

Right Tree, Right Place

Healthy branching and open canopy trees properly placed using the minimum set-backs from utility lines and structures will help prevent avoidable power disturbances.

Planting the Right Tree in the Right Place includes knowing how big it will be at maturity. Do not plant trees that will grow more than 20 feet under power lines. Before you dig a hole, look up and remember to call 811 to locate underground utilities.



A Service of the Broward County Board of County Commissioners

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Broward.org/Naturescape

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5,000 copies of this public document were promulgated at a gross cost of \$1,750.00 and \$0.350 per copy, to inform the public about replanting after a windstorm.

Proper tree selection can help minimize storm damage.

Trees that perform well in high winds Large (35' +) Native Trees and Palms

Bald Cypress , <i>Taxodium distichum</i>
Dahoon Holly , <i>Ilex cassine</i>
Live Oak , <i>Quercus virginiana</i>
Royal Palm , <i>Roystonea regia</i>
Slash Pine , <i>Pinus elliotii v. densa</i>
Strangler Fig , <i>Ficus aurea</i>
Wild Tamarind , <i>Lysiloma latisliquum</i>

Medium (15' - 34') Native Trees and Palms

Black Ironwood , <i>Krugiodendron ferreum</i>
Sabal Palm , <i>Sabal palmetto</i>
Crabwood , <i>Gymnanthes lucida</i>
Fiddlewood , <i>Citharexylum spinosum</i>
Geiger Tree , <i>Cordia sebestena</i>
Krug's Holly , <i>Ilex krugiana</i>
Lancewood , <i>Nectandra coriacea</i>
Lignum Vitae , <i>Guaiacum sanctum</i>
Pigeon Plum , <i>Coccoloba diversifolia</i>
Roughleaf Velvet Seed , <i>Gottardo scabra</i>
Satin Leaf , <i>Chrysophyllum oliviforme</i>
Stopper species , <i>Myrcianthes fragrans</i> , <i>Eugenia v. axillaris</i> , <i>confusa</i> and <i>feotida</i>
Thatch Palm , <i>Thrinax radiata</i>
Willow Bustic , <i>Sideroxylon salicifolium</i>

Native Palms and Shrubs (up to 15')

Beautyberry , <i>Callicarpa americana</i>
Buccaneer Palm , <i>Pseudophoenix sargentii</i>
Cocoplum , <i>Chrysobalanus icaco</i>
Dwarf Yaupon Holly , <i>Ilex vomitoria</i>
Jamaican Caper , <i>Quadrella jamaicensis</i>
Marlberry , <i>Ardesia escallonioides</i>
Saw Palmetto , <i>Serenoa repens</i>
Walter's Viburnum , <i>Viburnum obovatum</i>

Non-native trees and shrubs that perform well in high winds

Crepe Myrtle , <i>Lagerstroemia indica</i> standard form and multi-trunk
Croton , <i>Codiaeum variegatum</i>
Flame of the Woods , <i>Ixora coccinea</i>
Jatropha , <i>Jatropha integrerrima</i>
Lychee , <i>Litchi chinensis</i>
Mango , <i>Mangifera indica</i>
Pygmy Date Palm , <i>Phoenix roebelenii</i>
Royal Poinciana , <i>Delonix regia</i>

Poor Performers Native Poor Performers

Gumbo Limbo , <i>Bursera simaruba</i> - FG
Laurel Oak , <i>Quercus laurifolia</i> - FG
Mahogany , <i>Swietenia macrophylla</i> - CODO
Seagrape , <i>Coccoloba uvifera</i> - CODO
Silver Buttonwood , <i>Conocarpus erectus</i> trained standard form - TH

Non-Native Worst Performers

Queen Palm , <i>Syagrus romanzoffiana</i>
Mexican Fan Palm , <i>Washingtonia robusta</i>
Any palms over 35'
African Tulip Tree , <i>Spathodea campanulata</i> - FG
Bishopwood , <i>Bischofia javanica</i> - FG
Black Olive , <i>Bucida buceras</i> - FG - CODO
Cassia , <i>Cassia surattensis</i> - TH
Carrotwood , <i>Cupaniopsis anacardioides</i> - FG
Ficus species - FG - TH - CODO
Hong Kong Orchid , <i>Coccoloba uvifera</i> - FG
Melaleuca , <i>Melaleuca quinquenervia</i> - FG
Pongam , <i>Pongamia pinnata</i> - FG
Queen Crape Myrtle , <i>Lagerstroemia speciosa</i> - FG
Silver Trumpet Tree , <i>Tabebuia caraiba</i>
Yellow Poinciana , <i>Peltophorum pterocarpum</i> - FG

FG = Fast growing and tend to be brittle.
TH = Top-heavy tend to fall over.
CODO = Codominant leaders, torn branches and split trunks.

Broward County Programs

NatureScape Broward was designed to promote the selection of native, drought-tolerant, low-maintenance landscapes. Canopy trees are a long-term investment in our environment – choose wisely. Consult the NatureScape website for an online native plant database and to learn more about the NatureScape program.





Broward.org/Naturescape

Water Matters Day is Broward's premier environmental event promoting water conservation, environmental stewardship, and the enhancement of water quality while creating attractive landscapes that are beneficial for native wildlife. It is held each March. Attendees visit at least twelve educational booths to "earn" native and drought-tolerant plants available as part of the event's tree and plant giveaway. We often provide hard-to-find rare and endangered native trees. Master Gardeners are available to assist attendees in picking the right tree for the right place.

Broward.org/Watmatters

Resources for Tree Care

Basic Tree Trimming Classes UF/IFAS Broward County Extension Education	Broward.org/Parks/Extension/CommercialHorticulture/Pages/TreeClassInfo or email Commhort@broward.org
An Illustrated Guide to Pruning by Edward F. Gilman	 hort.ifas.ufl.edu/woody/pruning
Proper Tree Pruning	Broward.org/Environment/Engineering/Pages/TreePreservationProgram
Florida Urban Forestry Council	FUF.org
ANSI A300 series of American National Standards for tree care operations.	ansi.org
The International Society of Arboriculture (ISA) has served the tree care industry for 90 years. Visit their website to find an arborist in your area or verify credentials.	isa-arbor.com
National Wildlife Federation	 Nwf.org

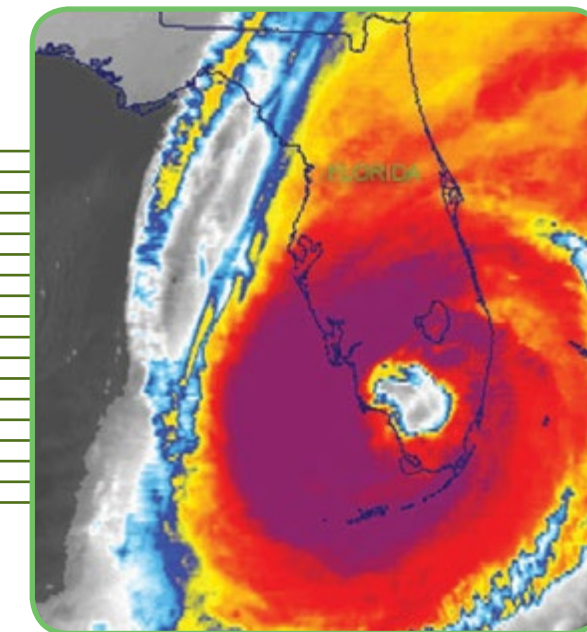
Resources for Tree Selection

Florida Native Plant Society (Broward Chapter) maintains a comprehensive list of native landscape species.	coontie.org
Natives for Your Neighborhood , a program of The Institute for Regional Conservation	RegionalConservation.org



Tree Placement in the landscape - trees planted in a group versus solitary standing trees are more storm resistant.

Gone with the Wind... Storm



Tree maintenance and replanting guide



Environmental Planning and Community Resilience Division



Gone with the Wind... Storm

"I feel certain that my property damage was reduced by keeping trees surrounding my home pruned by a certified arborist."

Alex Schore,
National Wildlife Federation Habitat Steward

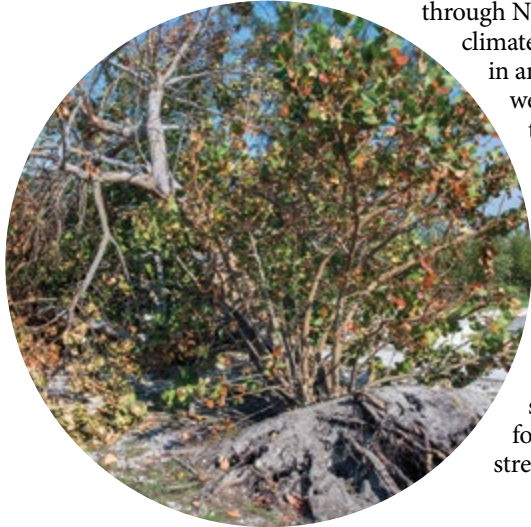
The Importance of Trees

There is no such thing as a hurricane-proof tree; no tree is guaranteed to stand up to hurricane-force winds or strong tropical storm winds, especially if it has been growing unpruned or was improperly pruned for many years. However, there are many trees that can endure high winds and resist loss or damage.

Trees provide us with shade, clean air and water, and wildlife habitat, reduce flooding and erosion, and much more. And as more communities look to become more sustainable and livable, tree canopies become increasingly important.

Hurricane season runs from June 1st through November 30th, and climate change may result in an increase in extreme weather events. So, the adaptability of trees and plants to these types of occurrences should be taken into consideration for home and urban landscapes.

Use this guide to select the best trees for homes, parks, streets, and urban areas.



After a Storm...

Assess damage before you remove a tree! A certified arborist can help you decide which trees can be restored and which should be removed. If you need to wait for help, keep the roots wet and covered with a tarp (not plastic) until a professional is available. If your trees cannot be saved, consider replacing them with native trees.

Native and non-native trees can be damaged by strong winds, but, natives usually fare better and rebound much faster.

Florida's growing population places enormous pressure on our native vegetation. It is important to use native trees in landscapes to preserve the state's natural resources. Native trees are slower growing, require less pruning, and provide quality food sources and habitat for wildlife. Birds such as the Cedar Waxwing (right) depend upon many native plant species for their survival.



About NatureScape Broward

NatureScape is about creating Florida-friendly landscapes that conserve water, protect water quality, and create wildlife habitat.



The NatureScape vision includes all Broward County residents and all types of properties - from homes to businesses to public facilities to schools. NatureScape encourages the use of native plants because they are uniquely adapted to grow in South Florida. Native plants require less watering once established, and provide sources of food and shelter for resident and migratory wildlife.

Failure Warnings

A tree's condition before a storm can pre-determine how well it will withstand winds. Tree structure, roots, soil, pruning and ongoing maintenance are factors to examine. Every hurricane is a new lesson, and we learn what works, and what fails. Tree damage, tree loss, downed power lines, and other problems are frustrating and inconvenient. But trees provide protection by reducing peak winds before they reach our homes.

For example, yellow tabebuia, *Tabebuia caraiba* (right) is native to South America and is shallow rooted.

In its native habitat, it grows in rocky areas where roots adhere to the rocks. In Florida's sandy soils, it does not have the added rock support and tends to fall over. Many non-native invasive trees used in landscapes are highly susceptible to damage in wind storms. Species classified as non-native and invasive are listed at fleppc.org and should not be used in landscapes.

Dense canopy, large root surface, and limited root space, especially in sandy soil, also contribute to uprooting.



Other Causes of Tree Failure

Codominant Trunks

The term "codominant" is used to describe two or more main stems or "leaders" that are about the same diameter and emerge from the same location on the main tree trunk. As the tree grows older, the stems remain similar in size without any single one becoming dominant. They are weakly attached and can split from the tree.



Circling Tree Roots

Trees with circling root systems are more likely to fail during a storm due to a lack of structural stability in the soil. Root-pruning corrections can be made on newly planted trees but established trees with circling roots need correction to ensure they survive to maturity. Root pruning on established trees should be done by a certified arborist who can evaluate whether or not the circling roots can be removed or if the tree should be removed entirely.



Top-Heavy Trees

Trees that grow multi-stemmed and are trained to grow as a standard (single leader) tree usually have top-heavy crowns on a non-supportive trunk. For example, silver buttonwood trees (right) with a single leader are uprooted in high winds; the multi-stemmed form is more wind tolerant.

Overlifting or "lion's-tailing" is bad! Half of a tree's foliage should be in the lower two-thirds of the canopy. By overlifting a tree, the center of gravity is pushed higher into the canopy. This makes the tree structurally unsound in a storm.



Pruning Tips

The time to prepare your trees is not the day before a hurricane or tropical storm. Proper and continuous pruning and maintenance will minimize risk of damage or loss.

The strongest winds are higher up, so large trees and tall palms are vulnerable to the strongest winds. Annual pruning and opening of the canopy to allow winds to pass through the tree will decrease the risk of uprooting and overthrowing of trees by wind.

Broward County Extension's Tree Trimmers Course is open to the public, and we highly recommend HOA board members and interested residents take this course.

Palms

The term "hurricane pruning" of palms is a misnomer. Pruning a palm to look like a pineapple for example is bad for the palm during its growth period and also during a storm. The fronds give protection to the vulnerable bud. If the bud at the central growing point of the crown is damaged, the palm can die.



Native sabal palms, royal palms (to 30 feet in height) and pygmy date palms are the most wind-resistant. Washingtonia and queen palms are not wind-resistant.

