a system strength perspective in oak: bent eye screw lags < welded eye screw lag = single swage stop = single swage stop with washer < double swage stop with washer = eyebolt. In pine, bent eye screw lags = welded eye screw lag = single swage stop < single swage stop with washer < double swage stop with washer = double swage stop with fender washer < eyebolt.
Key Words. Codominant Stems; Eyebolts; Ferrule; Guys; Junction Failures; Lags; Support Cable; Swage Stops; Tree Failures; Tree Support System; V-crotch; and Wedge.

Abstract. Described here is the development of a web-based cost calculator for projecting management costs and restoration, during a planned response to an emerald ash borer invasion in the City of Indianapolis, IN, U.S. Forest sizes, measured as the sum of tree diameters, and costs of managing urban ash trees were projected under various management scenarios over a 25-year period. The study authors illustrate how a city can use local information to compare management plans. Although the simple strategy of treating all ash trees provided the lowest annual cost and produced the largest forest, this option was ultimately the most expensive. Simply removing ash trees and replacing them with resistant trees restored the forest to its initial size after 25 years. However, after taking five years to complete tree removal and replacement, the initial ash forest was reduced to a mere 27% of its original size. When this management plan was modified, by protecting trees in the median size class with insecticides, the restoration forest was below 50% of the initial size for two years but at a discounted cost that was only 6% greater than replacing all trees. The authors of the study describe how the cost calculator can be used to address the unique local attributes of urban forests.
Key Words. Emerald Ash Borer; Forest Restoration; Management Costs.

Abstract. A survey of 586 community representatives with urban tree canopy responsibilities was conducted to provide data on ash density within four states in the Midwestern U.S., and to examine potential economic losses should emerald ash borer (EAB) become established in their communities. One hundred twenty-three responses were received from communities of various sizes. Data represented 10.5% of the population of Illinois, Indiana, Michigan, and Wisconsin, U.S., and 21% of all communities surveyed. Assuming the complete loss of ash due to EAB, losses in landscape value for ash trees within community boundaries were estimated to be between USD $7.7 (median-based) and $15 billion (mean-based). The cost to remove those trees is somewhat smaller and would be between $3 and $5.8 billion. Replacing trees lost to EAB with smaller 5 cm trees in street, park, and private plantings would cost between $2.7 and $5.2 billion. The total loss of ash for communities in the four states surveyed, including landscape losses, tree removals, and replacements are estimated to be between $13.4 and $26 billion. The potential total costs per 1,000 residents in the four-state region is estimated to be between $395,943 and $769,687. The rates per 1,000 residents estimates can be utilized by communities to begin developing contingency plans should EAB impact them.
Key Words. *Agrilus planipennis*; Ash Tree Density; Cost of Ash Tree Removal/Replacement; Economic Impact; Emerald Ash Borer; EAB; *Fraxinus*; Green Ash; Survey; White Ash.