

A Guide to Managing Trees on College and Corporate Campuses

E. Thomas Smiley, Ph. D., Plant Pathologist

Bruce R. Fraedrich, Ph. D., Plant Pathologist

There are two ways to run a campus tree management program. The simplest way, in which most programs are run, is by **crisis or reactive management**. Deadwood is removed when someone complains, trees are planted when donations are received, and fallen trees are cleaned up after a storm.

Crisis management works, it has for years, but is a cost effective way to manage? The alternative is **proactive management**. This entails defining program goals, determining resources, developing a management plan and implementing the plan.

Research has found that crisis management accomplishes work on only one third the number of trees serviced on a proactive management program.

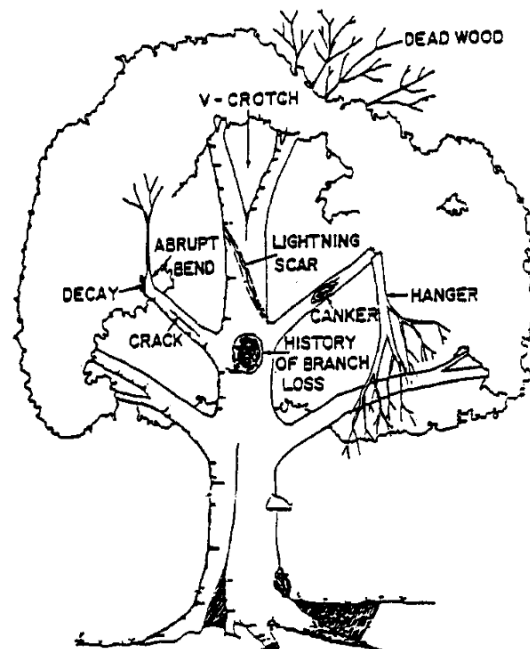
Crisis management is a simple process, whose outcome is determined by external factors. The remainder of this article will describe proactive management for campus trees, designed so you can obtain positive results.

There are five steps to developing a proactive management strategy:

- Define program goals and objectives

- Inventory resources
- Develop a management plan
- Implement the plan
- Follow up with accurate records

Goals and Objectives: Goals and objectives must be designed in clear, precise and measurable terms. Goals vary among tree managers, with most expressing the desire to have an aesthetically pleasing campus landscape that poses no imminent safety hazards to passer-bys.



Examples of written goals may be the following:

Goal 1: For public safety, trees with potentially hazardous conditions will receive remedial immediate treatments or be removed.

Goal 2: To ensure an aesthetically pleasing campus landscape, losses will be minimized with a plant health care program and suitable plant replacements selected.

Goals are defined in objectives. The objectives of Goal 1 become:

A. All trees will be inspected for defects and after major storms annually.

B. Dead or potentially hazardous trees will be removed within one week of their discovery.

C. Hanging or broken limbs greater than two inches in diameter will be removed within two weeks of their discovery.

D. Trees will be pruned "preventively" on a four-year rotation to minimize deadwood and structural problems.

E. Young trees will be pruned on two-year rotations for the first ten years after planting to promote sound structure.

The objectives of Goal 2 become:

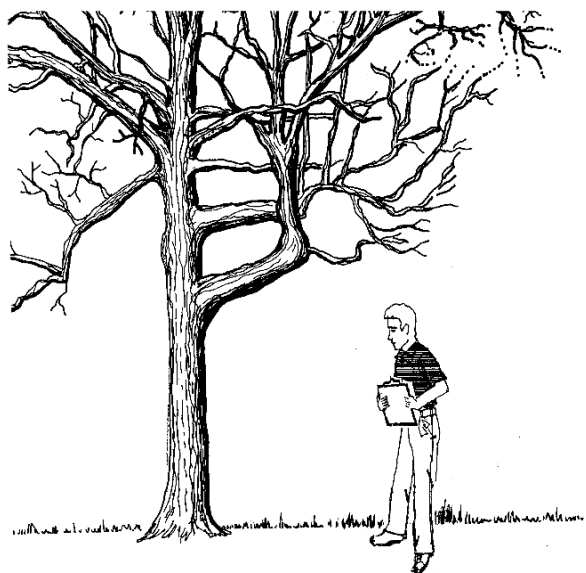
A. Tree mortality will be less than 1% of the population.

B. High value trees will be fertilized on a two-year cycle.

C. Pest populations will be monitored and treated as needed.

Specific objectives should be defined for all of the generalized goals.

Resource Inventory: This is a listing of resources available, such as people and equipment, as well as an inventory of your trees. There are several ways to accomplish a tree inventory. It may be performed with in-house staff, temporary summer employees, by contractors or by a combination of the three. Data accuracy, administrative problems and costs vary among options.



The type of data collected for each tree depends on your program goals. Typical options include:

- Location
- Tree/Site Parameters – Species, size, condition and interfering utilities
- Management Needs - Planting site classification, pruning requirements, insects and diseases, sidewalk damage and nutritional requirements.

For an inventory to be worth the time and expense of collecting the information, it must be updated and used as a management tool. The only way this can be practically conducted for populations of over 1,000 trees is through the use of computers. Tree management computer software is available for purchase or lease through a number of firms and universities. You may be able to develop a program in-house with the assistance of the college's computer department. It is best to have software developed prior to the inventory to avoid collection of excess information.

Management Plan: A management plan can be developed from the information collected in the inventory and based on the stated goals and objectives as listed in step one. It should be a plan of action, describing how your goals will be achieved using resources that are available. It may also show that the stated goals cannot be achieved with the resources on hand, which case alternative goals can be developed and a revised budget prepared.

A proactive plan should project work for three to five years. Since many factors will change, the plan will need to be periodically updated and projected to the future. Updating is relatively easy if your department is computerized. Computer summary reports can be prepared showing how much tree work remains to be completed, how much work has been completed, how much work each crew typically performs and how many requests have been received.

The management plan should clearly define work priorities as it is by following the priority system that work can most efficiently be accomplished. In general, there are three broad classifications of tree work priorities, Safety, Preservation and Aesthetics.

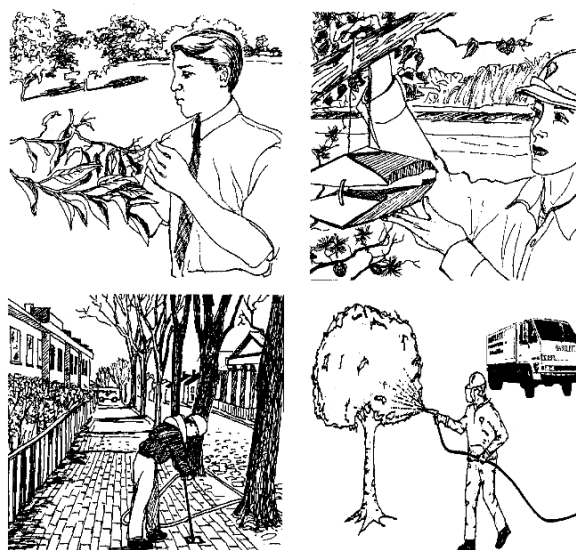
With a limited budget, money should be spent first on trees with potentially hazardous conditions. Obvious defects include dead trees, broken and hanging limbs and deadwood. More subtle hazards include lower limbs blocking signs or interfering with

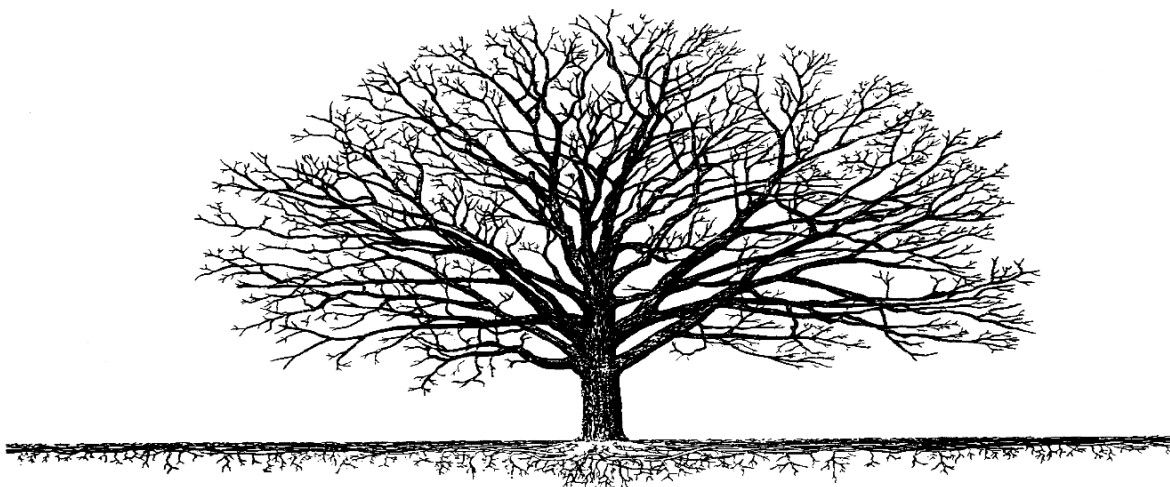
pedestrians or vehicles, trunk decay that has structurally weakened the tree, root rots that have decayed major support roots, V-crotches or split crotches, trees rubbing against buildings and windows and large trees in open areas that may attract lightning.

Hazardous tree work priorities also depend on the location of the tree. Maintenance can be delayed on trees in low traffic areas, away from sidewalks or buildings. Trees next to buildings and walkways must receive top priority for maintenance.

The second major consideration is preservation or tree health. This includes routine pruning to maintain health and structure, irrigating feature trees during droughts, fertilizing on a two to four year schedule, and maintaining insect and disease pests below damaging levels. Integrated pest management programs are recommended to prevent losses from pests while minimizing pesticide usage.

The third consideration is aesthetics. Maintaining a desirable natural form of a plant, pruning rather than shearing foundation plantings and maintaining open vistas are some consideration for aesthetics. An aggressive pest management program, which goes beyond plant health management and addresses cosmetic injury, is another consideration. Where budgets allow, planting unusual and rare species creates a campus arboretum.





Implementing the Plan: What is the best way for campuses to get tree work done? It usually involves a mixture of work done by in-house crews and contract crews.

In-house crews can address small tree pruning, less intricate removals, and possibly pest monitoring. If you are unsure of crew skill level, large tree service companies, other private firms or university extension agents can provide training. Quality tree service companies can also do work on small trees and shrubs.

Planting can be done in-house during slow times such as in the late fall, winter or early spring. This not only keeps crews busy but also gets planting done at the best time of the year for the tree.

In most instances, contracting out maintenance on large trees to tree service companies is most economical. Tree service companies have the necessary equipment and trained personnel to perform this work efficiently. In order to ensure quality work at the best possible price, consider the following:

- Write very “tight” (specific) bid specifications, which detail the quality of work desired. The National Arborist Association (NAA) and American National Standards Institute (ANSI) publish standard specifications for all phases of tree maintenance that is essential for developing bid specs.

- Pre-qualify contractors. Choose only established companies with a solid reputation. Make sure the arborist is certified by the International Society of Arboriculture.

- Ensure that the contractor carries sufficient liability insurance by requesting an insurance certificate.

- Ask for and check references, especially of similar sized college or commercial projects.

Record Keeping - Document all maintenance performed, including dates and persons/company performing the maintenance. Document all tree surveys and inspections, even those in which no problems/defects were encountered. Update tree inventories annually to reflect changes in the tree population and maintenance performed. This will form the basis for next year’s management program.

By assuming a proactive approach to tree care on campuses, work can be accomplished more effectively to provide healthier, safer trees at reasonable cost.