

# ***Hurricane Horticulture***

## ***Wind, Rain, Storm Surge***

Rodger Keller  
1500 4th St.  
Key West, FL 33040

### ***Preparation***

***Wind protection; Stake ALL plants, For trees use old rubber hosing with steel cable inside. Use cable clamps to fasten to metal pipes driven into the ground. Rebar stakes can be driven in to the ground in a wide triangle around a small tree or bush to stabilize the cabling of valuable plants from winds that will attack from all directions.***

***Prune back tops and thin out overly lush growth. Reduce the height and width of old tall trees by 1/4 to 1/3. Remove crossed branches and establish a balanced branch structure. It is better to prune back before the storm and save trees rather than try and clean up the mess afterwards.***

***Rain; Take inside or under cover Orchids, Bromeliads, Begonias and all other valuable potted plants. Store them up upon tables chairs or any other elevated stable area. Do not store on the floor or ground. Use them to weight down other furniture. Try to protect them from the destructive winds. Expect horizontal rain and ocean spray to blow from all directions. Don't try to save rain water. It will be heavily contaminated with sea salt and debris after the storm. Water plants before putting them away. It may be several days before you are able to get them out again into the light and rewater them. Be ready for a lack of previous shade after the storm. The storm will strip leaves, rip off branches, take down trees and carry away shade houses. Lack of appropriate shaded areas is a major problem after a severe storm.***

***Storm Surge; This is the most devastating aspect of a severe hurricane in our area. Flooding sea water, pushed by high winds flows like a river down streets into yards and homes. I will***

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***leave home damage to the contractors and just deal with our gardens. The nature of dirty storm churned sea water is quite different from the clear calm surface waters surrounding our islands. This storm surge is saturated with coral powder from the waves pounding the reefs and shallows surrounding us. This gray, milky storm water also has a heavy load of microscopic sea life scoured from the reefs and seagrass beds . Along with tons of seagrass, dead fish and all types of debris this animal vegetable and mineral soup smothers plants and sinks into the ground, permeating all of the soil, down to the salt water table.***

***The high salt and mineral content of the storm surge actually dehydrates (pulls water out of) the leaves stems and roots submerged in it. It is this dehydration that actually kills the plants. The leaves and roots collapse and die, often becoming shriveled and shrunken in the process.***

***Flowing storm surge also washes away mulch and plants alike, exposing the roots of shrubs and trees to the drying sun and wind. The older the plant and the larger its roots the better chances it has of survival. Large roots have a thick bark that protects them from the penetrating salt water. The thin younger roots may all die off, but new roots may push out from the still living older protected roots. This can not occur until the salt concentration in the soil has been lowered by heavy rains or watering. This is why so long a time often elapses after the storm before new growth starts to sprout on surviving vegetation.***

***Rain is the best remedy for storm surge but barring that, watering can help a good deal. Leaching out the salts is best done in a two step process. Water the soil heavily and then let it stand for a period of 20 minutes to 1/2 hour. Next water heavily again. The first watering will take a time to dissolve the***

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***minerals in the soil. The second watering pushes the salt laden water down toward the salt water table deeper in the ground. Don't repeat this process until the soil begins to dry out again. Roots of plants need Oxygen and air. without leaves and the oxygen rich sap moving down the stems to the roots, these roots are barely staying alive. The soil must be allowed to dry somewhat to take in air and aerate the root area. This also discourages wet molds from moving in that may attack the still living roots and kill the plant.***

***Do not be too quick to clean out the dead looking shrubs and trees left after a storm. Some of them may not start to grow for 2 to 3 months after the flooding.***

***Cleaning up after; Get the potted plants out of hiding and into what shade is left. Don't put them on the salty grimy ground or cement. Only after things are thoroughly washed off, can you safely place the pots back on previously flooded surfaces. Otherwise the salty grime will wick its way up into the pots of your carefully protected plants.***

***Dispose of all potting soils and mediums that got soaked in salt water. This may be spread on equally salty ground beds. Never use it on potted plants.***

***Remulch exposed roots. Follow leaching watering procedures. Prune back twiggy growth and branches that are truly dead. They should be dry and brittle, sometimes even shrunken and grooved. When you hit flexible, green, sap filled wood stop pruning further and hope life will return. Only after the plant has leafed out and put on a couple of months of new growth for them to establish new feeder roots, then you can prune the plant to shape it and establish a balanced branch system. Slowly over months shape the growing plants. Many trees and shrubs will***

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***resprout only from the lower branches and trunks. Prune off the dead tops and only later thin out the overly crowded new shoots. Plants need leaves and new growth to regrow a new feeder root system to replace the one destroyed by salt water. Let them grow for a while before pruning out new growth.***

***Badly storm damaged trees can sometimes be cut back drastically and pulled or propped back up into an acceptable position. Cover the roots with fresh soil and mulch. Water these repositioned trees often. A giant Bonsai type tree can be created. This giant Bonsai tree can be an aesthetic as well as a horticultural treasure for years to come. Yanking out savable old trees and replacing them with much younger nursery stock may seem like a quick fix, but in the long run, it is going to take years for the new material to gain the size and distinctive style of the older tree.***

***Applying chelated Iron or sequestrate Iron may help plants recover in our very limy coral based soils. A heavy mulch of acidic barks and woods like cypress mulch and pine bark help by leaching tannic and humic acids down into the soil. These organic acids may bind to some of the salts in the soil and make it a better place for root growth.***

***Hold back on fertilizer application until new growth is well under way. The dead seahlife has added nitrogen to the soil and some phosphorus and potassium has been left behind by the flooding as well. Too high a soluble salt level in the soil is its major problem, and fertilizer only contributes to this soluble salt load.***

***Superthrive may be used in its much diluted form to try and stimulate new growth. If the plants do not have new feeder roots***

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*established the forced out shoots will only wither and die. This will only use up the last stored food reserves of the plant ending its chances of recovery. I try and wait until some signs of new growth are evident before applying Superthrive.*

*When weeds start to grow over ground beds it MAY be time to replant them. Be cautious. Portulaca or Purslane, pigweed as well as many of the shoreline native plants are very salt tolerant. They can germinate and grow in soil that has far too much salt for more delicate garden plants like impatiens and petunias. The seeds of shoreline plants will have been brought into your garden by the invading storm surge. Be prepared for some new and tenacious invaders.*

*Repot all potted plants that were exposed to any salty rains or wind blown spray. Orchids, Bromeliads and Begonias all will need repotting into fresh, non salty growing mediums. Potted plants may be fertilized as usual after repotting.*

*The Bad News; What the salt killed in my garden.*

*Allocasia, Tarrow cultivars , a few did survive*

*Angel's Trumpet, Brugmansia hybrids*

*Anthuriums, all types*

*Avacado, young one*

*Banana, one dwarf survives out of four*

*Bay Rum, young tree*

*Begonias, several types*

*Bougainvillea, some died, some lived, there may be varietal differences*

*Bromeliads, all that got exposed to any salt.*

*Caladiums, most died, one lived*

*Canna lillies, most died, a few survived*

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***Clerodendron, starburst, big old plants, all dead***

***Coleus, gone***

***Crotons, young plants gone, old large plants at West Martello are coming back***

***Datura, Devils trumpet, all gone, but seeds germinated in salty soil grew and are in bloom faster than weeds.***

***False Tamarind, medium tree, gone***

***Fern, fishtail type gone***

***Gardenia, looked good after storm, then died. one at W.M. lived in pot***

***Gingers, some started to come back then died.***

***Heliconias, gone***

***Jasmine, sambac gone***

***Key Lime, small tree, gone***

***Lechey, young tree, gone***

***Mango, young tree potted gone***

***Night jasmine, gone***

***Scavola, half flower, washed away***

***Schefflera, arbericola dwarf types , all gone***

***Sunflower, tropical type, potted gone***

### ***THE GOOD NEWS***

***These plants survived the storm surge***

***African Milkweed, big silver leaves, came back fast is now covered with monarch caterpillars***

***Agaves, several species, survived total submerging in surge***

***Aloe, two types survived unscathed***

***Amaryllis, potted plants submerged, survived and bloomed***

***Bird of Paradise, both the white and orange survived although wind damaged***

***Cacti, several types, Cereus and Mammillaria survived well***

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***Crinum lilies, survived and blooming***

***Cordyline, Tie plants,, wind beaten but coming back***

***Desert Rose, Adeniums, survived total immersion***

***Dracaenas, marginalis and lemon lime***

***Euphorbias, lactea cultivars survived crown of thorns types did not***

***Frangipani, survived ,slow to recover***

***Hibiscus, most survived, variegated leafed ones came back first***

***Hoyas, good survival***

***Madagascar Rubber Vine, survived in ground and in pot***

***Palms, Coconut, Christmas, Areas and bamboo all came through***

***Sanseveria, several types survived***

***Seaside mahone, medium tree, top lost but came back fast***

***Scheffelera, octopus tree, large old tree, came through well***

***Sweet Potato, Blackey and tricolor both survived in pots***

***Syngonium, a few types coming back , but slow***

***Two Books that are of help.***

***“Waterwise Florida Landscaping” from Florida’s water management districts***

***“Stormscaping” by Pamela Crawford***