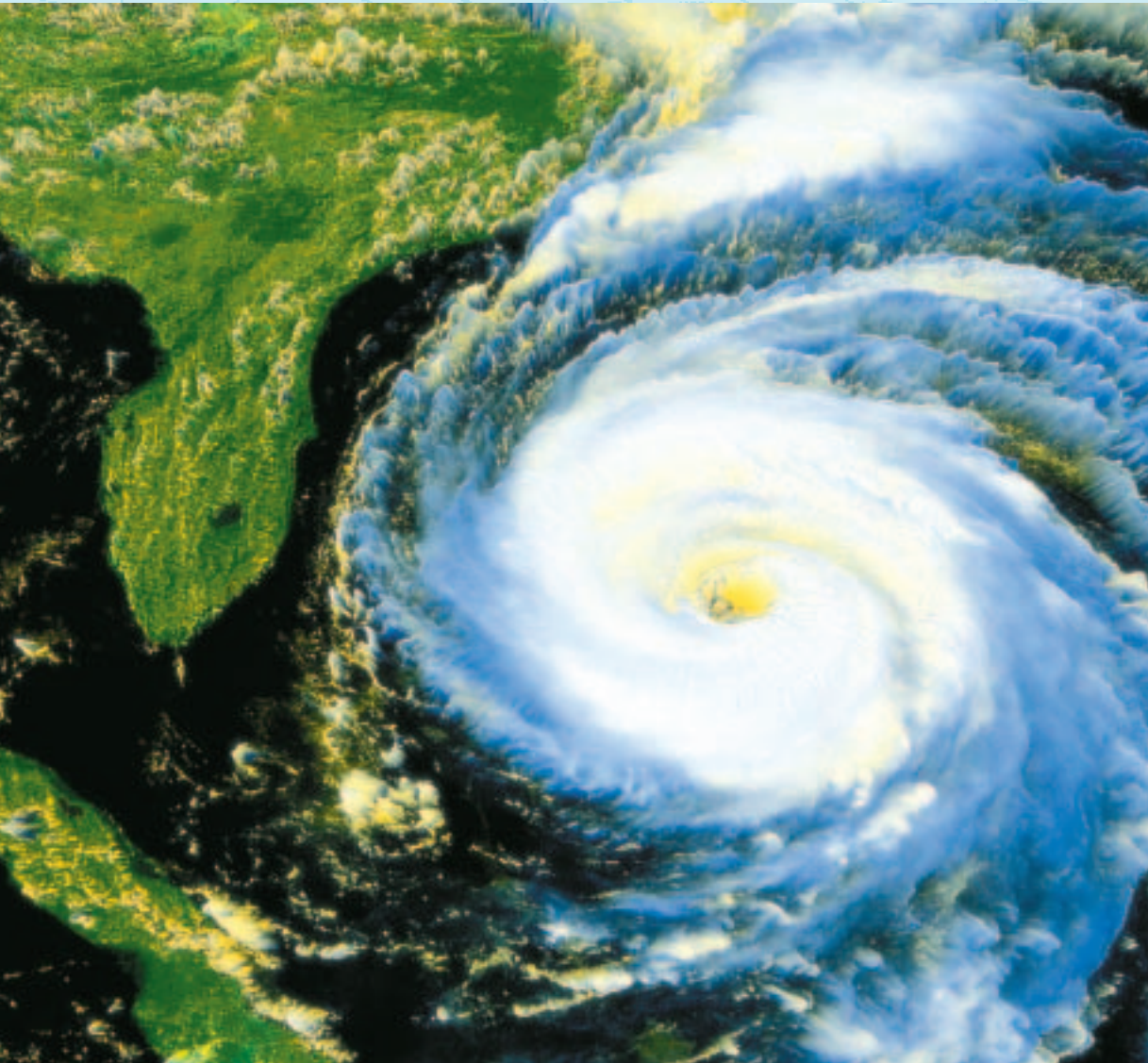




# HURRICANE MANUAL FOR MARINE INTERESTS



# HURRICANE GUIDE FOR MARINE INTERESTS

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## GENERAL HURRICANE INFORMATION

South Florida is one of the most vulnerable areas on the United States coast for a hurricane. In 1992, Hurricane Andrew, the most powerful storm in Miami-Dade County, registering as a Category V, and the third strongest in U. S. history with sustained winds in excess of 155 mph, came ashore and destroyed many marinas in south Miami-Dade County. Hurricanes that exceed 110 mph can be expected to occur in south Florida about once every 10 years. The population of Miami-Dade County continues to increase bringing many boaters with little hurricane experience.

The wind will be the biggest enemy. There are several things to do to help minimize its overwhelming effects. Knowing how to secure your boat and where to keep your boat are the two primary concerns. The most important thing to remember is **DON'T WAIT UNTIL THE LAST MINUTE!** Being prepared in advance by having a plan and practicing your plan will help protect your life and property.

### SEVERE WEATHER TERMS TO KNOW

**SMALL CRAFT WARNING** When a hurricane moves within a few hundred miles of the coast, small craft operators must take precautions and not venture out into the open ocean.

**TROPICAL STORM WATCH** Tropical storm conditions are possible in the specified area of the watch, usually within 36 hours.

**TROPICAL STORM WARNING** Tropical storm conditions are expected in the specified area of the warning, usually within 24 hours.

**HURRICANE WATCH** Hurricane conditions are possible in the specified area of the watch, usually within 36 hours. During a hurricane watch, prepare to take immediate action to protect your family and property in case a hurricane warning is issued.

**HURRICANE WARNING** Hurricane conditions are expected in the specified area of the warning, usually within 24 hours. Complete all storm preparations and evacuate if directed by local officials.



Hurricanes are classified by wind strength known as the **Saffir/Simpson Scale**:

CATEGORY	WIND	SURGE
I	74-95 mph	4-5 ft.
II	96-110 mph	6-8 ft.
III	111-130 mph	9-12 ft.
IV	131-155 mph	13-18 ft.
V	156 + mph	19 + ft.

## NATURE OF HURRICANES

A hurricane is a violent tropical cyclone, with winds of 74 mph or more, which spiral counterclockwise around a relatively calm center known as the “eye” of the storm. At full strength, hurricane winds can gust to more than 200 mph as far out as 20 to 30 miles from the eye. Winds of 39 mph and greater can extend 200 miles or more in advance of the hurricane. Hurricane season is June through

November of each year. During this time, Miami-Dade County is susceptible to severe weather, notably the hurricane. Damages from a hurricane can include any or all four damage elements produced by a hurricane: tidal surge, wind, wave action, and rain.

## **Wind**

Dangerous winds are common with hurricanes. Flying debris is one of the greatest threats caused by hurricane wind. The wind force from a hurricane will throw your boat into obstructions or propel objects into it. Wind will also suspend electrical power, phone lines, gas, fresh water supplies and transportation. Tornadoes are also possible as a spin-off from the hurricane's winds.

## **Storm Surge**

The greatest danger from hurricanes is from the storm surge. Storm surge is a rise in tide caused by the hurricane as it approaches the coast. It is higher than normal tide, especially in a particular area such as Biscayne Bay. In south Biscayne Bay, a hurricane may cause a tidal height of 15 feet or more above normal. Hurricane conditions can cause a negative tide, as well, forcing the water level to go far below normal.

## **Wave Action**

Wave action is another damaging effect on boats. Factors that determine the amount of wave action include the speed of the wind, the depth of the water and the amount of open water (i.e. fetch, which gives waves an opportunity to build).

## **Rainfall**

Rainfall varies with the hurricane size, forward speed and other factors. More than 23 inches of rainfall in 24 hours has been recorded to be associated with some hurricanes. Possible hazards from excessive rainfall might inhibit access to and from your boat refuge location, cause boat flooding, enhance currents, and increase volumes in canals and rivers.

## **PRELIMINARY ACTIONS PRIOR TO HURRICANE**

Planning, preparation, and timely action are the keys to protecting your boat from hurricanes or any severe threatening weather. Each boat owner has a specific plan applicable to their type of boat, the local boating environment, and severe weather conditions likely to occur in their region, and the distinctiveness of safe havens and/or other plans for protection. The following preparations and precautionary suggestions are intended for you to know what to do if a hurricane or severe weather occurs. While these suggestions may not be applicable to everyone in all instances, common sense and good judgment should prevail.

Experience has proven that boater hurricane preparedness education and preparation can reduce loss of property for both the boat owner and others. The Florida Sea Grant Extension Program and other agencies/organizations contributing to this publication can assume no responsibility for actions taken by boaters.

**About 25% of hurricane fatalities are boaters trying to secure vessels in worsening storm conditions. Many of the deaths attributed to Hurricane Hugo (1989) and Hurricane Andrew (1992) were boaters who drowned while trying to save their boats, or were riding out the storm in their vessels. The suggestions and information offered in this manual are intended to preserve life and property; however, it is the boater's and/or marina owner's responsibility to take precautionary measures to protect property when disaster threatens.**



## GENERAL PRECAUTIONS FOR BOAT OWNERS

- 1. Develop a plan.** Before hurricane season, make arrangements to secure your vessel in the marina, if permitted; remove your boat from the threatened area, or take your boat to a previously identified hurricane refuge. Prepare a checklist in advance of things needed to secure vessel. Assemble equipment and supplies and keep them together. Arrange for a friend to carry out your plans if you are out of town during hurricane season.
- 2. Practice your plan.** In advance, do a trial run of your plan to check accessibility, depth of water, bridges, locating aids to secure lines or drop anchors, and obstructions to navigation. During the event of a hurricane, there may be less time than normal to accomplish preparations due to boat traffic/bridge openings, lines at retail stores, and boat owners' preparation of their homes and/or businesses. Practice your plan on a sunny weekend day.
- 3. Keep all records with you.** Have a copy of the vessel's registration number, description, and location where it was secured. Have an inventory list of equipment, copy of insurance policy, and lease agreement with the marina or storage area. Take a video or photograph of boat and how it was secured prior to the storm. Have a copy of telephone numbers of appropriate authorities, i.e., harbor master, Coast Guard, insurance agent, National Weather Service, etc.,

and keep them in your possession. You may need them when you return to check your boat after the hurricane.

- 4. Maintain an inventory** of both the items removed and those left on board. Items of value should be marked so they can be readily identified.
- 5. Check your contract or lease** with the marina or storage rental facility. Know your responsibilities and liabilities with your boat and the marina or facility.
- 6. Before a hurricane threatens, analyze how you will remove valuable equipment** from the boat and how long it will take so you will have an accurate estimate of the time and work involved. When a hurricane is pending, and after you have made anchoring or mooring provisions, remove all movable equipment such as canvas, sails, dinghies, radios, cushions, biminis and roller furling sails. Lash down everything you cannot remove such as tillers, wheels, booms, etc. Make sure the electrical system is cut off unless you plan to leave the boat in the water.

## WHERE TO KEEP YOUR BOAT IN A HURRICANE

### ***Securing the Boat at Home***

If your boat will be stored at home, most likely the safest place for it is inside your garage or any other secure building. A carport can even offer some protection. Another option might be to consider storing your boat in a temporary warehouse for protection. If your boat must be kept outside, choose a location away from trees and power lines.

There are several possible options to take depending upon the type of boat and trailer. One possibility is taking the boat off the trailer, setting it on the ground and filling it a 1/3 to a 1/2 full of water. Secure your boat using 1/2" or 5/8" line or heavy chain tying to the most secure objects available, including screw anchors secured in the ground.

## ***Trailerable Boats***

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1. If your boat is left on the trailer in a “safe” place, lash your boat to the trailer and place wooden blocks between the frame members and the axle inside each wheel. Place blocks under the trailer frame and secure the trailer to the ground.
2. Secure your boat with heavy lines to fixed strong objects as indicated previously. Try to pick a location that allows you to secure it from four directions because hurricane winds rotate and change direction. Trailerable boats should be moved away from waterfront areas. Take into consideration that storage on the leeward side of a building may reduce damage from wind borne debris. Tying down a boat near or under a tree is not a good idea.

## ***Non-Trailerable Boats in Dry Storage at a Marina***

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1. Determine the safest, realistic, obtainable haven for your boat and make arrangements to move your boat
2. Never leave the boat in davits or a hydro-lift.

## ***Non-Trailerable Boats in Wet Storage***

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The owner of a large boat, usually one moored in a berth, has three options to select from, each of which requires a different strategy, to protect their boat.

1. Secure the boat in the marina berth.
2. Moor the boat in a previously identified area that offers greater safety.

3. Haul the boat out of the water and put it on a trailer.

## ***Boats Remaining in a Marina Berth***

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1. Double and triple all lines. Secure lines in different lengths and tautness. The longer spring lines should be the tightest and the shorter mooring lines should be the loosest. Plan that the lines will stretch considerably under tidal surge and wind, possibly allowing the boat to strike piers and pilings. Attach lines high on pilings to allow for tidal rise or surge. Make sure the lines will not slip off the pilings. Make sure the pilings are properly installed and strong. For floating docks, it is best to check with your marine facility for other procedures.
2. Chafing gear should be used for all lines. A water hose or fire hose can be used to protect lines from wear at contact points. Install fenders to protect the boat from rubbing against the pier, pilings and other boats.
3. Assess the attachment of primary cleats, winches, and chocks. They should have substantial back plates and be secured by adequate sized bolts, if possible, ones made of stainless steel.
4. Make sure batteries are fully charged. Keep bilge pumps in working order. Turn off or disconnect all electrical devices except the bilge pumps.
5. Remove all valuable equipment such as canvas, sails, dinghies, radios, cushions and lash down all you cannot remove, such as tillers, wheels, booms, etc.



6. Seal all openings (air conditioning duct tape is good) to make boat as watertight as possible. **Do not leave your boat on davits. Secure the boat on land and remove drain plugs.**
7. Do not stay aboard after you have secured the boat, leave the area and seek shelter.

## SPECIFIC PRECAUTIONARY INSTRUCTIONS FOR BOAT OWNERS

Marine facilities, marine related service organizations and insurance companies consider it reasonable to expect boat owners to take the time and effort to plan actions needed to protect their vessel.

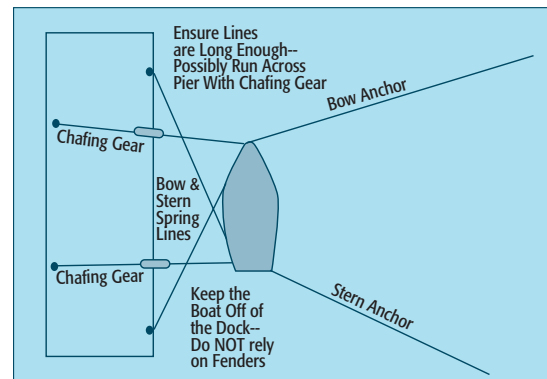
The following should be considered in planning to protect your vessel in a hurricane. Arrangements should be made in advance. If you will be out of town, a Captain or caretaker should be designated to carry out your plan.

### **PRIOR TO HURRICANE SEASON**

1. Make sure your vessel is in good condition. This includes the hull, deck, hardware, rigging, ground tackle, machinery and electronics. Absentee owners should arrange for a boatyard haulout or a supervised inspection of the vessel prior to, and in preparation for, the hurricane season. This includes charged batteries, operable bilge pumps, and all equipment secured.
2. Enhance the watertight reliability of your boat, both above and below the water line. Seal windows, doors and hatches if necessary, with duct tape. Shut seacocks and cap-off or plug all above water fittings.
3. Inspect the vessel's deck hardware in light of planned mooring arrangements. Assess the size and structural attachments of the primary chocks, cleats, bits, bollards, and winches. These high load/high stress points should have backing plates and be secured with the largest bolts they will accept.

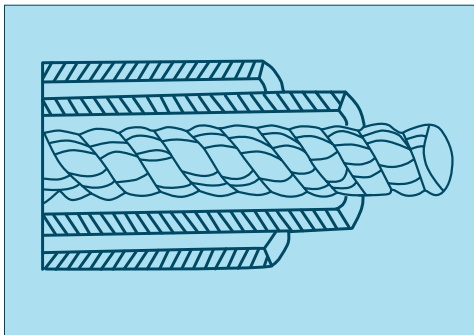


4. Avoid chafing mooring lines. Double neoprene hose chafing gear works well.
5. Storm moorings, at the dock or otherwise, should have double or triple lines. The second set of lines should be a size larger than the normal lines, including spring lines at the dock.



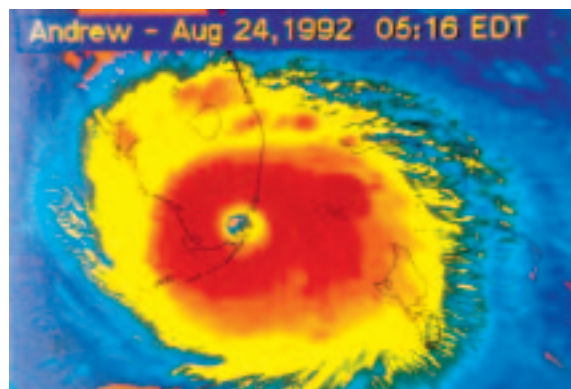
*Moorings alongside a dock or barge. Note—Do not allow line to pull sideways on cleat, always lead line along the cleat by use of chocks.*

- Purchase necessary materials in advance such as additional lengths of mooring lines, screw anchors, fenders, fender boards, chafing gear, and anchors. These items may not be readily available during the hurricane season or just before a hurricane.



*For a super system, if your chocks are large enough, fit a second larger-diameter hose (2" neoprene hose) around another hose (1" neoprene hose) that fits snugly to the line. Drill holes in both hoses, and use cord to tie them securely to the line. In a pinch, you can use a single hose.*

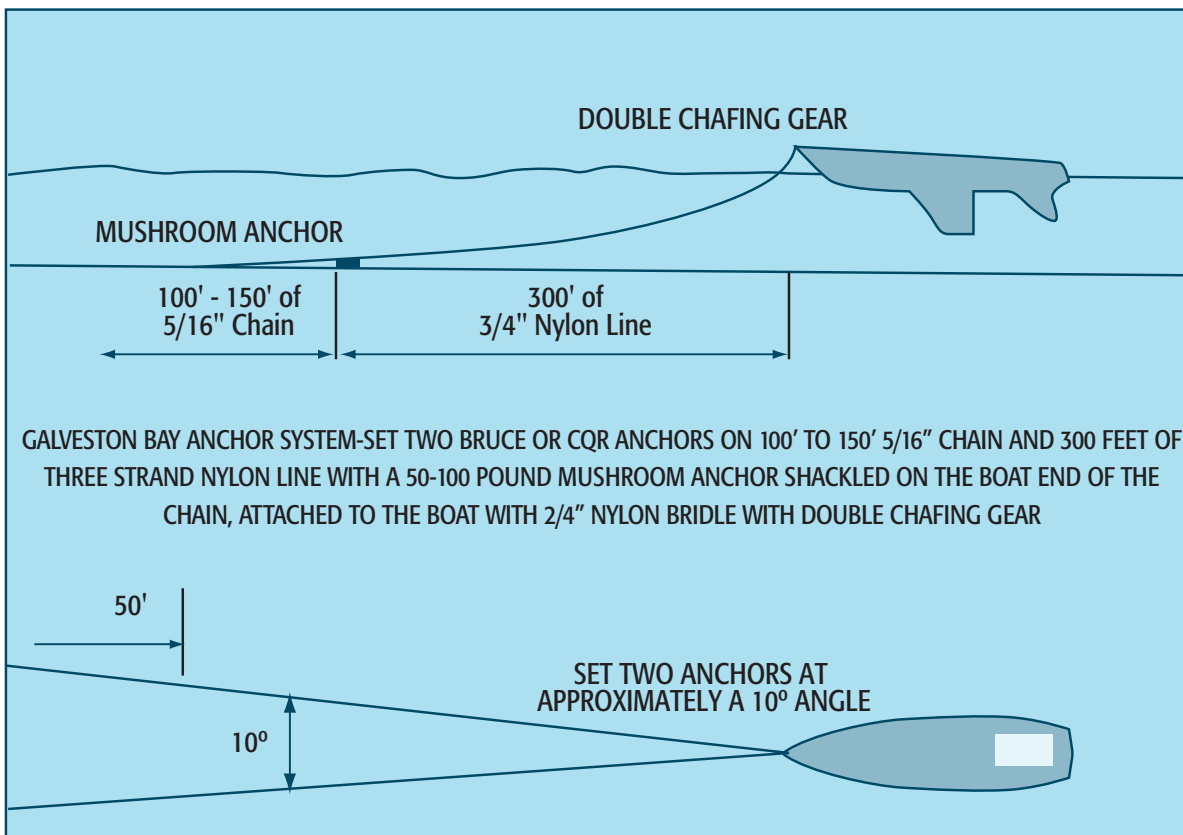
- If the vessel will be unattended during the hurricane season, it should be hauled to a storage yard, warehouse, or on its trailer, if trailerable. Arrangements for wet storage at a protected dock, mooring or marina is another alternative.
- Develop an inventory list of all vessel equipment. Note items to be removed from vessel. Keep copies of the inventory list on board and ashore. Make a video of inventory and how vessel is secured.
- For wet berthing locations, ensure that seawalls and docks are sound, mooring bits and cleats are secure, dock pilings and dolphins are in good condition.
- If you are using a storm mooring, have a diver inspect the chain, swivel, tackle and attachment points annually.
- At private berthing and dock facilities in residential areas, check with neighbors, and other vessel owners in the area. Coordinate safety and mooring arrangements plans.
- At marina facilities find out from the dock master or marina management personnel what their hurricane plans and/or procedures are for vessels left at the facilities.
- Check with your local marine and law enforcement agencies such as city police and county sheriff departments, state marine patrols, the Coast Guard and its auxiliary power squadron for local plans. This is particularly important in areas with heavy concentrations of yachts. Due to early closure of bridges, it is best to plan well in advance to move your vessel. This is especially important in areas like South Florida where access to inland protected rivers and canals is limited by bridges that may be permanently closed for land evacuation routes when a hurricane warning is issued.
- If your plan calls for moving your vessel from its current berthing location to an inland waterway location, know your route, vessel navigation requirements at different tides and the restrictions along the route such as bridges and channels. This is especially important for sailboats.
- Practice your planned vessel movement, including an actual visit to the alternate dock or hurricane mooring/anchoring location. If rental of a protected dock or slip space is required, make arrangements well ahead of time.
- Be sure that your family or key crew members know your hurricane plan or arrangements and that everyone who may be involved knows how to contact you, your designated representative or agent. Captain, crew members, caretakers, neighbors, and your insurance agent should be provided with your home and business addresses and phone numbers.

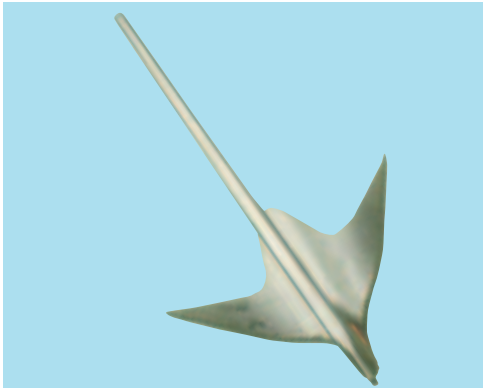




17. Key your plan on quick response. Moving a vessel, stripping sails, derigging, and anchoring in 35 mph winds is extremely difficult. **It is impossible in 45 mph winds and sea conditions.**
18. Prepare your hurricane plan in writing and make copies of it. Keep a copy on the vessel and one at home. Extra copies should also be made for marina or yacht club facility which may require you to have one on file with them.

19. Make sure your insurance policy is current. Read the policy thoroughly. There is quite a bit of helpful and advisory information in the policy relative to what the vessel owner should and should not do if there is a storm or hurricane related loss or damage to the vessel. Understand the coverages, exclusions and your duties as a vessel owner.





*Bruce Anchor*



*Mushroom Anchor*



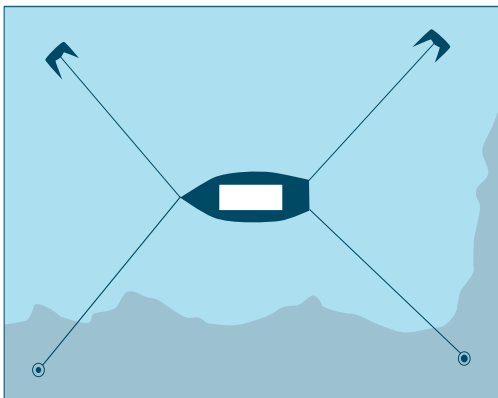
*CQR Anchor*

## PRIOR TO HURRICANE

Move your vessel at least 48-72 hours (or earlier) before the hurricane is estimated to strike the area. This is often before a hurricane watch is issued.

2. Make a checklist to see that:
  - (a) Fuel tanks are filled
  - (b) Fuel filters are clean
  - (c) Batteries are charged
  - (d) Bilges are clean
  - (e) Cockpit drains are free and clear
  - (f) Fire fighting equipment is in good order
  - (g) Lifesaving devices are in good condition, in place, and easily accessible (these items will be secured later)
  - (h) Radio for calling bridges and getting weather information
3. During a hurricane threat, the Miami Weather Forecast Office will issue Hurricane Local Statements, detailing specific effects in Miami-Dade, such as the time of the onset of tropical storm or hurricane-force winds, the amount of rainfall, and the threat of tornadoes. This information is broadcast continuously on NOAA Weather Radio, VHF frequency 162.550 MHz or available online at [www.srh.noaa.gov/mia/](http://www.srh.noaa.gov/mia/).
4. Remove and/or secure all deck gear, portable gear, radio antennas, outriggers, fighting chairs, deck boxes, bimini tops and side canvas/curtains, sails, canister rafts, and dinghies (The dinghy may be required to take lines ashore). Make sure that you secure all hatches, ports, doors, lazarettes and sailboat rudder.
5. If your vessel is moored at a dock on a canal, river, or in a marina near the ocean, it is possible that with up to an additional 5-10 feet or greater storm surge, the vessel could take a beating against the dock or even impale itself on the pilings. The vessel should be moored out in the river or canal if possible after all other boats have left. This is only appropriate if adequate, secure mooring lines can be run ashore.

- The best offshore mooring location for a vessel to ride out a storm is in the center of a canal or narrow river where at least doubled mooring lines can be secured to both shores, port and starboard, fore and aft. This four-point system should lead to substantially secured tie-offs such as sound seawall cleats or bits, pilings, or screw anchors. Even seawall cleats, dock pilings or dolphins should be reinforced with lines led back to trees or ground screw anchors.

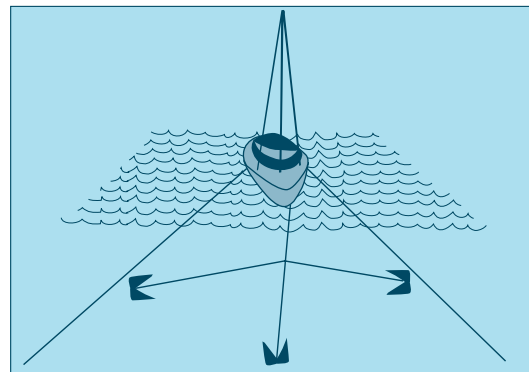


One of the many possible arrangements that can be used to secure a boat in a hurricane hole.

- Do not raft vessels** together at moorings or docks, especially if large and smaller vessels are involved. Mooring vessels singly reduces the possibility of damage.
- If the vessel must remain dockside at a private dock or marina, heavy-duty fender boards (2' by 6') should be used on a bare wood canter piling or otherwise installed to prevent damage. Lines should be doubled and even tripled where necessary to hold a vessel in the center of berth or off seawall or dock pilings. Preventers should be installed at the top of the piling so lines cannot slip off the top. Note that nylon line will stretch five to ten percent of its length.
- If small, trailerable boats have not been prepared in advance (as previously mentioned) and must be left out in the open, tie the boat to the trailer and tie down the trailer to screw anchors. Remove the drain plugs to prevent additional weight and damage to the boat. If the boat is small, put in on the ground and fill it with water.

## DURING THE HURRICANE

- Do not stay aboard a vessel during a hurricane.** If you have taken all the preliminary precautions previously outlined, you have done all that can be done in anticipation of the storm. Take photos and videos of how the boat is secure. *You will not be able to rectify anything that occurs during the storm without risking personal injury.*
- Stay in a protected and safe place.** Attend to the safety of your family home and other personal property.
- Stay tuned to news broadcasts and weather advisories concerning the hurricane so that you will know when the danger has passed. **Do not assume that the calm accompanying the eye of the hurricane means the worst has passed.** The other side of the storm will be along in twenty or thirty minutes.



Using three anchors set 120 degrees apart allows the boat to swing and face the wind. This is an especially good technique in crowded harbors because the boat will not swing as wide an arc as a boat that is riding only two anchors.

## AFTER THE HURRICANE

- Once it has been announced that the hurricane has passed, there may be extensive damage in the area. While checking the condition of your vessel is important, there may be limitations such as flooded roads and downed power lines. A check of the vessel should be made as soon as practical to determine its condition and security.

2. While there may be concern to move the vessel back to its original berthing location as soon as possible, this is not readily advisable for a couple of days as hurricanes have been known to turnaround and come back over and retrace their path. Hurricane storm tracks are highly unpredictable. Check with your marina owner first before returning to the marina to check on your vessel.
3. Threat for your vessel can occur from other vessels that may be upriver behind your vessel's mooring location. This may require that you modify your mooring if you are in the center of a canal or river so that other vessels may navigate past you.
4. A check of vessel security is important if damage has occurred. One security aspect that must be considered is the prevention of looters or others who feel that a damaged vessel is "abandoned" and thus theirs to take.
5. If there has been any theft, vandalism, loss or damage to the vessel other than storm related, a report should be made to local law enforcement authorities so that appropriate actions can be taken. The incident report number and, if possible, a copy of the incident report should be obtained to substantiate any insurance claim or IRS property loss report. Photographs or videos of salvage activities is also helpful.
6. If the damages are incurred to the vessel, take immediate action to save vessel and/or equipment and prevent further loss or damage. This action is a requirement of all insurance policies. A vessel owner is expected to take those actions that a "prudent uninsured person" would take to save and preserve his property.
7. If the vessel appears to be unrepairable (constructive total loss), you must make arrangements to remove the hull from any navigable waterways, as government authorities will probably require. The vessel should be moved to a yard or salvage facility storage area.
8. If salvage removal of your vessel is required (emergency or otherwise) and you are unable to

receive advice from your insurance company, agent, marina, or yacht club, screen the salvage contractor for competence and cost. Read the contract, know where your vessel is going, and the level of security provided at the location. Save as much equipment from the vessel as possible.

9. Where vessel damages are repairable, immediate arrangements should be made with a reputable repair yard to have the vessel moved there, if necessary, for repairs. Make a list of repair facilities that you would like to work with. Obtain estimates before proceeding with repairs. Those who act quickly will be back in the water first.

## GENERAL PROCEDURES TO PROCESS VESSEL

Once you have determined you have a loss, the following steps should be taken to process your claim:

1. For the record, photograph or video the damaged vessel and make a list of all damages and suspected problems. If the vessel is in peril, take all necessary steps to preserve the vessel and prevent further damage. Do not begin repairs other than those necessary to prevent further damage.
2. Promptly call your insurance agent to report the claim or loss. Estimate the percentage of damage: cosmetic, water damage, total loss, etc.
3. Contact repair yards to get estimates for repairs. You do not have to wait for an adjuster/surveyor to get estimates.
4. An adjuster, insurance company surveyor or independent surveyor acceptable to the insurance company will survey the damaged vessel. The boat owner can elect to hire a second surveyor, at the owner's cost, to conduct an independent survey of the vessel. The boat owner should arrange to accompany the surveyor on the initial damage survey.

5. Have your inventory list, receipts, inventory picture or video, pictures of damages and repair estimates ready for inspection by the adjuster/surveyor. You will need to provide both a “proof of loss” and “release/payment order.”
6. After conducting the survey, the surveyor files a survey’s damage report with the insurance company, and sends a copy to the boat owner, if required.
7. The boat owner files a statement of loss with the insurance company explaining what took place, when, where, and why. It includes specific lists of known damages along with sketches or drawings.
8. In the event of a mediation, the boat owner will hire a second survey/adjuster, at the boat owner’s expense, to represent the owner’s side of the dispute. A third party as an arbitrator will be designated to listen to both sides and arrive at a decision.
9. If the boat owner agrees on the estimates and companies to do the repairs, the insurance company issues a check with both the repair firm and boat owner/mortgage listed as payees on the check.
10. When the work is completed to the boat owner’s satisfaction and approval, the check is co-signed and the repair firm is paid.
11. Keep in mind that with all the confusion accompanying the aftermath of a hurricane, the underwriters will first settle claims having all the appropriate paperwork completed.
12. If a total loss of the vessel exists, a check is issued by the insurance company to the boat owner and mortgage, usually for an amount equal to the agreed value of the fair market value of the vessel.
13. In the event of a total loss, be prepared to surrender the vessel’s documentation papers, original insurance policy, any remaining equipment and the damaged vessel.

### **Remember!**

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If a vessel is insured, and damages have occurred, a report of loss and /or damage should be made to the insurance agent and /or company as soon as possible. A telephone call will suffice to put them on notice. This should be followed up with a written notice. Provide all the details that you can on this first notice, such as:

- (a) exact location of vessel
- (b) structural condition of vessel (e.g. holes in hull or minor damages)
- (c) did the vessel partially sink and is the machinery and/or interior wet, etc.
- (d) must the vessel be removed immediately; if so, to what location

### **Be Aware!**

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Insurance companies will have surveyors and adjusters in the area to help and work with their policyholders. In locations designated as disaster areas, there will be insurance teams and claims offices established. While surveyors, adjusters, company representatives, and many repair facilities will try to work with you, only you have the right and authority to determine what is to be done to or on your vessel. There will be many boat owners with damaged vessels and repair facilities will be very busy. You will have to do the necessary preliminary work quickly to get your vessel repaired.



# Boat Owners Preparation Worksheet

Use this worksheet, after reading the material in these guidelines, to adapt it to your own circumstances. Then be sure to distribute copies to your alternates as well as your marina owner/manager.

**Boat's Name** \_\_\_\_\_ Length \_\_\_\_\_ Model \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone Day \_\_\_\_\_ Night \_\_\_\_\_

## Alternates (If you are not available)

**1** Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone Day \_\_\_\_\_ Night \_\_\_\_\_  
 Has Boat Key? **Y N** Access to Hurricane Equipment? **Y N**

**2** Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone Day \_\_\_\_\_ Night \_\_\_\_\_  
 Has Boat Key? **Y N** Access to Hurricane Equipment? **Y N**

Boat's Current Location \_\_\_\_\_  
 Planned Location During Hurricane \_\_\_\_\_

**At a Dock**—Slip # \_\_\_\_\_

Additional Lines # \_\_\_\_\_ Length \_\_\_\_\_ Size \_\_\_\_\_  
 Chafe Gear \_\_\_\_\_ Fenders \_\_\_\_\_

**At a Hurricane Hole**—Travel Time by Water From Present Location? \_\_\_\_\_

Are There Any Bridges? **Y N** If Yes, Will They Open Prior to Hurricane **Y N**

Has Owner of Surrounding Land Been Contacted? **Y N**

How Will the Skipper Get Ashore? \_\_\_\_\_

Type of Bottom \_\_\_\_\_ Depth \_\_\_\_\_

Additional Anchor?  Bruce Anchor #: \_\_\_\_\_ Size(s) \_\_\_\_\_

Additional Lines?  Mushroom Anchor #: \_\_\_\_\_ Size(s) \_\_\_\_\_  
 # \_\_\_\_\_

Length \_\_\_\_\_  CQR Anchor #: \_\_\_\_\_ Size(s) \_\_\_\_\_  
 Size \_\_\_\_\_

Additional Chain? # \_\_\_\_\_ Length \_\_\_\_\_ Size \_\_\_\_\_

Chafe Gear \_\_\_\_\_ Swivel \_\_\_\_\_ Shackle(s) \_\_\_\_\_

## If at a Mooring/Anchorage

Has Mooring Been Inspected Within the Last 6 Months? **Y N**

How Will the Skipper Get Ashore? \_\_\_\_\_

Type of Bottom \_\_\_\_\_ Depth \_\_\_\_\_

Additional Anchor?  Bruce Anchor #: \_\_\_\_\_ Size(s) \_\_\_\_\_

Additional Lines?  Mushroom Anchor #: \_\_\_\_\_ Size(s) \_\_\_\_\_  
 # \_\_\_\_\_

Length \_\_\_\_\_  CQR Anchor #: \_\_\_\_\_ Size(s) \_\_\_\_\_  
 Size \_\_\_\_\_

Additional Chain? # \_\_\_\_\_ Length \_\_\_\_\_ Size \_\_\_\_\_

Chafe Gear \_\_\_\_\_ Swivel \_\_\_\_\_ Shackle(s) \_\_\_\_\_

## Diagram of Proposed Hurricane Docking/Mooring Arrangement:

**If Stored Ashore**—Is Boat Already Stored Ashore? **Y N**

If No, What Arrangements Have Been Made for Hauling?

Storage Location \_\_\_\_\_

Contact Name (Marina/Property Owner) \_\_\_\_\_

Phone # \_\_\_\_\_

## List All Equipment Needed Aboard to Prepare Boat

Equipment	Current Location
Extra Lines	_____
Chafe Protectors	_____
Fenders	_____
Anchors	_____
Swivels	_____
Shackles	_____
Duct Tape	_____
Plugs (Exhaust Ports)	_____
_____	_____
_____	_____

## List Equipment to Be Stripped From Boat

Equipment	Storage Location
Electronics	_____
Dinghy	_____
Outboard/Fuel	_____
Sails	_____
Bimini	_____
Galley Fuel	_____
Ship's Papers	_____
_____	_____
_____	_____
_____	_____

## Hurricane Plan Final Checklist

- |   |  |
|---|--|
| <input type="checkbox"/> Arrange Dock/Anchor Lines                | <input type="checkbox"/> Strip Bimini, Sails, Life Rings, Etc. |
| <input type="checkbox"/> Add Chafe Protection                     | <input type="checkbox"/> Disconnect Shore Power                |
| <input type="checkbox"/> Use Extra Fenders/Fenderboards as Needed | <input type="checkbox"/> Close Fuel Valves                     |
| <input type="checkbox"/> Secure Windows and Hatches               | <input type="checkbox"/> Close all but the Cockpit Seacocks    |
| <input type="checkbox"/> Insert Plugs in Engine Ports             | <input type="checkbox"/> Lock Boat                             |
|   | <input type="checkbox"/> Notify Marina Manager                 |

Reprinted from *Seaworthy*, a Periodical of the BOAT/U.S. Marine Insurance Program

## RESOURCE DIRECTORY FOR MIAMI-DADE COUNTY

<b>FWCC Law Enforcement</b> .....	1-888-404-FWCC
Emergencies .....	.911
Regional Office .....	.305-956-2500
Cell phones .....	*FWC
<hr/>	
<b>Miami-Dade Marine Patrol</b> .....	.305-468-1162
North - Pelican Harbor (NE 79th St) .....	.305-757-8567
Central - Matheson Hammock (SW 96th St) .....	.305-667-3820
South - Black Point (SW 248th Street) .....	.305-258-0733
Other City Marine Patrols	
Coral Gables Marine Patrol .....	.305-442-1600
Miami Marine Patrol .....	.305-866-2446
Miami Beach Marine Patrol .....	.305-673-7959
North Miami Marine Patrol .....	.305-891-8111
North Miami Beach Marine Patrol .....	.305-948-2956
<hr/>	
<b>U.S. Coast Guard (7th District) Marine Safety</b> .....	.305-415-6800
Marine Emergency Search & Rescue .....	.305-535-4472
<hr/>	
<b>U.S. Customs (Seaport Office)</b> .....	.305-536-5261
<hr/>	
<b>U.S. Army Corps of Engineers</b> .....	.305-526-7181
<hr/>	
<b>National Weather Service Miami South Florida (<a href="http://www.srh.noaa.gov/mfl/">www.srh.noaa.gov/mfl/</a>)</b>	
24-Hour Recording .....	.305-229-4522
24-Hour Service .....	.305-229-4528
<hr/>	
<b>CBS4/SPRINT Hurricane Hotline</b>	
Latest storm advisories at any time toll-free .....	.1-877-419-CBS4 (2274)
<hr/>	
<b>Neighbors4Neighbors Phone bank</b>	
Information on evacuations, sheltering, elderly, handicapped, hearing impaired, and other special hurricane problems .....	.305-597-7700
<hr/>	
<b>Biscayne National Park Visitor Center</b> .....	.305-230-1144
<hr/>	
<b>Everglades National Park</b> .....	.305-242-7700
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<b>Department of Natural Resource Protection Pollution Hotline</b> .....	.305-372-6955
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<b>Miami-Dade County Emergency Management</b>	
Administration .....	.305-468-5400
Team Metro Answer Center .....	.305-468-5900
Special Needs Registry .....	.305-513-7700
TDD/TTY info anytime .....	.305-468-5402

## IMPORTANT RADIO FREQUENCIES

Agency	Channel	Frequency
Bridge tender (countywide)	9	156.65 MHz
U.S. Coast Guard	16	156.80 MHz
NOAA Weather Radio		Wx-1 162.55 HNZ

## DRAWBRIDGE OPERATION PROCEDURES

### The Intercoastal Bridges

In the event an evacuation is ordered for communities located on the barrier islands, the Intercoastal bridges will operate on a modified schedule as follows:

- Venetian Causeway (west end) hourly on the hour
- 79th Street (Kennedy) Causeway (west end) hourly on the half-hour
- Broad Causeway hourly on the hour
- Sunny Isles Causeway hourly on the half-hour

### Lock-down Phase

All bridges in Miami-Dade County will be locked down eight hours prior to the arrival of tropical storm force winds (34 knots or 40 mph or greater) to prevent permanent damage to the drawbridges. The time for lock-down to occur will be finalized and announced by United States Coast Guard at least six hours prior to its implementation. Therefore, mariners will have at least six hours to move their boats before all bridges are locked down. During lock-down, the bridge is closed, power is turned off, traffic arms may be removed and the bridge tender is evacuated before the storm landfalls.

## ACKNOWLEDGEMENTS

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**Michael Karcher**, Marine Council

**Jim Lushine**, National Weather Service

**Kem Mayo**, Department of Environmental Resource Management

**Linda McDonald**, Florida Department of Environmental Protection, Clean Marina Program

**Maria Villanueva and Don Pybas**, University of Miami and University of Florida and Miami-Dade Cooperative Extension, *“Recommendations for Hurricane Preparations and Responses for Boating Communities and Industries”*

**Jesse Fernandezó**, Black Point Marina

*Boat/U.S. Seaworthy*, “A Guide to Preparing Boats and Marinas for Hurricanes”

Florida Marine Insurance, “Marine Hurricane Information”

Office of Emergency Management, “Hurricane Manual for Marine Interests”



## MIAMI-DADE COUNTY MARINAS, MIAMI-DADE PARK & RECREATION DEPARTMENT

### ***Black Point Marina***

24775 S.W. 87th Avenue

Miami, FL 33032 .....(305) 258-4092

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### ***Crandon Park Marina***

4000 Crandon Boulevard

Key Biscayne, FL 33149 .....(305) 361-1281

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### ***Haulover Marina***

10800 Collins Avenue

Miami Beach, FL 33167 .....(305) 944-3040

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### ***Homestead Bayfront Marina***

9698 S.W. 328th Street

Homestead, FL 33090 .....(305) 230-3033

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### ***Matheson Hammock Marina***

9610 Old Cutler Road

Miami, FL 33156 .....(305) 665-5475

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### ***Pelican Harbor Marina***

1275 N.E. 79th Street Causeway

Miami, FL 33138 .....(305) 754-9330

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## Hurricane Manual for Marine Interests

This publication was produced by the Miami-Dade County Office of Emergency Management with grants from the Federal Emergency Management Agency.

“Hurricane Manual for Marine Interests” can be viewed at  
[www.aicw.org/hurricane/hurricanecover.htm](http://www.aicw.org/hurricane/hurricanecover.htm)

For additional copies of this manual, please contact,  
Florida Sea Grant Extension Office of Miami-Dade County  
4600 Rickenbacker Causeway, Miami, FL 33149  
**305-361-4017**

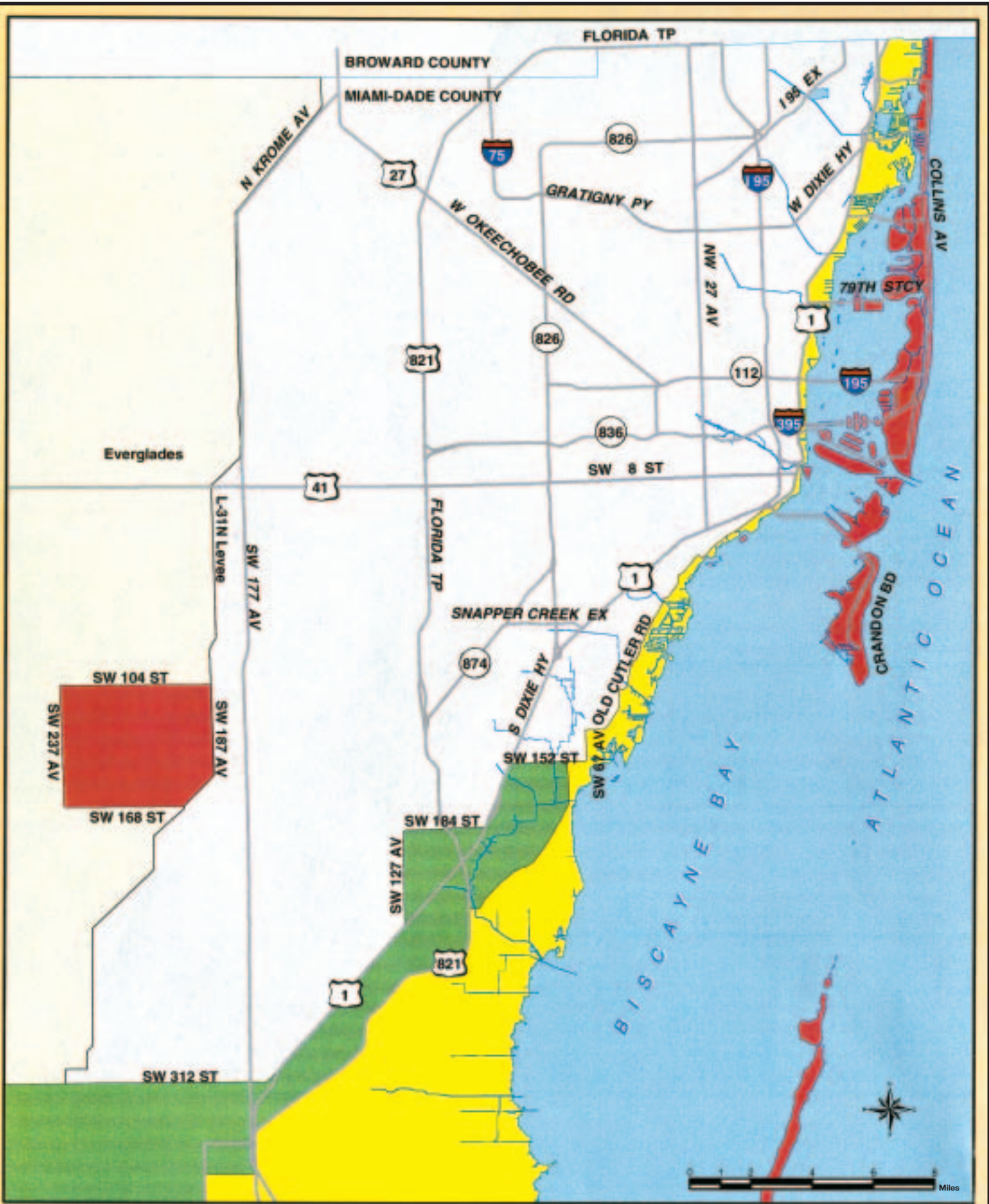
or

Miami-Dade Office of Emergency Management  
9300 NW 41st Street, Miami, FL 33178  
**305-468-5400**

**Zone A (Red Zone)** Miami Beach, Virginia Key, Key Biscayne and all islands lying within Biscayne Bay including the municipalities of Golden Beach, Sunny Isles Beach, Bal Harbour, Bay Harbor Islands, Indian Creek Village, Surfside, North Bay Village, City of Miami Beach and the island portions of the City of Miami. (Note: That area west of the L-31N levee known as the 8 1/2 Square Mile Area is ordered to evacuate because of its inaccessibility to rescue vehicles following a major storm.)

**Zone B (Yellow Zone)** All areas of mainland Miami-Dade County lying (north to south) east of Biscayne Boulevard, Brickell Avenue, S. Miami Avenue, South Bayshore Drive, Main Highway, Ingraham Highway, Old Cutler Road, the Florida Turnpike south to U.S. 1 to State Road 9336 [S.W. 344th Street (Palm Drive), S.W. 192nd Avenue (Tower Road) and Ingram Highway] south to Everglades National Park. The only exception to this pattern is a small area east of Old Cutler Road, west of S.W. 67th Avenue and north of S.W. 152nd Street that is not in the evacuation zone.

**Zone C (Green Zone)** The area of Miami-Dade County west of Zone B and a line defined by S.W. 152nd Street (Coral Reef Drive) at Old Cutler Road going west to U.S. 1 then south to S.W. 184th Street (Eureka Drive) then west to S.W. 127th Avenue (Burr Road) then south to U.S. 1 then U.S. 1 south to S.W. 312th Street (Campbell Drive or Homestead's N.W. 8th Street) then west to Everglades National Park.

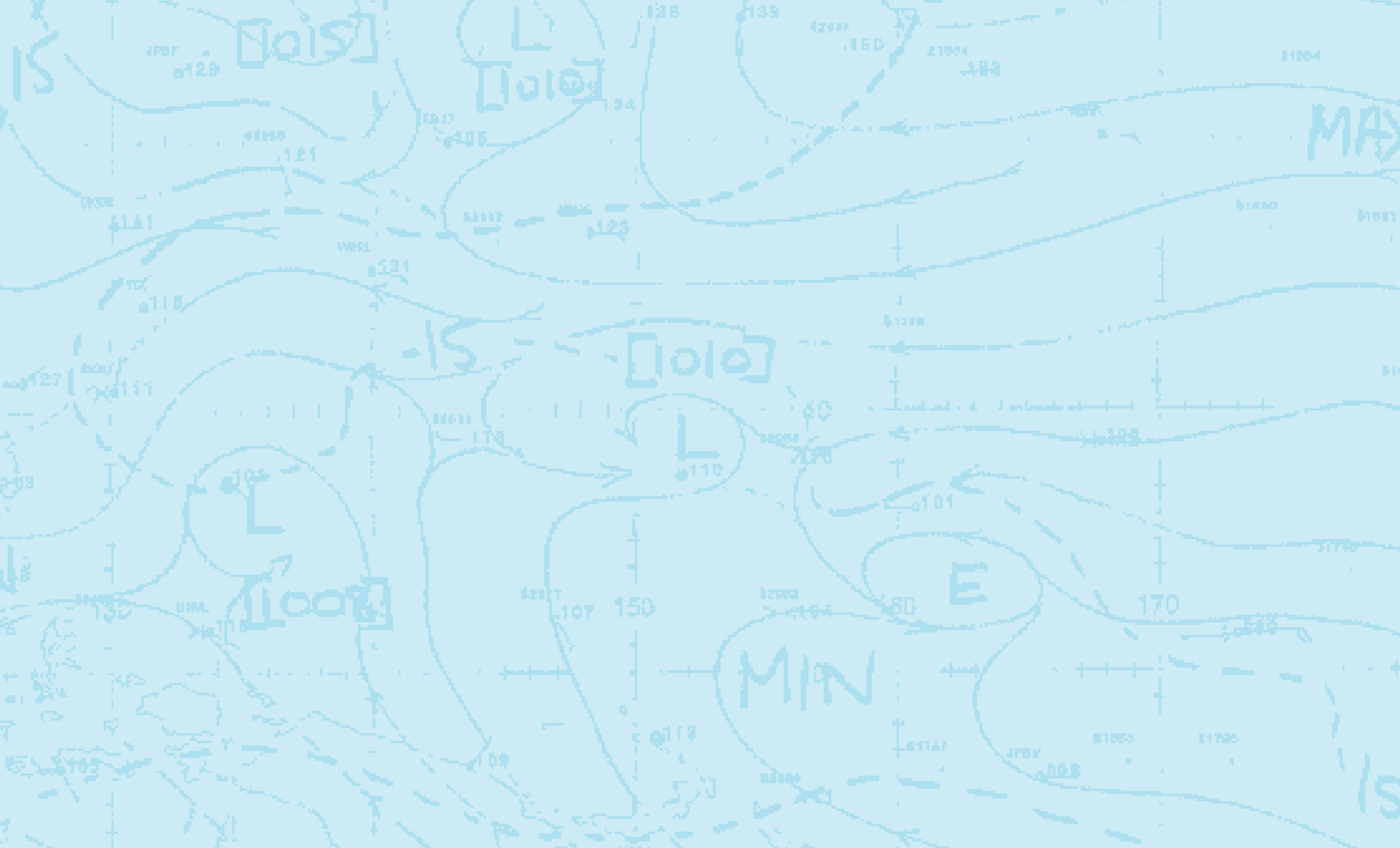


**ZONES**

**A B C**

**Hurricane Storm Surge Evacuation Zones**

This map was created by  
 The Miami-Dade County  
 Office of Emergency Management  
 June 4, 2003  
[\s0370024\GIS\Activation\Hurricane\](https://www.miamidade.gov/0370024/GIS/Activation/Hurricane/)  
 Document in hurricane\_image.mxd  
 Soheila Ajabshir (305) 468-5417



**PROJECT  
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IFAS EXTENSION

**emergency  
management**

