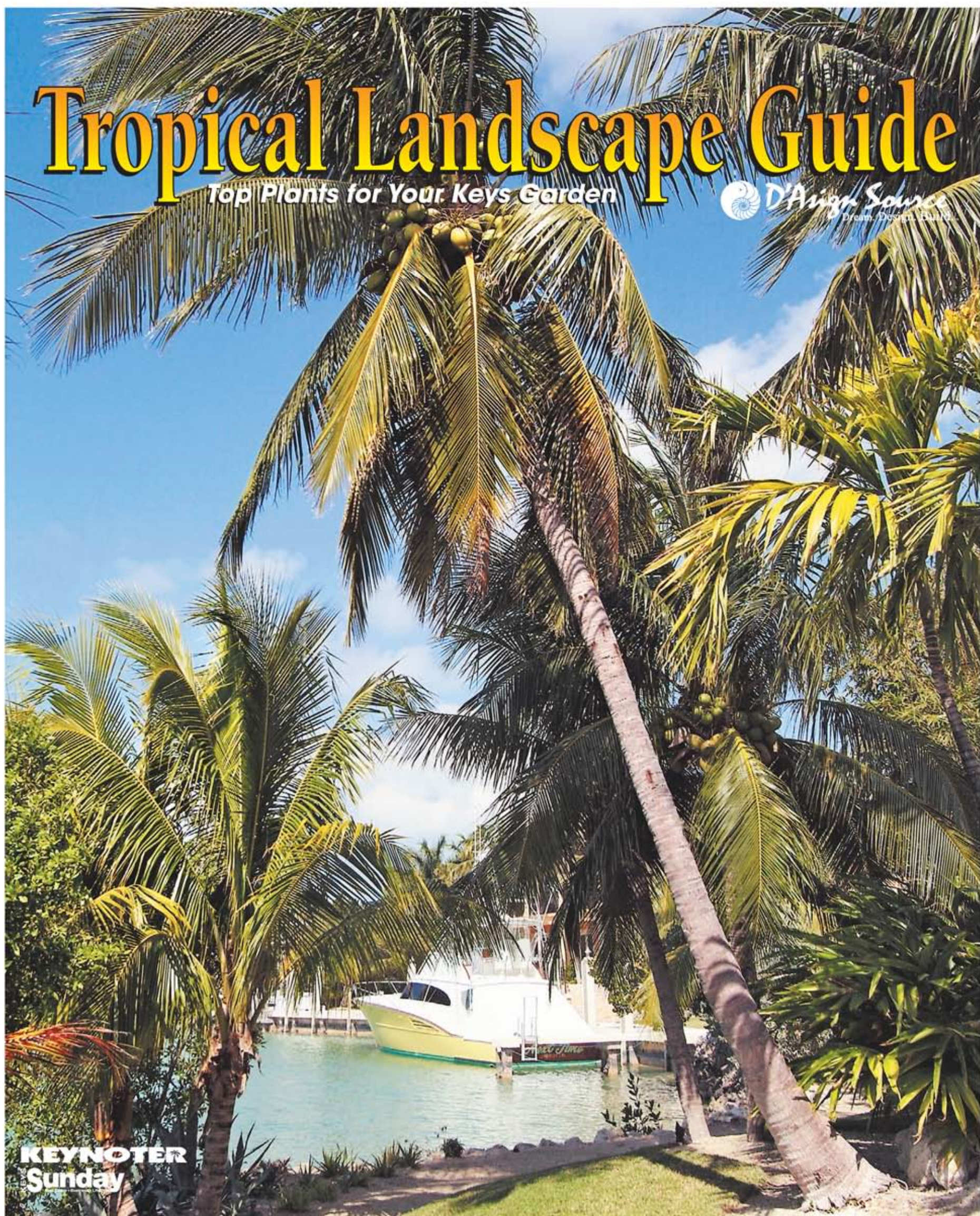


# Tropical Landscape Guide

Top Plants for Your Keys Garden

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Phoenix Dactylifera, the true edible date palm.

# Hurricane Tolerant Plants

By *NICHOLAS and FRANCO D'ASCANIO*

It started many years ago; not as a formal plan or study, but rather a casual observation of tropical plants. Interestingly, the Florida Keys are the only tropical location within the continental United States.

Since the early 60's D'Asign Source has landscaped at private homes, parks and schools in the Keys. At first we used only natives since that was all that was available and known. By the 80's we began to appreciate the other palms and plants that were suitable to our environment and thus began our diversification into whatever would grow in our hot, humid, and somewhat salty environment. Then came Hurricane Andrew.

Hurricane Andrew did not directly affect most of the Florida Keys, but it gave us ample opportunity to experience and note the devastation that this category 5 storm unleashed on South Florida. Since that time our interest and experience in palms has blossomed to include over 500 different species of palms and plants grown at our own nurseries in Palm Beach and Monroe County.

Fast forward to the 21st century, and hurricane alley. Just in the years 2004 and 2005 we have witnessed 8 hurricanes that

have ravaged the state of Florida. Now that we have a nursery in Palm Beach County, our palms and plants are spread out all over the state and we have had a chance to observe them in depth from Key West to Gainesville, which pretty much covers the majority of this lengthy state.

The storms in the last 25 years have varied from the inconvenience and mild damage of a category 1 with winds of 75 mph, all the way up to category 5. These monsters bring winds in excess of 145 mph, tornadoes, lightning and extensive salt water flooding resulting in the devastation of nearly everything in their path.

The data that follows is the culmination of 25 years of detailed notes and personal observations from the outdoor environments staff at D'Asign Source.

Our full report covers over 500 species of plants, which is far too many for the scope of this article, so we have limited this report to the top plants. We have rated each plant on its wind tolerance 0-5, and its salt tolerance 0-5; making the big winners perfect 10's,

Our thanks go out to Paul Craft President of the International Palm Society; Bob Ehrig, Scott Zona and the entire D'Asign Source outdoor environments team for their contributions and review of this article and accompanying data. 🌴

## Editor's Note:

This 8-page **Special Report** is based on years of field research by D'Asign Source landscape team. This data on tropical plant hardiness has been collected and analyzed since 1992's Hurricane Andrew devastated South Florida. In addition to the top plants you should have, you will learn more about salt tolerance, wind resistance and the most vulnerable native plants for Keys landscaping.

## Top 10 Hurricane Landscaping Tips

**Drought Tolerance:** There is a direct correlation of drought tolerance to salt tolerance. Typically the more drought tolerant the plant species the more salt tolerant it will be.

**Silver:** Plants with silver or blue waxy coatings typically endure salt spray very well.

**Maturity:** Size is important. Typically small plants of even highly tolerant plant species are not as durable as mature specimens. Except that extreme height is not an advantage

**Containerized:** Pot grown plants establish quicker than field grown and dug plants, typically resulting in a more durable plant in a shorter period of time.

**Health:** Plants in good condition handle all threats, much better than weaker plants.

**Irrigation:** After heavy amounts of salt spray and/or saltwater inundation, quick and thorough irrigation/

watering is strongly recommended.

**Buffers:** Planting buffers of wind tolerant plant species around more delicate plants will help protect them from wind damage. Plants in groups typically survive better than solitary plantings.

**Berming:** Increasing the height of the planting bed above the surrounding grade, will typically decrease the amount of salt reaching the roots minimizing salt damage.

**Natives:** Plants that are native to the Keys and other Caribbean coastal areas, typically endure wind and salt better than inland species.

**Balance:** Landscapes should be designed with durability and longevity in mind, but there are many beautiful plants that still deserve to be included in your garden even if they are not completely hurricane tolerant. Many shrubs and colorful plants are inexpensive and should be considered disposable, but well worth the effort and cost in between hurricanes.



Most tolerant native plant Buccaneer Palm: *Psuedophoenix sargentii* (left) and least tolerant native plant Golden dewdrop: *Duranta repens* (right).

### Most tolerant native plants

1. Buccaneer Palm: *Psuedophoenix sargentii*
2. Thatch Palms: *Thrinax morrissii*, *radiata* & *Coccothrinax argentata*.
3. Jamaican Caper: *Capparis cynophallophora*
4. Silver Buttonwood: *Conocarpus erectus* var *sericeus*
5. Lignum Vitea: *Guaiacum sanctum*

### Least tolerant native plants

1. Golden dewdrop: *Duranta repens*
2. Everglades Palm: *Acoelorrhaphe wrightii*
3. Florida Royal Palm: *Roystonea regia*
4. Cocoplum: *Chrysobalanus icaco*
5. Satin Leaf: *Chrysophyllum oliviforme*



*Hyophorbe verschaffellii* the Spindle Palm (left) and *Copernicia macroglossa* Cuban Petticoat Palm (right) at Villa Paradisio.

### Wind Tolerance

*How durable is a plant to high winds.*

**Scale:0-5** (5 being extremely high, 0 being very low)

- 0** Cannot handle any wind without leaf damage.
- 1** Withstands moderate wind with minor damage.
- 2** Withstands moderate winds with no damage. Moderate winds are winds from 40-75 mph.
- 3** Withstands high winds with minor damage.
- 4** Withstands high winds with moderate damage.
- 5** Withstands high winds with very little damage. High winds are winds over 75 mph.

### Salt Tolerance

*How durable is plant to salt spray and immersion.*

**Scale:0-5** (5 being extremely high, 0 being very low)

- 0** Cannot endure salt air.
- 1** Cannot endure salt spray.
- 2** Endures salt spray with minor damage.
- 3** Endures salt spray with no damage.
- 4** Endures salt water immersion with minor damage.
- 5** Endures salt water immersion with no damage.

### Coastal Hurricane Tolerance

*Combination of wind and salt tolerances.*

**Scale:0-10**



Chamaerops humilis above, note hurricane damaged plants surrounding this European Fan Palm. Copernicia ekmanii, the Wax Palm shown center and Dictyosperma album, the Hurricane Palm left.

## Top 10 Palms (These represent top palms out of 227 species observed. Palms in general rate between 3 and 10 for hurricane tolerance.)

<b>Scientific Name</b>	<b>Common Name</b>	<b>Country of Origin</b>	<b>Type</b>	<b>Size</b>	<b>Wind Tol.</b>	<b>Salt Tol.</b>	<b>Hurricane Tol.</b>
Brahea armata	Blue Hesper Palm	Mexico	Palm	Medium	5	5	10
Chamaerops humilis	European Fan Palm	Mediterranean	Palm	Medium	5	5	10
Cocos nucifera maypan	Coconut Palm	Hybrid	Palm	Large	5	5	10
Copernicia ekmanii	Wax Palm	Haiti	Palm	Medium	5	5	10
Dictyosperma album furfuracea	Princess Palm	Mauritius	Palm	Medium	5	5	10
Latania loddigesii	Blue Latan Palm	Mascarenes	Palm	Medium	5	5	10
Phoenix dactylifera	True Date Palm	Africa	Palm	Large	5	5	10
Pseudophoenix ekmanii	Cherry Palm	Dominican Republic	Palm	Medium	5	5	10
Pseudophoenix sargentii	Buccaneer Palm	Native	Palm	Small	5	5	10
Pseudophoenix var navasona	Wine Palm	Navasa Islands	Palm	Medium	5	5	10



Cycads are some of the oldest plants in existence, dating back to the time when dinosaurs roamed the earth.

## Top 5 Cycads (These represent the top cycads out of 28 species observed. Cycads in general rate between 7 and 10 for hurricane tolerance.)

<b>Scientific Name</b>	<b>Common Name</b>	<b>Country of Origin</b>	<b>Type</b>	<b>Size</b>	<b>Wind Tol.</b>	<b>Salt Tol.</b>	<b>Hurricane Tol.</b>
Encephalartos horridus	Eastern Cape Blue Cycad	South Africa	Cycad	Small	5	5	10
Encephalartos trispinosus	Bushmans River Cycad	South Africa	Cycad	Small	5	5	10
Encephalartos princeps	Kei Cycad	South Africa	Cycad	Small	4	5	9
Encephalartos ferox	Zululand Cycad	South Africa	Cycad	Small	4	5	9
Dioon edule	Silver Dioon	Mexico	Cycad	Small	4	5	9



Conocarpus erectus var. sericeus, left, can be hedged or grown into a tree. Manilkara zapota, center, is one of the very few fruit trees that can tolerate hurricane conditions. Nolina recurvata, right, known as the Ponytail or Elephant Foot Palm is not really a palm at all.

## Top 5 Trees (These represent the top trees out of 42 species observed. Trees in general rate between 2 and 10 for hurricane tolerance.)

<b>Scientific Name</b>	<b>Common Name</b>	<b>Country of Origin</b>	<b>Type</b>	<b>Size</b>	<b>Wind Tol.</b>	<b>Salt Tol.</b>	<b>Hurricane Tol.</b>
Conocarpus erectus var.	Silver Buttonwood	Native	Tree	Medium	5	5	10
Jacquinia keyensis	Joewood	Native	Tree	Small	5	5	10
Manilkara zapota	Sapodilla	Caribbean	Fruit	Large	5	5	10
Nolina recurvata	Ponytail	Mexico	Tree	Medium	5	5	10
Pandanus utilis	Screw Pine	Madagascar	Tree	Large	5	5	10



Aechmea, left, vibrant blooms last for months; Codiaeum variegatum, center, come in variety of colors; Alcantarea imperialis, above, one of the largest and most durable bromeliads.

## Top 5 Ornamentals (Ornamentals in general rate between 1 and 6 for hurricane tolerance. Ornamental plants should be considered disposable because they are an inexpensive way to add color to the landscape.)

<b>Scientific Name</b>	<b>Common Name</b>	<b>Country of Origin</b>	<b>Type</b>	<b>Size</b>	<b>Wind Tol.</b>	<b>Salt Tol.</b>	<b>Hurricane Tol.</b>
Alcantarea imperialis	Purple Bromeliad	South Africa	Flowering Shrub	Small	4	2.5	6.5
Aechmea blue tango	Blue Tango Bromeliad	Hybrid	Flowering Shrub	Small	4	2	6
Breynia disticha	Snow on the Mountain		Shrub	Medium	3	3	6
Codiaeum sp.	Croton	South Asia	Shrub	Small	4	2	6
Cordyline sp.	Ti Plant	Indo-Pacific	Shrub	Small	3	2	5



Succulents offer extreme drought, salt and wind tolerance.



## Top 5 Succulents (These represent the top succulents out of 20 species observed. Succulents in general rate between 8 and 10 for hurricane tolerance.)

<b>Scientific Name</b>	<b>Common Name</b>	<b>Country of Origin</b>	<b>Type</b>	<b>Size</b>	<b>Wind Tol.</b>	<b>Salt Tol.</b>	<b>Hurricane Tol.</b>
Adenium obesum	Desert Rose	South Africa	Flowering Shrub	Small	5	5	10
Agave americana	Century Plant	Mexico	Shrub	Medium	5	5	10
Agave desmettiana variegata	Century Plant	Mexico	Shrub	Small	5	5	10
Yucca rigida	Blue Yucca	Mexico	Shrub	Medium	5	5	10
Yucca rostrata	Beaked Yucca	North America	Shrub	Medium	5	5	10



In general, salt water is the biggest reason most native plants are vulnerable to the environmental conditions found in tropical areas.



## 5 Least Tolerant Natives (These represent the most vulnerable natives out of 42 species observed. Natives in general rate between 2.5 and 10 for hurricane tolerance.)

<b>Scientific Name</b>	<b>Common Name</b>	<b>Country of Origin</b>	<b>Type</b>	<b>Size</b>	<b>Wind Tol.</b>	<b>Salt Tol.</b>	<b>Hurricane Tol.</b>
Duranta repens std.	Golden Dew Drop	Native	Shrub	Medium	3	3	6
Acoelorrhaphe wrightii	Everglades Palm	Native	Palm	Medium	3.5	2	5.5
Roystonea regia	Florida Royal Palm	Native	Palm	Large	3.5	1.5	5
Chrysobalanus icaco	Cocoplum	Native	Shrub	Medium	3.5	1	4.5
Chrysophyllum oliviforme	Satin Leaf	Native	Tree	Small	2	2.5	4.5



Strelitzia reginea, left, is considered the most beautiful tropical flower in the world; Plumeria, center, has colorful and very fragrant flowers; Cassia bahamensis, right, is also known as the golden shade tree.

## Top 5 Most Colorful (These represent the top colorful plants out of 38 species observed. These in general rate between 2 and 10 for hurricane tolerance.)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Country of Origin</u>	<u>Type</u>	<u>Size</u>	<u>Wind Tol.</u>	<u>Salt Tol.</u>	<u>Hurricane Tol.</u>
Adenium obesum	Desert Rose	South Africa	Flowering Shrub	Small	5	5	10
Crinum asiaticum	Queen Emma	Tropical Indo-Pacific	Flowering Shrub	Small	4	5	9
Strelitzia reginea	Orange Bird of Paradise	South Africa	Flowering Shrub	Small	5	4	9
Cassia bahamensis	Bahama Cassia	Native	Tree	Medium	4	4	8
Plumeria	Franji Pani	Naturalized	Flowering Tree	Medium	3	4	7



Coccothrinax argentata, left, is slow to grow but very tough; Serenoa repens silver, center, is a small clumping palm; Zamia floridana, above, is a small cycad that is very useful as ground cover.

## 10 Best Natives (These represent the top natives out of 42 species observed. Natives in general rate between 2.5 and 10 for hurricane tolerance.)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Country of Origin</u>	<u>Type</u>	<u>Size</u>	<u>Wind Tol.</u>	<u>Salt Tol.</u>	<u>Hurricane Tol.</u>
Conocarpus erectus var.	Silver Buttonwood	Native	Tree	Medium	5	5	10
Jacquinia keyensis	Joewood	Native	Tree	Small	5	5	10
Pseudophoenix sargentii	Buccaneer Palm	Native	Palm	Small	5	5	10
Uniola paniculata	Sea Oates	Native	Ground Cover	Small	5	5	10
Coccothrinax argentata	Florida Silver Palm	Native	Palm	Small	5	4	9
Guaiacum sanctum	Lignum Vitae	Native	Tree	Small	4	5	9
Serenoa repens (silver)	Saw Palmetto	Native	Palm	Small	5	4	9
Thrinax morrisii	Key Thatch Palm	Native	Palm	Medium	5	4	9
Thrinax radiata	Florida Thatch Palm	Native	Palm	Medium	5	4	9
Zamia floridana	Coontie	Native	Cycad	Small	5	4	9



Villa Splendida, pictured above, 2006 Florida's BEST Platinum award for Builder's Overall Project and Sunshine, pictured right, 2006 Florida's BEST Platinum award for Landscape Architecture.

*Once again, D'Asign Source proves you can be  
beautiful on the outside too!*

