Arborists: Environmental Professionals

A Position Paper Authored by the Connecticut Tree Protective Association

In Connecticut, arborists have done very well in establishing themselves as professionals. The tradition of professional arboriculture in Connecticut goes back at least as far as the first 'Tree Expert' law, creating the arborist license, passed by the Connecticut General Assembly in 1919. As a result of that law, one can only legally call him or herself an arborist in Connecticut if they have been licensed by the state. In order to obtain that license, one must go through a rigorous testing process, consisting of three separate exams. Through these exams, the prospective arborist must prove knowledgeable in tree biology, condition and health, and must also show that they know the proper and safe methods for diagnosing and treating tree problems. The candidate must also know how to keep the public protected with regards to tree work and the use of pesticides.

Because of the arborist licensing law, arborists in Connecticut as a group are competent, dedicated, aware of the greater good and motivated to uphold the standards of their field. In other words, arborists in the State are professionals. And, it is the people of Connecticut who reap the benefits of this professionalism.

It is the environmental aspects of arboriculture that deserves a closer look. It may seem obvious that arborists, as professionals who care for trees, are environmental professionals. However, it is helpful to take a closer look at the specific ways in which arborists contribute to maintaining and improving the natural environment. This paper will touch on some of those ways, starting with the trees themselves.

The Contributions of Trees to our Environment

Everyone intuitively knows that trees are good for the environment – but exactly what is it that trees do that produces these environmental benefits? Recently, there has been a great deal of research directed towards trees and the benefits that they provide. Scientists have identified, in results that are both specific and quantitative, ways in which individual trees contribute to human health and the health of the environment. For example, their research has shown how trees produce oxygen, reduce particulate and gaseous pollutants, sequester carbon, help storm water to penetrate the soil, cool buildings, reduce the heat island effect in the urban core, and so on. In other words, trees perform essential environmental functions that, if trees did not exist, humans would have to develop alternative means to accomplish, for the sake of environmental quality.

These environmental benefits of trees through improved air quality were very effectively summarized in an article in the New York Times, entitled, "Get that Oak an Accountant" (Metro Section, May 12, 2003). In this article, the author pointed out that the trees in just a small section of New York City by themselves removed some 143 tons of pollutants – a service equal to $814,000 of equivalent air pollution reduction.

The benefits of trees, however, are not limited to pollution reduction alone. Trees enrich the spectrum of wildlife that shares our living space. Further, study after study has

shown that trees can lead to significant reductions in overall energy demand, by cooling homes and offices in the summer and reducing wind exposure in the winter. Trees also have measurable social benefits, as was shown in a Chicago public housing project. There, researchers found that the presence of trees near residences were associated with increased quality of life for people in those buildings, as measured by greater social motivation, increased employment, reduced crime and decreased anti-social behaviors (Kuo and Sullivan, 2001, *Environment and Behavior*, 33 (3): 343-367).

One common thread in these studies is that trees perform these beneficial functions best when the tree is a large, healthy tree. This is where the contributions of arborists become particular important. Along with large trees come the responsibilities of maintaining these trees. The professionalism, knowledge and dedication of the licensed arborist are critical to keeping these large trees healthy, safe and part of the landscape.

Arborists and Wood Products

Clean air, clean water, oxygen and attractive beauty are, of course, all products in and of themselves from proper tree care. However, arborists and others involved in tree care are also responsible for removing large quantities of the wood produced by trees in the urban and landscape setting. The amount of wood generated by trees in the built environment is not insignificant. Researchers from the US Forest Service have estimated that:

> In the United States over 200 million cubic yards of urban tree and landscape residue are generated every year. Of this amount, 15 percent is classified as "unchipped logs." To put this figure in perspective, consider that if these logs were sawn into boards, they theoretically would produce 3.8 billion board feet of lumber, or nearly 30 percent of the hardwood lumber produced annually in the United States. (Bratkovitch – Utilizing Municipal Trees, USDA Forest Service 2001)

A fair amount of that wood waste produced in Connecticut is put to good use. For example, following the rather substantial increase in waste disposal fees that occurred in the early 1990's, arborists and other tree workers searched for alternative means of disposing of wood chips and large woody debris. Coincidentally, about this same time, a rather large market developed for landscape mulch, much of which could be derived from woody landscape debris. In a rather neat closing of the cycle, arborist and others involved in horticulture picked up on research that demonstrated the importance of properly mulching trees and shrubs in order to maintain the health of these plants.

There is still much that can be done with regards to the use of the wood that is removed from the landscape. Greater amounts of this wood can be recycled into solid wood products. However, more research is needed as to the possible way in which this wood can be harvested and into the outlets needed for the further processing of this material. As more becomes known about the best ways to use this resource, the arborist will certainly be a key player in connecting the individual who wishes to make use this resource with the individuals who own the trees.

Arborists and Public Safety

One of the obvious concerns with trees is their size. Trees consist of significant amounts of heavy wood held high in the air that will come crashing down if some part of the tree fails. Concern for the safety of clients and their property, as well as for the safety of the public at large, is a significant part of the arborist's responsibilities. As part of the licensing procedure, arborists must show that they are able to identify potential hazards in trees and that they know how to prune, brace, cable or otherwise improve the structural condition of trees when such structural support is needed. Alternatively, arborists may recommend the removal of a tree when they see that as the preferred course to take.

For an arborist, concern for the continued safe condition of the tree must be a routine part of his or her work. It is not enough just to leave a tree in a safe condition – to just deal with the present problem. The future must also be taken into account. To do so, the arborist must call on his or her knowledge of how trees grow and change over time, and how they will react to the work being done, so that today's solution does not become tomorrow's problem. A considerable part of arboriculture has been learning from the experiences and lessons of the past – a past recorded and analyzed through professional diligence.

Public safety regarding trees is important. If trees become perceived by the public primarily as a liability, then, as time goes on, the public will be less and less likely to favor the retention of trees in the landscape. Given the number of trees that are located near homes, in yards and parks, along streets and roads, adjacent to buildings, and, generally, where people live, work and play, this is significant. If these trees are not allowed to remain in the landscape, the environmental benefits that flow from these trees will also disappear, to the detriment of the environment and society both.

Integrated Pest Management

Another major responsibility of arborists is managing the insects and diseases that cause harm to trees. For the generation of arborists that worked during the peak years of the gypsy moth infestations, this meant a well-coordinated attack on specific pest problems, often relying on timely applications of the most effective pesticides available.

Since the decline of the gypsy moth as a major problem in the Connecticut landscape, a new, more sophisticated approach to dealing with insect and disease problems has developed among the State's arborists. This approach, under the general heading of "integrated pest management", centers on the arborist working more with nature rather than just against the pest. Arborists today are much more aware of the natural resiliency of trees and the tree's ability to deal with potentially harmful pests on their own terms. The arborist's role is to, first, understand the tree, its health and overall ability to deal with potential problems, and, second, to understand the potential problems and the likelihood that they are to damage or harm the tree. The client's expectations are also a major part of this process.

The approach to tree care based on integrated pest management has led to a more judicious use of pesticides and a greater awareness of alternative means of promoting tree health. Included in this awareness is a deeper understanding of how all parts of a tree influence the tree's condition, from the roots to the leaves. It also involves recognizing the importance of environmental factors and the manner in which these environmental factors can be influenced in order to promote tree health.

Along these same lines, arborists are on the frontlines with regards to being ready to deal with invasive insects and diseases that may affect trees. Arborists consider it a professional obligation to stay up to date with such potential problem organisms as the Asian longhorned beetle, the emerald ash borer and sudden oak death – problems that if they hit Connecticut could be devastating. Early detection and response is key to minimizing the impacts of these organisms should they find their way here; and arborists are in the right position to do just that.

The Multiple Aspects of Arboriculture

The State Statutes regarding arborists are clearly directed towards commercial arboriculture – that is tree care for hire, such as occurs primarily on private properties. The licensing process established by Statute has been very effective in reaching the right people, as there are nearly 840 individuals in the state currently holding an arborist license. Enforcement efforts against those who do tree work without a license and the definition of clear standards with regards to what constitutes proper tree care have established a culture in Connecticut regarding tree work that affects everyone who works with trees, whether or not their work can be called arboriculture and whether or not what they do requires an arborist license.

One example of where this can be seen is with regards to the tree wardens. State Statutes require that each municipality in the State appoint a tree warden, and that this tree warden has responsibility for all public trees in that municipality. Over the past 15 years there has been an increasing awareness among tree wardens of the complexity of their jobs, and of the need for the sharing of accurate, useful information with other tree wardens.

As a result, the tree wardens have established a Tree Wardens Association and created a voluntary Tree Warden Certification Program. Tree wardens have also, as a group, developed a closer relationship with arborists and with such tee care associations as the Connecticut Tree Protective Association and the International Society of Arboriculture. Tree wardens recognize the degree to which knowledge of arboriculture is an important part of their performance of their public duty. While the commercial arborist and the municipal tree warden do not share all of the same responsibilities, there is a great deal of sharing between their professions, founded in part in a common dedication to keeping trees safe and healthy for the people of Connecticut.

Arborists, through their professionalism and through the licensing requirement, also provide leadership among the green industries in Connecticut. Because the arborist license goes beyond simply regulating pesticide usage and relies on defined standards and

on third-party oversight, it sets the bar for all other disciplines within the green industry. This list of disciplines includes the nursery industry, landscapers and landscape designers. Among the green professionals, only the landscape architects require a similar degree of professional credentialing.

Much of the credit for this leadership within the field of arboriculture goes to the Tree Protection Examining Board. This entity was established by the first Tree Expert Law in 1919. The Tree Protection Examining Board has, since that time, performed its responsibilities ably and admirably. The responsibilities include the recommendation of standards for tree care in the state, the examination of the qualifications of those who seek the arborist license and overview of the practices of arborists in the field.

The Tree Protection Examining Board is a dynamic, responsive entity with membership drawn from a range of backgrounds, including the professional ranks, academia and from such fields related to arboriculture as forestry and plant pathology. This diversity on the Board allows it to recognize change as it is occurring within the profession, to evaluate these changes and then participate in the process that encourages the dissemination of beneficial change throughout the profession.

In sum, arborists are indeed dedicated professionals actively engaged in maintaining and improving the natural environment within the State of Connecticut. Their strength comes from the arborist license, while their direction involves input from many sources. The work that arborists do has enormous benefits for the people of Connecticut – both directly, through the environmental improvements achieved through proper tree care, and indirectly, through the impacts arborists have on such other environmental issues as the disposal of wood waste, partnership with other environmental professionals and leadership in the green industry.

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