

From Frill to Fundamental: The Growing Importance of Science to the Tree Care Industry

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One goal of the ISA's Science and Research Committee is to increase appreciation and investment in research. This article will explain why your commitment to science and research is vital to your professional growth and the future of arboriculture and urban forestry.

A number of studies have examined the economic impacts of the tree care industry and found them to be substantial. A U.S. study reported that in 2002 the value of tree care services was \$9.9 billion annually (Hall et al. 2005). With tree production added, the total economic impact was \$14.6 billion. Because of secondary spending of income earned by the approximately 259,000 persons working in these sectors, total economic benefits were \$21 billion. To put \$21 billion into perspective, economic benefits of the entire green industry were \$148 billion with two million jobs. Another comparison, U.S. paper and wood products companies posted annual sales of over \$200 billion and employ almost one million (American Forest & Paper Association 2009). In short, the U.S. tree production and care industry accounts for 14 percent of the economic impact of the entire green industry (\$148 billion). The US green industry employs twice as many workers as the paper and wood products industry, and rivals it in economic stature.

Although the green industry is not entirely "recession-proof," sales are not expected to drop sharply (Stanley 2009). Consumers will travel less and spend more on their landscapes, a behavior called "cocooning." In the long-term, investments in tree care services will continue to grow. This growth will be driven by several factors:

- Adoption of environmental ethics by more corporations and a growing number of active green consumers. Investing in tree planting and care is a natural behavior for green consumers.
- Implementation of policy and markets for the ecosystem services produced by trees aimed at capturing carbon, controlling stormwater, conserving energy, and cleaning the air. For instance, more than 900 U.S. mayors have signed the Mayors Climate Protection Agreement and instituted urban greening programs that include tree planting and stewardship.
- Increased interest in improving human health in cities through policies that promote better nutrition and physical fitness. Edible landscapes, greenways, and parks promote human health, and trees are their primary component.
- Transformation of aging landscapes into greenscapes of the future that incorporate drought tolerance, biodiversity, opportunities for social interaction, and a nearby "dose of green" for all segments of the public. Higher density in-fill development and impacts of climate change on weather will challenge us in the re-engineering of our green infrastructure.

As the tree service industry grows, it changes to meet the shifting demands of its customers. As customers become more appreciative of the environmental, social, and economic value of tree services, they expect their trees to perform at a higher level than before. Every tree and its supporting soil system is an integrated, multifunctional *Best Management Practice*, not a single purpose tree. Many tree sites

will be engineered to capture, clean, store and conserve rainwater, prevent pollution and flooding, clean the air, and save energy and drinking water. Appearance will not be the only measure of performance. Other measures will include runoff intercepted by the crown and detained in the soil, carbon sequestered, shade produced, habitat and food supplied, longevity, and maintenance costs. Quality performance will be paramount in every stage of the industry: nursery stock, tree selection and site preparation, planting and establishment, young tree pruning, mature tree care, health monitoring, soil and irrigation management, tree removal, reuse, and replacement. Inferior quality at any step in this production chain can adversely affect a tree's functional performance and compromise customer satisfaction.

Science and research help arborists adapt to these changes through the development of new knowledge and technology. Both basic and applied research are fundamental to the culture of high-performing trees. For example, an improved understanding of how different irrigation practices influence soil moisture and tree root growth helps arborists sustain the performance of existing trees and improve water use efficiency. Improved technologies for measuring wood decay and new approaches for assessing risk help arborists retain sound trees, while reducing liabilities. Research on biocontrols for new pests and diseases combats these threats before they decimate tree populations. Advances in remote sensing and radio frequency identification technologies increase tree health monitoring efficiency and accuracy. New techniques for growing and handling nursery stock prior to planting will increase survival rates, spur growth, and reduce root defects and pruning costs.

Customers no longer see trees as merely a frill, but rather as fundamental to their quality of life. Keep current with the science of arboriculture by reading articles, attending seminars, and testing new ideas in practice. Seek out knowledge from a variety of sources. Adopt a scientist, and get to know more about his or her research. Support ISA and the TREE Fund. Investments in science and research pay back many times over. Your investment in science and research is an investment in your professional growth. As our industry changes, it is an investment that you cannot afford to forego.

Literature Cited

- American Forest & Paper Association, 2009. website home page. www.afandpa.org/Template.cfm?section=About_AFandPA.
- Hall, C.R., A.W. Hodges, J.J. Haydu. 2005. Economic Impacts of the Green Industry in the United States: Final Report to the National Urban and Community Forestry Advisory Committee. Washington, D.C., NUCFAC. 81 pp.
- Stanley, J. 2009. The Garden Centre Scene. *Southwest Horticulture*. 26(1):16-17.

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