



Community Tree Care¹

Edward F. Gilman²

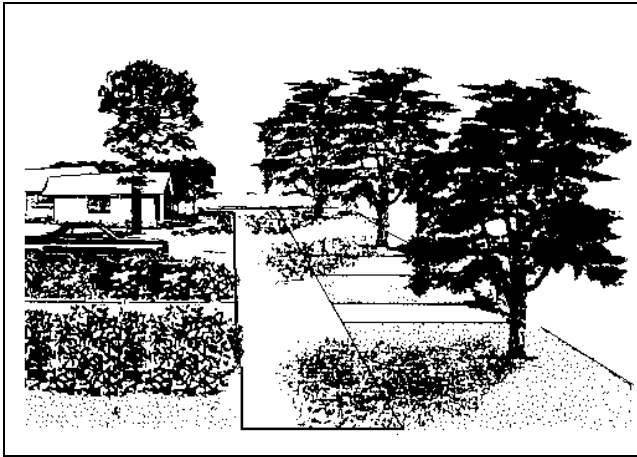


Figure 1. Trees need care in order to provide us with the benefits.

How many miles of roads does your community maintain? How many street and traffic lights are there? What is the condition of your community's bridges? The answers to such questions as these can usually be answered by the engineering department, but few communities know the condition of another part of the infrastructure - the trees! Trees are vital because they provide important benefits, and they can live to be very old. Fortunately, we are beginning to realize the value trees provide. See Figure 1.

Unlike trees in the rural forest, the trees in our communities need care to perform their function safely, particularly when they are young. Today, communities often hire urban foresters or arborists to direct the urban tree care program, but property

owners, citizens, tree care firms and municipalities must act together as stewards of community trees.

MANAGE YOUR TREES WITH A PLAN

You can only manage a resource if you understand it. The best way to understand the trees is to take an inventory. A tree inventory and management plan will help determine the number, condition, age, potential planting spaces and other information about your trees. Without this information you will only be reacting to problems in the urban forest, not managing it. The trees under a crisis management system will suffer from lack of directed care and long range planning.

SELECT THE CORRECT TREES

Many communities have developed lists of trees best suited to the area. The Florida Division of Forestry and Cooperative Extension Service Offices located in each county also offer tree lists. Arborists agree, municipalities should strive for diversity of tree species throughout the city. An accepted rule recommends no more than 20 percent of the trees should be from the same genus (for example oak) and no more than, 10 percent from the same species (for example live oak). For instance, a disaster could result if say 60 percent of the trees in a city were live oak and a devastating insect or disease were to strike this particular species.

1. This document is Circular 1019, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1991. Reviewed: February 1994.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

Table 1. A Selected List of Trees Suitable for Urban Areas in Florida*

North / Central Florida		South Florida	
Live Oak	Hornbeam	Tropical Almond	Jerusalem Thorn
Shumard Oak	Bald Cypress	Pongam	Bald Cypress
Southern Red Oak	Southern Red Cedar	Golden Raintree	Satin Leaf
Swamp Chestnut Oak	Red Buckeye	Silver Buttonwood	Canary Island Date Palm
Cabbage Palm	Hophornbeam	Green Buttonwood	Cabbage Palm
Soapberry	Sugarberry	Yellow Poinciana	Washington Palm
Sycamore	Blackgum	Queen's Crape Myrtle	Royal Palm
Swamp Tupelo	Formosan Sweetgum	Chinese Fan Palm	Pitch Apple
Dahoon Holly	Savannah Holly	Live Oak	Beauty Leaf
East Palatka Holly	Tree Ligustrum	Dahoon Holly	Sea Grape
Winged Elm	Canary Island Date Palm	Pink Tabebuia	Pigeon Plum
Florida Maple	Chinese Pistache	Mahogany	Gumbo Limbo
Southern Magnolia	Jerusalem Thorn	Calabash	Madagascar Olive
Chinese Elm		Tamarind	Wild Tamarind

* For a more complete list and for more information, contact your local Cooperative Extension Service Office or the Division of Forestry in your county.

Strive for diversity on a city-wide perspective; but do not plant a large variety of different trees on the same street. Instead, plant one section of the city (several blocks) with one species, and another with a different one. This allows the development of neighborhoods which will have an identity - the trees.

PLANT TREES IN THE RIGHT SPOT

Tree pruning around power lines costs several hundred dollars each year! To help reduce this cost plant only small maturing trees (less than 25 feet in height) below and within 25 feet of the line. Plant large maturing trees (greater than 25 feet in height) at least 25 feet (preferably 40 feet or more) from the lines. This will help keep utility bills in check and will provide more reliable electric service due to less tree interference with the lines.

Avoid planting large-maturing trees in areas less than 20 X 20 feet unless soil drainage is excellent. This small area will dwarf the tree so it will never reach its natural size, but it is much larger than what current standards provide. In a parking lot, trees grow much better when grouped together in several large planting islands than in numerous small islands distributed over the site. Allow at least 400 square feet of soil space for each tree.

TREE PLANTING MADE EASY

To allow for proper root growth into the landscape soil, the top of the root ball should be positioned even with or slightly above the soil surface, never deeper (Figure 2). There is no need to add organic matter or fertilizer to the backfill soil around the root ball. This addition will not help establishment unless the tree is planted in limestone rock, which is common in some areas of South Florida. Always spread a 3 inch thick layer of mulch over the root ball to conserve soil moisture and aid establishment.

WATER - THE BEST SOIL AMENDMENT

Irrigating recently installed trees is difficult, but essential. Many die or perform poorly from too little or too much water. To establish a tree in sandy, well-drained soil, about 3 gallons of water per inch of trunk diameter are needed almost daily in the first several months after planting. If soil drainage is poor, less is required. Trees larger than about 4 inches in diameter may benefit from nearly daily irrigation for up to a year to become established in well drained sand. Be careful not to overwater if your site is not well drained as is common in many urban areas. In these sites, cut back on the amount of water applied but don't change the frequency.

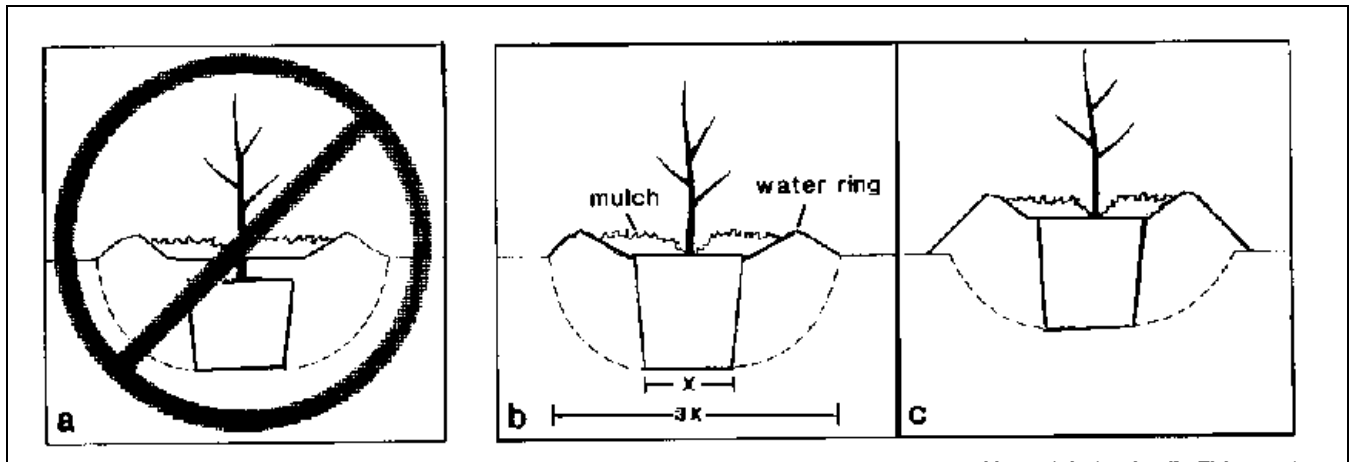


Figure 2. a) Never plant trees deeper than they were in the nursery. b) Plant even with the ground in well drained soil. c) In poorly drained or compacted soil, the top of the root ball should be slightly above the soil surface.

During droughts, established trees in restricted soil spaces (such as street trees) require more irrigation than those in open areas where root systems can develop their normal spread. Trees in these and many other urban situations are irrigated best with a micro-irrigation system which reduces runoff by applying water at a slow rate.

FERTILIZING

Fertilizer helps to maintain healthy trees. Fertilizing some urban trees can be difficult and best done by an arborist. It is best to spread fertilizer over the surface of the soil, but it can be injected 4 to 6 inches into the soil with specialized equipment. This technique helps reduce runoff on sloping ground and in compacted soils. Trunk injections and implants can be used to temporarily correct micronutrient deficiencies in trees which are over 4 inches in diameter if they do not respond satisfactorily to soil treatments.

Fortunately, fertilizing is usually not necessary for trees growing in or near lawns and adjacent to shrub beds treated regularly with fertilizer. This is because most of the tree's fine feeder roots are located near enough to the soil surface to utilize the fertilizer spread on the lawn and landscape beds. On the other hand, trees growing in confined soil spaces such as parking lot islands will benefit from a regular fertilization program.

Many trees respond well to a fertilizer containing nitrogen and potassium. At least 30 percent or preferably more of the nitrogen should be slow release. Palms and other trees may benefit from

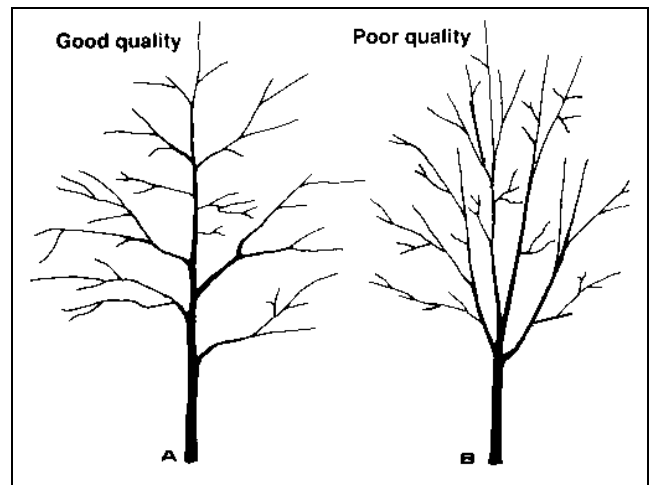


Figure 3. A) Shade trees should be trained to one central trunk. B) Large trees with several trunks (such as oaks) can become a hazard as they grow older.

additions of iron and manganese. Fertilizer mixes that contain weed killers should be used sparingly, if at all, within the root zones of trees because the weed killer could harm the tree.

Read and follow directions printed on the label before applying these products.

PRUNING

An important investment in urban tree care is in a systematic pruning program. The advantages include reduced costs each time the tree is trimmed, reduced service requests, improved safety and reduced liability, improved pest control and healthier trees. However, less than a third of cities in the southern United States prune trees.

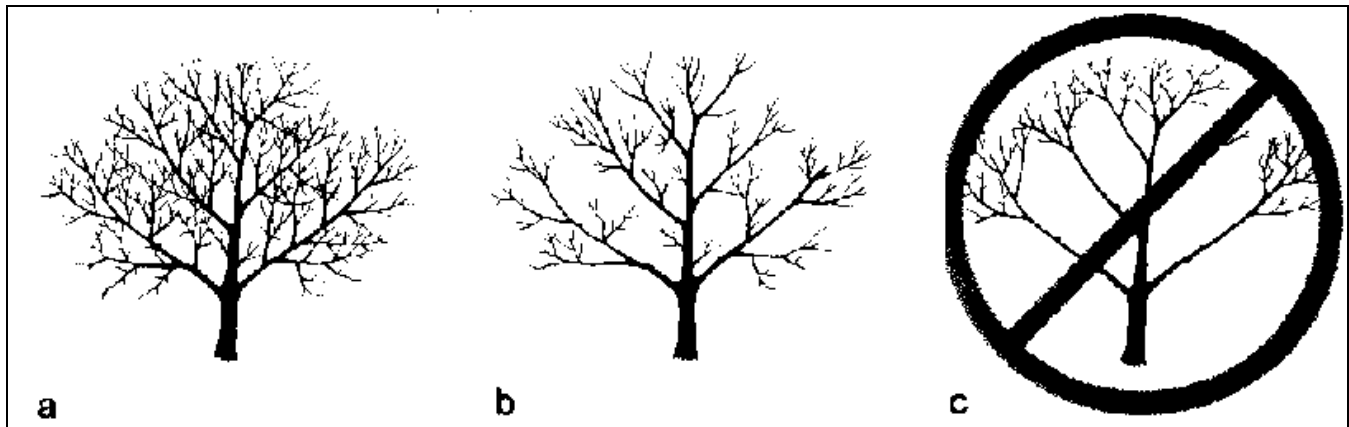


Figure 4. A) Trees benefit from regular thinning. B) Proper thinning reduces the length of some branches from all along the main branch. C) Improper thinning removes all interior branches.

Tree pruning is a special service which should be performed by professionals. City personnel often remove dead or dying trees, but safety and other forms of specialty pruning are best performed by a specialized crew, either in-house or contracted. Homeowners should only prune from the ground. Non-professionals should never climb a tree to prune because of the danger of falling or injury from pruning equipment.

How often - To prevent the need for pruning at planting, purchase quality shade trees. Trees should have one central trunk and branches spaced along the trunk, not clustered at one point (Figure 3). Prune 2 and 5 years after planting, then place trees on a 5 to 7-year pruning cycle.

Safety pruning - Remove immediately any broken or dead limbs. Have an arborist remove branches which are not well attached to the trunk. These potentially hazardous branches may not be apparent from the ground.

Preventing storm damage - Major storms taught us that trees which are properly and regularly pruned are damaged less in a storm than those not regularly pruned. A potentially damaging wind passes through trees which are thinned and trained to the appropriate structure, thus helping keep them intact in a storm (Figure 4).

Techniques - Never top a tree (Figure 6). Topping is the worst thing that you can do to a tree. Topping initiates decay in branches and makes the tree more dangerous than before it was pruned. It costs more in the long run, attracts insects, and is ugly. Topping does not help prevent damage during a storm.

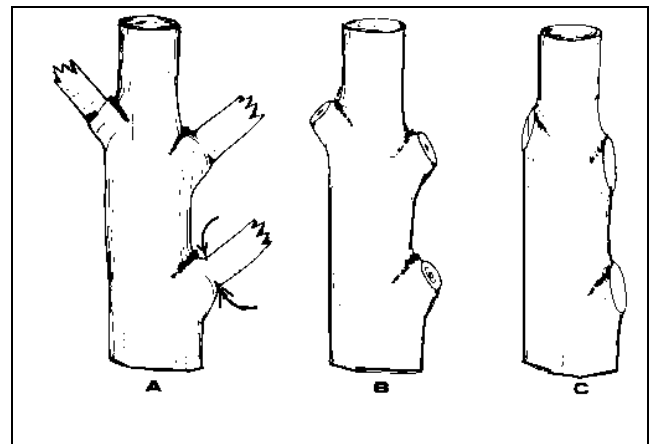


Figure 5. A) The arrows show where to remove the branch. B) Properly removed branches are cut just to the outside of the swollen collar at the base of the branch. C) Improperly pruned branches are cut flush with the trunk.

Pruning around power lines - Existing trees which were mistakenly planted under or those located close to lines can be directionally pruned to reduce the need for topping. Instead of simply removing the entire top of the tree which stimulates rapid regrowth, selected branches are removed to train the tree so it grows away from the lines. This can reduce future pruning requirements. This is a specialized technique requiring skill and training and should only be performed by properly trained professionals.

The method of branch removal has a large impact on tree health. Never remove a branch with a flush cut (Figure 5); instead, use a collar cut. The trunk is likely to decay or crack following a flush cut, making the tree unsafe.

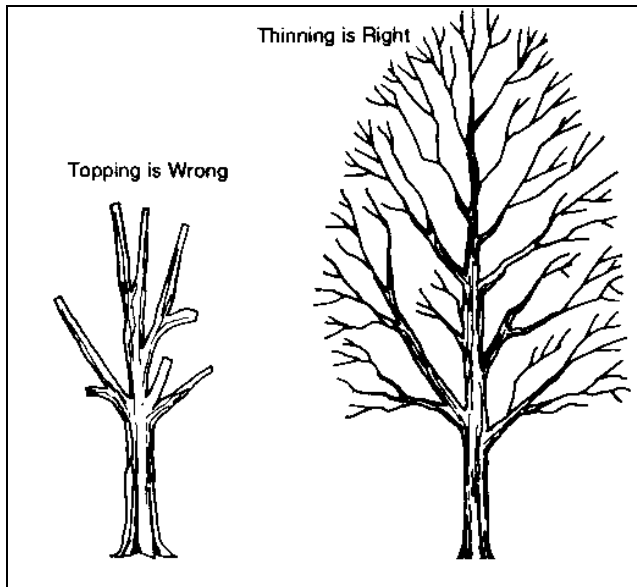


Figure 6. Never top a tree. Prune it to retain the natural shape.

MONITORING FOR INSECTS AND DISEASES

Generally, a well-cared-for tree will not succumb to lethal insect or disease problems. However, some insects and diseases (such as borers and hypoxylon canker) can be deadly to trees, especially if trees are under stress from another problem. Have a professional arborist or forester check the trees regularly as part of a preventive maintenance program to help keep these and other pests from becoming problems. As with people, the best way to ensure continued health is with preventive maintenance.

CONSTRUCTION AND TREES

Perceptions about tree roots are quite different from reality. Trees growing in urban areas seldom develop tap roots. In fact most roots are located within the top 12 inches of soil because this is where aeration, nutrients and moisture are abundant. The feeder roots grow just below the surface of the soil or mulch, or among the lawn and shrub roots. About 50 percent of the tree root system grows beyond the canopy, and the tips of the roots are three times as far from the trunk as the canopy (Figure 7). Construct a fence around the tree at the edge of the canopy (dripline) to reduce root damage during construction.

Due to the extent and shallowness of the roots, much of the root system is frequently removed from existing trees during construction of a home or other building. This causes decline and tree death in the years following construction. The best treatment for

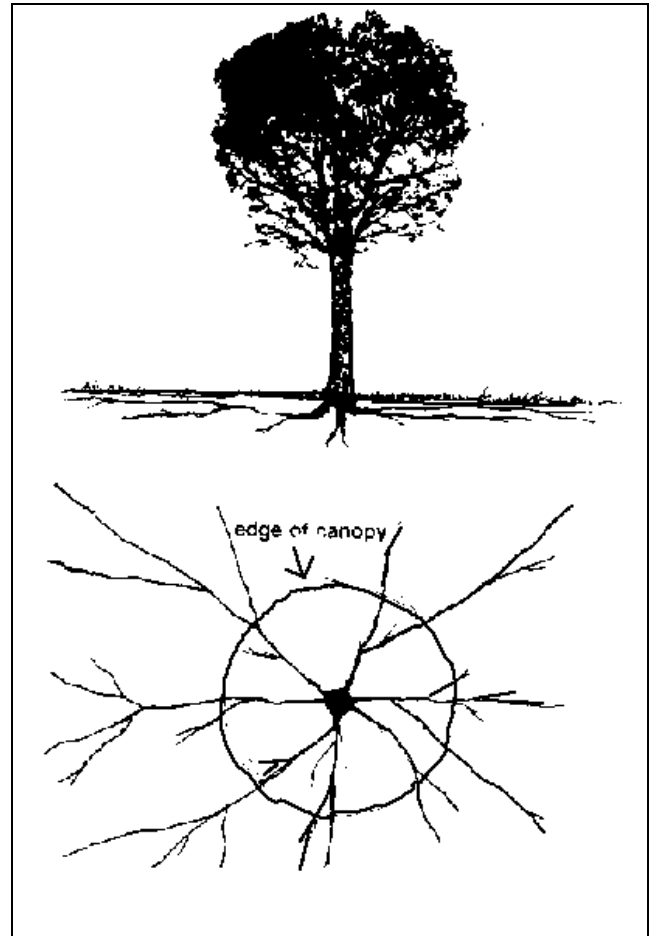


Figure 7. Roots spread to three times the edge of the canopy. Trees often decline following construction of a building because a large mass of roots was damaged.

trees damaged by construction is irrigation. Heavy fertilizing may make the problem worse by forcing undesirable top growth, which cannot be supported by the reduced root system.

HOW TO HIRE AN ARBORIST

Arborists make a career of caring for trees. Here are several tips for selecting an arborist:

- Avoid arborists who routinely top trees.
- Have more than one arborist look at the job, and get a written bid specifying work to be done. Ask for and check local references.
- Beware of an arborist who wants to remove a living tree. Removal of live trees is sometimes needed, but should be the last resort.

- Determine if the arborist is a member of the International Society of Arboriculture or the National Arborist Association. Membership does not guarantee quality, but lack of membership casts doubt on the person's professionalism.
- Ask for certification of personal and property liability insurance and workman's compensation. Then phone the insurance company to make certain the policy is current.
- Low price is a poor gauge of a quality arborist. Often, the better ones are more expensive because of more specialized equipment, more professional help and insurance costs.

ADDITIONAL RESOURCES

These resources are available at your local cooperative extension service office:

- Landscape Plant Selector - CDROM computer program
- Landscape Design Selector - CDROM computer program
- SS-ORH-903 - *Dispelling misconceptions about trees*
- Circular 853 - *Pruning landscape trees and shrubs*
- SS-ORH-905 - *Tree training and pruning*
- SS-SOS-909 - *Soil pH and landscape plants*
- Circular 489 - *A guide to selecting existing vegetation for low energy landscapes*
- Circular 948 - *Fertilizer recommendations for trees and shrubs in home and commercial landscapes*
- SS-ORH-02 - *Palm nutrition guide*
- SP 51 - *Florida insect control guide*
- SP 52 - *Florida disease control guide*
- Circular 922 - *Florida Guide to Environmental Landscapes*