

COUNTING ON TREES

by **Steven Graham**

The many tree-lined streets and forested parks of Tampa, Florida add greatly to our resident's quality of life, especially in periods of rapid growth. In some ways the advantages of this natural resource are quite discernable. Trees lend a distinct sense of identity to neighborhoods, increase property values, and, in general, beautify the community. Yet trees also play a more subtle role through environmental modification. Properly selected trees mitigate air pollution, excessive noise, turbulent winds, temperature extremes and sun glare. This is most obvious in the central business district where towering, mirrored buildings and extensive pavement can simulate an urban desert. Moreover, a well-designed cityscape can direct pedestrian and vehicular flow, accent and define traditional as well as modern architecture, provide interest through seasonal changes in foliage and flowering, and realize energy conservation from the effects of strategically placed deciduous trees.

The Tampa Parks Department, under the directorship of Ross J. Ferlita, has the stewardship of over 200,000 municipal trees. In order to reconcile urban growth with arboricultural needs, the Parks Department is taking a systematic approach to efficient and effective management of Tampa's Urban Forest. This approach is the Tampa Municipal Tree Inventory (TMTI).

Volunteer Resources

In early 1983, after much research and deliberation, a municipal tree inventory was devised and implemented. Priority areas to be inventoried were defined, including major street rights of way, parkways and parks. Because of budget limitations and the Parks Department's involvement in a number of special projects (e.g. Super Bowl XVIII beautification), it was decided that the inventory would be conducted primarily by volunteer forces.

As anyone who has worked with a non-paid staff knows, there is an art to gaining consistent and reliable volunteer assistance. Initially a barrage of

press releases directed at a broad class of people was provided to the local newspaper. Training sessions were offered and success was moderate. However, after 3 months, interest began to wane and the dropout rate was high. Since then, we have learned to narrow our range and to focus our attention on specific areas and groups of individuals. For instance, citizens are more apt to inventory their own street than to take on a larger or more distant unit. Neighborhood pride and loyalty are very compelling forces. Similarly, particular organizations like garden clubs are more inclined to inventory areas where members reside and are active. Moreover, a sense of accomplishment is realized within a relatively short time frame.

Annual neighborhood tree planting projects involving groups of residents and various garden clubs have also created a natural association that heightens the public's perception of the necessity for a tree survey. The utility and importance of conducting an inventory prior to tree planting suddenly becomes clearer to those involved. We hope to expand on this idea by allotting trees from our own nursery to be planted in residential neighborhoods that have completed an inventory. This would be done in an equitable manner on a yearly basis. In this way, we would also satisfy a departmental goal of planting 1500 trees per year. Technical assistance and training sessions will be provided for interested individuals and organizations.

Non-volunteer resources. Although we rely heavily on volunteer support, we have been fortunate enough to receive project assistance in several other ways. An informal student internship program through the University of Florida allowed two students (landscape architecture and forestry) to work one semester on the inventory in exchange for college credit. We hope to foster more interest in this approach, as all parties involved benefit. The city has a summer youth employment program that has been utilized as well. Youths that qualify are employed at minimum

wage and receive valuable job skills. We received 4-6 employees for the tree inventory over the last two summer work periods. Proper training and supervision resulted in significant percentage of the inventory being completed.

On the job training will be provided to Parks forestry personnel through work performed on the inventory. This will be scheduled on an individual basis so as not to disrupt the division's daily productivity. While forestry personnel are skilled at trimming and tree removal, additional arboricultural training will improve work performance and advancement capability and will add depth to the department. Also, since Forestry will be responsible for updating the inventory, it is necessary for them to become familiar with the process.

Objectives of TMTI. Objectives of the municipal tree inventory are three-fold. One is to garner as much information as practical about each individual tree growing on city property. This involves analyzing such factors as condition, state of maturity, size and species of tree. Evaluating condition makes it possible to determine if a tree is healthy and vigorous or in need of special attention from forestry personnel to extend it's longevity. Evaluation of maturity will indicate whether a tree is in a state of development or decline. Trees in an advanced state of decline will be prioritized for removal to ensure public safety. Size, when coupled with species and other detailed information, will provide an estimate of canopy cover. Equally important is species diversity. To eliminate the problems inherent in a monoculture, it is necessary to establish a variety of species or associated tree species. This will assure a more sound ecological system and fewer fluctuations of destructive insect and disease populations. Most of us remember the devastating effects of Dutch elm disease, and should recognize that it could happen here.

Secondly, environmental constraints and site conditions will be assessed. This primarily involves classifying soil types and drainage patterns. Space for optimal tree development will also be analyzed with respect to natural and/or man-made barriers. Such barriers include extensive pavement, minimal building setbacks and overhead utilities. Where these conditions exist, it is likely that smaller or slower-growing tree

species will be installed during future tree planting projects. This avoids deformities that might otherwise result from planting tree species expected to be too large at maturity. Information pertaining to location is equally significant from the standpoint of selecting trees that are tolerant to pollutants, temperature extremes and salt spray.

Thirdly, it is necessary to store all information so that it is readily available and easy to update. Having the means to analyze scenarios from different perspectives or management viewpoints can then be accomplished. Data storage will be achieved through use of our recently acquired microcomputer. Data from the municipal tree inventory, once computerized, will serve as the foundation of our comprehensive municipal tree master plan. Computer programs will then be written to generate a list of preferred tree species and identify their cultural requirements.

At this point it will also be possible to identify "untreed" streets and other locations to receive priority tree planting. Moreover, tree selection will be facilitated by matching existing site conditions with a list of suitable tree species adapted to a specific set of conditions. The emphasis is on low maintenance and survivability.

The list of preferred species contains mostly native trees. Natives are more adapted to the local climatic and edaphic conditions and generally require less expenditure of energy in the form of labor, water, fertilizer and pesticides. However, certain exotic trees species with the necessary tolerances for heat, cold, drought, pollution, insect, disease and various soil conditions are also on the list. Once installed, the vitality and mortality of departmentally installed trees will be monitored through the computer process.

Maintenance of existing trees will be improved through more efficient and effective scheduling of forestry work activities. Trees requiring routine trimming or corrective pruning to extend their longevity or improve their natural growth form will be more easily identified. Similarly, trees to receive remedial treatment for a variety of insect, disease or nutritional disorders will be recognized. Trees in an advanced state of decline, and beyond saving, will be prioritized for removal by degree of hazard. Hazard trees suitable for firewood will be processed for winter firewood sales. Brush will be

chipped and used as mulch to satisfy departmental need.

An important offshoot of our work is the location and identification of historical or landmark trees as a first step in assuring their preservation. Many of the "Grand Trees" of our urban forest have already been lost to development and general attrition. The Parks Department's Grand Tree Contest held last winter, and sponsored by local business, resulted in citizen nomination of hundreds of significant trees. Favorable media coverage and public involvement have elevated tree preservation to a new level. As a result, protective and rehabilitative measures directed at preserving Grand Trees are being undertaken by both the public and private sector. In addition, the City's Tree Ordinance is being revised and will include a section specifically addressing tree preservation. Many more Grand Trees will be identified through the inventory process.

Conclusion

As more municipalities experience budget shrinkage, efficient management practices and optimal allocation of resources become a must. Park departments across the country are well aware of this and are taking appropriate measures. Ann Arbor, Michigan and Oakland,

California already have municipal tree master plans. Cities in Florida that are in the process to conducting or completing an inventory include Winter Park and Boynton Beach. The exchange of information with other municipalities has provided invaluable knowledge for an undertaking of this magnitude.

Tampa is fortunate to have a civic-minded community. Many individuals have volunteered to survey their street, block or section. Several garden clubs of the Florida Federation have volunteered to inventory entire areas. Other civic groups have also expressed interest in the project. To date, approximately 30% of the inventory has been completed. Although it is taking longer than originally anticipated, we have learned a great deal during the process. Resourcefulness and the potential for volunteer support are two notable examples. The cooperation and enthusiasm of our community assures that many Parks Department goals are achieved, and that Tampa's urban forest and quality of life are preserved for future generations to enjoy.

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