Replanting Our Urban Forest
Lessons Learned From Hurricane Wilma

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The destruction caused by October's hurricane Wilma will be long remembered. One day a sub-tropical paradise the next day South Florida looked like a war zone. We have experienced a tree canopy loss of about 35% in our parks and around City properties. The tree canopy losses in our residential neighborhoods are also similar.

Several residents have asked me for a list of "hurricane proof trees". I'm sorry but there is no such list. What I can do is to list some of the trees that did better than average and list some of the trees that did worse that average. I will offer strategies for increasing the survivability of our new urban forest in future hurricanes. I hope this article enlightens you not only to consider the tree species, but also to consider the quality, site and aftercare of the trees you will be planting.

These are some of the trees that did better than average; live oak, Cuban and Indian tamarind, bald cypress, crape myrtle, slash pine, verawood (Bulnesia arborea), mastic (Sideroxylon foetidissimum), and Calophyllum. These are some of the palms that did better than average; date, sabal, Chinese fan, and roebelenii palms.
These are some of the trees that did worse than average; weeping ficus (Ficus benjamina), ear leaf acacia, yellow tabebuia, glaucous cassia, black olive, mahogany and green and silver buttonwood. These are some of the palms that did worse than average; washingtonia, royal and coconut palms.

The vast majority of our trees and palms were somewhere in the middle. We can have a greater success with all trees and palms if we first know what we are planting. Get the common and botanical name of the tree or palm that you are interested in. The person working in the garden center may or may not be knowledgeable about the mature height and spread of the tree, or the desirable planting site for the tree in question. You might have to spend a half hour on the Internet or reading a Florida gardening book to have these and other questions answered. This time will be well invested. Our trees and palms are long-term investments. Whatever species you decide on, make sure that it is Florida Grade #1 or better.

Trees with trunk and branch defects (co-dominant leaders with included bark, crossing branches and trunk decay) did worse in the hurricane than the same species of tree without these defects. Included bark occurs when two or more co-dominant leaders grow at a narrow "v" angle to each other and develop bark internally. This area never joins but instead develops a fissure. This area is likely to fail in a storm. (see photo #1)

The planting site is also very important. If your property is low and poorly drained then bald cypress or red maple is a good choice. If your property is high and dry then live oak

or gumbo-limbo is a good choice. Trees planted in the right site will usually be healthier and less prone to storm damage, especially blowing over.

Knowing the mature height and spread of your tree or palm is crucial in determining how far to plant from overhead power lines and your home or building. Florida Power and Light recommends that trees maturing at 20' to 30'be set back 20' from power lines. For trees that mature over 30' FP&L recommends a setback of 30' from power lines. For palms that mature above 20'their distance from a power line should be their typical species frond length plus 3'. Many of us endured weeks of no electric service after hurricane Wilma because trees and palms were indiscriminately planted under and adjacent to overhead power lines without regard to their mature height and spread. (See photo #2) There are several under story trees and palms and dozens of shrubs that mature less than 20' that are safe to plant under power lines. Please visit FPL.com/trees, for more information about planting the right tree in the right place.

Another site consideration is the space for the roots. Roots absorb water, nutrients and anchor the tree. If your planting area for that large maturing tree is a narrow strip or a small area, then don't be surprised when the tree blows over in a future hurricane. (See photo #3) Also reject any tree that has circling (girdling) roots. Trees with circling roots are prone to blow over.

Trees and palms planted in groups of 5 or more preformed better in the storm winds than trees and palms planted individually. These groupings of trees help to protect each other from storm damage, just as in a natural forest.

Some other important considerations for your newly purchased trees and palms are proper planting and staking, fertilization and a watering schedule for the first few months. Trees and palms recover from storm damage quicker if they are in good health. The year after your trees are established you should consider hiring an arborist /tree care professional if you are unsure how to, or unwilling to prune your young trees yourself. Developing trees with good structure and form through proper pruning practices is much easier and much less expensive when the trees are young. A tree with good structure and form will hold up better in strong winds. The arborist you hire should have a valid Broward County Tree trimmer License, occupational license and be insured for property damage, personal liability and workers compensation. Their membership in the International Society of Arboriculture, or one of the other professional associations is very desirable. Stay away from unscrupulous companies that hatrack, top and over lift trees. These are illegal forms of tree trimming and result in disfigured trees, decay and regrowth that will be more storm prone in the future.

I have a word of caution on a few tree species. The larger species of ficus especially Ficus benjamina are a menace on a typical residential lot. They mature into a very large dense and spreading tree with large, shallow and invasive roots. In hurricane Wilma they blew over easily and caused heavy damage. Unless your property is an acre or more stay away from this tree. Both the yellow tabebuia and glaucous cassia (Senna surattensis) blow over and break up easily in storm winds. These two species are better planted in

sheltered areas. Two good substitutions with yellow blooms are verawood and yellow geiger.

I hope you will decide to make 2006 the year to replant your own urban forest. If we plant wisely and provide the necessary after care, the trees will reward you for many years to come. Some of the benefits you will reap are; beauty, cooling shade, reduced energy bills, increased property values, decreased disruptions of electrical service, noise reduction, privacy and a habitat for our wildlife.