

# READY FOR THE NEXT HURRICANE?

M. Patrick Griffith

**BAD WEATHER IS RARE IN SOUTH FLORIDA. BUT WHEN IT IS BAD, IT IS CATASTROPHIC.**

**GEOGRAPHY.** Stretched between the balmy waters of the Atlantic and the Gulf, and pointed at the Caribbean, South Florida's famous climate draws some great visitors—remember the Miami conference? But our geography also brings the occasional unwelcome guest—the humid breeze and warm seas bear hurricanes every summer.

**HISTORY.** 1992's Hurricane Andrew set back every garden in Miami. Montgomery Botanical Center's Master Plan was also developed that year—Andrew's *tabula rasa* strongly motivated fulfilling that new vision. But 2005 was the year that broke records—most named storms (28), most hurricanes (15), costliest storm ever (Katrina), and strongest Atlantic Hurricane measured (Wilma). That crucible of a season forged our preparedness standards.

**READINESS.** Before storm season, three areas need special attention:

*Team* - We assign each person to a "Prep Team" responsible for assigned facilities and collections preparation. Contact info is updated, and a phone tree distributed.

*Collections* - While there is no way to shield trees from weather, good arboriculture throughout the year reduces wind load. This is reviewed carefully in the early summer, before the peak of storm season. We double and triple label our Nursery collections—bury a tag in the container.

*Facilities* - We inspect and test shutters and generators before storm season.

**PREPARATION.** When a storm is on the way:

*Team* - Careful watch of forecasts are communicated thoroughly to everyone. Reminders about safety are kept in focus. Tasks and closures are scheduled to also allow the team to prepare their homes and families.

*Collections* - Nursery plants are moved under glass and between structures as space allows. Containers are pushed close together to brace each other.

*Facilities* - Tasks are ordered by labor required: quick tasks (e.g., roll-down shutters) are done first, escalating to more difficult tasks (bolt-on storm panels) if the forecast warrants them. Thus, if the threat diminishes, stowing the preparations is faster.





*top left:* *Syagrus botryophora* collections the day after Hurricane Wilma (October 25, 2005). These were grown from seed collected in 1994, in Bahia, Brazil, and were thus eleven years old in this photo. Note the visible lumber and straps; some of these palms had been staked upright following Hurricane Katrina, which hit Miami on August 25, 2005.

*bottom left:* Montgomery's palm collections, pictured here on a calm day, thrive in the warm, humid climate of South Florida.

*top right:* Composite map of hurricane tracks, 1980-2005 (Public domain image adapted from US National Oceanic and Atmospheric Administration data). Hurricanes visit Florida from all directions!

## **RESPONSE.** After a hurricane:

*Team* - Communication is increased. The phone tree brings the team on site when conditions become safe. Coordination meetings are doubled and expedited—all staff assemble at daybreak and again after lunch to ensure cohesion and clarity. Strict safety reminders are emphasized; it is often said that the clean-up phase is the most hazardous part of a hurricane.

*Collections* - Restoration begins with assessment and initial triage to find the most vulnerable and salvageable plants. Debris clearing and plant rehabilitation then proceed in parallel as safety conditions allow.

*Facilities* - Safety inspection proceeds first, followed by generators and needed repairs.

**LEARNING.** Katrina (August 25) and Wilma (October 25) hit Miami exactly two months apart. This created an opportunity to develop better readiness and responses. Our long-standing, robust, systematic response protocol required detailed assessment before starting rehabilitation work. While that method was perfectly suited for prior, less destructive storms, the scale of Katrina's damage made that assessment days-long, imperiling vulnerable collections. The team modified those methods prior to Wilma, to allow a shorter initial assessment, followed by parallel walkthrough and rehabilitation. If I may update the Scout Motto: "Be Prepared, *But Be Flexible.*"

**DISCOVERY.** We cherish our plant collections. So, systematic assessments were critical to see how those plants were affected, and detailed notes were retained. While it was painful to lose 10 percent of our collection that year, those notes led to some interesting science. Through careful statistics, we now know that Caribbean palms are all highly evolved to resist strong winds, while South American palms are more variable—a finding that makes perfect sense when you view the geography of hurricane tracks.

**ADVICE.** Disasters affect people. A wise man once said, "Take care of the mission, and take care of the team." Getting the garden back in shape is critical, but so are patience and consideration—and nothing is more important than safety. Careful readiness, efficient, well-scheduled preparation, and safe response work give the team time to do the same at home.

**FINALLY:** Have a way to make coffee for the team, especially if the grid is down for a full month. ☕

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