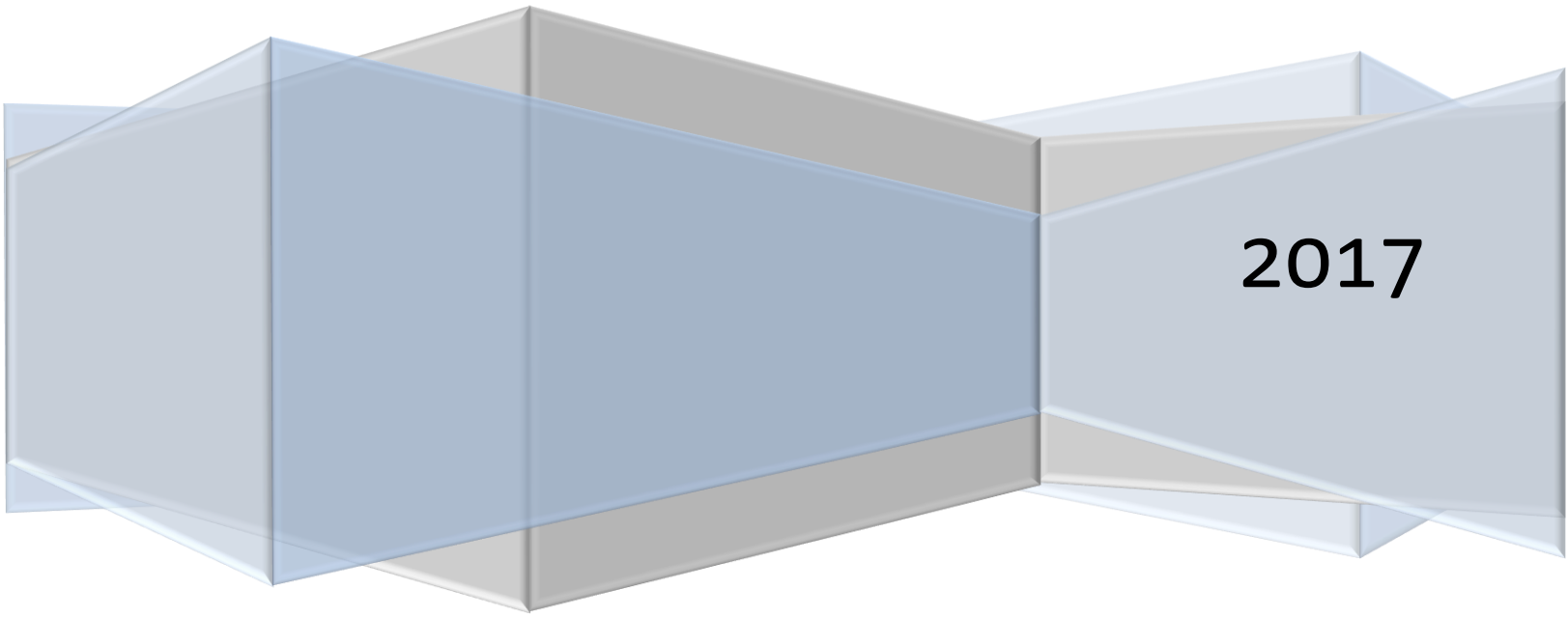
Florida State University Coastal & Marine Laboratory

FSUCML Hurricane Preparedness Guidance

FSUCML Emergency Response Team



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FSUCML Hurricane Preparedness

(Last update 07/28/2017)

OVERVIEW

This document provides important information for FSUCML personnel and users in the event of a hurricane watch, warning, and/or landfall in the Franklin County area. This document is reviewed and updated on an annual basis in May--a month prior to the beginning of hurricane season--by the FSUCML Emergency Response Team. Please note that the procedures included here are subject to change depending upon a given storm's projected path, intensity, and duration.

Please send questions or comments to the FSUCML Emergency Response Team:

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- Dennis Tinsley, Facilities Staff
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- Dr. Dean Grubbs, Associate Director of Research
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I. Hurricane Effects[1]

Hurricane preparation has to take into account the effects of wind, high water, waves, and rain. A hurricane brings high winds that can cause significant damage on the waterfront. When wind speed doubles, the wind pressure quadruples. To put it in practical terms, when the wind speed increases, the damage it causes increases at a much greater rate.

Also of concern and largely underestimated is the damage caused by high water, or storm surge. Storm surge raises the water level far above normal high tide, lifting boats above their docks and pilings. Surge accounts for major damage to boats because it puts docks and dock line arrangements underwater as the boat tries to float above. Surge results from several factors. Due to low barometric pressure, the ocean surface is drawn upward forming a mound about one foot higher than the surrounding ocean. Large swells generated by the storm reach land first, while storm winds drive water toward the coast. As the storm makes landfall, water levels 10 to 20 feet above normal high tide are possible. Surge is responsible for extensive flooding and much of the loss of life that accompanies a hurricane. Dangerous high tides can reach outward 20 to 50 miles from the storm's center. Surge makes extra length and positioning of dock lines critical.

Waves in the ocean have tremendous energy, even in relatively small harbors and bays. In a hurricane, it is not unusual for steep, breaking waves three to six feet high to pound normally peaceful harbors. Seawalls, barrier beaches, and other structures that normally protect docks and moorings are submerged by the storm surge. This has the effect of greatly extending the "fetch," or distance, over which the wind can generate waves.

Rainfall of six to 12 inches within 24 hours is normal during a hurricane, with extremes of 24 inches having been recorded. Boats that are spared the worst high water and wind still can be sunk by the torrential rain. The ability of a bilge pump and battery to handle rain accumulation is greatly overestimated. Deck drains and pump discharges located near the waterline can backflow when waves and rain put drains underwater.

Tornadoes are sometimes spawned by hurricanes. Little can be done to protect a boat from a tornado.

II. FSU Hurricane Plan

The Florida State University action plan for hurricanes can be obtained in the following ways:

(1) By calling the emergency information line at 850.644.INFO (4636)
(2) By visiting http://alerts.fsu.edu/
(3) By viewing the National Hurricane Center tropical storms and hurricanes website
   - From the FSUCML homepage - www.marinelab.fsu.edu
   - From the NOAA Hurricane Website - http://www.nhc.noaa.gov/
   - From the FSU Emergency Management site http://emergency.fsu.edu

[1] From Boat US

Other relevant websites include the Comprehensive Emergency Management Plan (CEMP) website (http://emergency.fsu.edu/cemp) and the Emergency Preparedness Guide website (http://emergency.fsu.edu/resources/prepguide).

III. Hurricane Drill (Year Round)

It is critical that the Administrative, Marine Operations, and Facilities Staff are well-prepared for hurricane season. To do so requires that everyone participate in a storm dry run. Three dry runs will occur each year: in February, May, and September. During the February drill, staff members will be given a specific storm assignment from pre-storm planning to secure the property, the small boats, the R/V Apalachee, vehicles and the offices. The dry-run includes the following:

- A meeting for all FSUCML personnel to review hurricane procedures and address any questions or concerns.
- Securing boats
    - Removal of small boats from the water and storing them in a secure place
    - Securing the RV Apalachee in the boat basin (see Appendix A)
    - Securing the RV Apalachee off site
- Securing the floating dock
- Securing property – picking up small items that could become airborne
- Securing offices
- Securing vehicles
- Securing laboratories & greenhouses
- Updating emergency contacts

IV. FSUCML throughout Hurricane Season (June 1 – November 30)

All actions listed here occur at the start of hurricane season and are repeated whenever a tropical storm or hurricane approaches the area. The FSUCML Emergency Response Team shall:

- Assess all outside areas to ensure that they are as free as possible of any loose objects—especially those that could become airborne in a storm event (e.g., garbage receptacles, pipe PVC, empty specimen tanks) or displaced during high water events (e.g., concrete blocks, storage sheds, lumber). These items should be stowed and/or secured so that they do not interfere with ongoing experiments or cause any property damage.

    ✓ STAFF MEMBERS ARE RESPONSIBLE FOR SECURING ALL OUTSIDE COMMON AREAS
    ✓ FACULTY AND STUDENTS ARE RESPONSIBLE FOR SECURING THEIR STUDY AREAS (with the help of staff if necessary).

- Consult with the FSU Emergency Management Coordinator and the Franklin County Emergency Management Team as tropical storms progress toward this area. Provide FSUCML employees and other users with regular updates on storm and evacuation status. Encourage them to listen regularly to updates provided by the media and call the lab if they have questions or concerns.

V. FSUCML under Hurricane Watch Conditions

A hurricane watch is the first notification by the National Hurricane Center that a hurricane is a threat to the watch area, and is normally given 48 hours before the storm is anticipated to reach tropical-storm force wind speeds. Landfall is uncertain and broad geographic areas are alerted. This is the time to start securing areas that take more than 12 hours to prepare.

At this time, t*he FSUCML Emergency Response Team* shall:

- Repeat all procedures outlined in section IV above
- Remind staff to store pertinent files to the K and L drives and remind IT personnel to check scheduled backups to make sure that they are running properly and are up-to-date.
- Remind FSUCML employees, faculty, technicians, and students to record all expenditures and provide justification of expenditures associated with storm preparation or recovery from storm events

Facilities Staff shall:

- In the event of a power outage that trips the back-up generators for the administrative and research buildings, set the HVAC systems no lower than 85°F (cooling) and no higher than 60°F (heating) to limit diesel fuel consumption.

Marine Operations Staff shall:

- Ensure that all FSUCML boats are removed from the boat basin. Those boats stored on trailers shall be moved and secured on high ground on FSUCML land north of HWY 98. The pontoon boats shall be placed on pads behind the Maintenance Shop (BLDG 406) or stored on trailers. All loose objects on boats shall be removed and stored in BLDG 406.

- Notify owners of vessels on FSUCML property that are not owned by FSUCML (e.g., FWC Marine Patrol, visiting researcher) that they are responsible for removing their vessels from the premises and for any damage incurred as a result of a storm.

The director or her designee shall determine when evacuation from the laboratory is appropriate, if this has not already been determined by the Franklin County Emergency Operations Center. Upon making this decision, the Director or her designee shall inform the FSU Police Chief, the FSU Emergency Management Coordinator, and the Franklin County Emergency Operations Center that FSUCML is closing.

VI. FSUCML under Hurricane Warning Conditions

A hurricane warning is normally issued 36 hours before a storm is expected to make landfall. Landfall predictions are more accurate, with narrower geographic boundaries. As warnings are updated, mandatory evacuations will apply to the Gulf Coast. This is the time to secure areas that take less than 12 hours to complete. If advised by the FSUCML Emergency Response Team to do so,

At this time, *FSUCML personnel* shall:

- Repeat all procedures outlined in sections IV and V above.
- Remove any personal valuables from the premises.
- Inform *the Director and Director's designee* by email of their personal hurricane plans.
- The PA system and the PA computer under the front desk should remain on and connected.
- Related to the Communications Room
    - Contact the OVPR IT Personnel to shut down the on-site Scientific Server (S: Drive). Other network functions will remain operational (K:, L:, email, internet, etc.).
    - Do not cover any equipment in in this room (including the Scientific Server). Because some of these devices will remain on, any plastic covering could cause the system(s) to overheat.
    - Leave the A/C in the room on as usual. It is connected to generator associated with the Admin Building.
- Related to computers and data storage
    - Backup to your external backup drive(s), the S: drive or the K: drives.
    - Ensure that all data are stored on the network on the K: drive Research's shared drive. You should always store your data on the K: drive. The network offers these advantages:
        - ✓ File recovery - Ability to restore/revert files up to 3 weeks
        - ✓ Remote access - Accessible via the VPN from University-owned laptops
        - ✓ Roaming - Follows you around when you log onto other campus computers
        - ✓ Failover – The servers are available all the time
        - ✓ Backup – The servers are automatically backed-up to other sites and cities
        - ✓ Safety - Constant anti-virus scanning
    - Shut down computers and electronic devices (copiers, printers, monitors, battery backup devices, etc.), then unplug the devices from their power source. The benefits of doing this are great, especially if your computer is lost, damaged, destroyed, or infected. It also significantly reduces the rebuild time if necessary due to permanent damage to the computer.
    - Move computers (including FSUCML laptops) to a secure location away from exterior windows and doors and off the floor in case of flooding.
    - Cover computers, files, and bookshelves with plastic sheeting and secure with tape after computers have been unplugged.
    - If you have a personal laptop, take the device home, or store it in a desk drawer away from windows.

Staff Responsible for Office Drill Assignment (Admin Bldg.)

- Related to all IT equipment –
    - Prior to departure, please unplug all IT equipment from power and/or turn off powerstrips. If you cannot reach the electrical plug in the wall, you can unplug power from the device directly. The plug looks similar to a rounded triangle (see below). *Networking and peripherals are OK to leave connected.*

Figure 1 - PC Power cable: Left to IT equipment, Right to wall

- Ensure that all generic workstations are turned off prior to departure. This includes printers, projectors, Bizhubs, monitors, laptop docks, TVs, microscopes, and other power-sensitive devices.
- Double-check absent workstations.
- Battery backup devices should be powered off (there is a power button on the device) ***and disconnected*** to prevent accidental shock. Battery backups stay alive even if it is disconnected, so be sure to turn them off. If the device beeps when it is unplugged, it is not powered off.
- Unplug all refrigerators, remove all perishable items, and leave the doors open
- Unplug all other appliances in the kitchen and other common use areas.
- Make sure that all office doors are closed before leaving the premises

FSUCML Facilities staff shall take the following actions:

- Close shutters on the main laboratory (BLDG 408) until storm conditions have passed.
- Fuel and move all FSUCML vehicles to well-protected high ground, either between the well house and the grad student building (BLDG 262), or the high ground on the FSUCML land north of HWY 98.
- Ensure that generator fuel tanks are filled to capacity.
- Shut off all gasoline and diesel fuel pumps.
- Fill all holding tanks under BLDG 408 with seawater to secure against wind and waves.
- Seawater pumps supporting the flow-through system shall remain on unless storm intensity dictates otherwise (as decided by Director or designee). If pumps are shut down, all specimens shall either be placed in recirculating systems supported by the back-up generators, released at the dock if this is not possible, or euthanized if release is not legal. Researchers are responsible for decision regarding the care of their captive animals and will provide instructions to staff members.

- On the east side of the basin, disconnect the gangway and secure it to the floating docks.
- On the west side of the basin, disconnect the gangway and secure it to the floating dock (pontoon boat). Pull the dock/boat out of the water.

Marine Operations Staff shall:

- Ensure that all FSUCML boats are removed from the boat basin. Those boats stored on trailers shall be moved and secured on high ground on FSUCML land north of HWY 98. The pontoon boats shall be placed on pads behind the Maintenance Shop (BLDG 406). All loose objects on boats shall be removed and stored in BLDG 406.
- Secure the R/V Apalachee either in the FSUCML boat basin or by sailing to a less vulnerable location, depending on conditions and the judgment of the boat captains, in consultation with the Facilities Director and the FSUCML Director. See Appendix A for detailed information.

<u>Special Assignments</u>

- If there is enough lead time, contact the IT Technical Support Analyst who would attempt to transport the Scientific Server back to Tallahassee and shut down the IT networking equipment.
- If there is not enough lead time, the Analyst:
  - can shut down the server remotely from Tallahassee; and
  - will assist with the shutdown procedures of the IT networking equipment by providing staff with instructions over the phone.
- After all equipment is shut down and has cooled down:
  - each entire rack should be covered with plastic and taped closed;

- the battery backups (one in LEFT rack, one in RIGHT rack) should be turned off, but can remain connected to the devices; battery backups should be disconnected from MAINS.
- No special functions relating to networking equipment will need to be performed in any additional buildings.

- The on-call staff member shall be assigned an FSUCML vehicle to use throughout a storm event for travel between home base and the marine lab to conduct inspections. The on-call staff member is responsible for:

  (1) inspecting the laboratory at 4-hr intervals during daylight hours no fewer than 3 times per day, including inspection of the walk-in and -80 freezers;
  (2) locking all building (interior and exterior doors) and the gate after each inspection;
  (3) notifying the Director and Director's Designee of conditions after each inspection; and
  (4) ensuring that generator fuel tanks are filled to capacity.
  (5) notifying Duke Power of a power shortage if the generators are on when they do their laboratory check. Call 800-700-8744 and provide the laboratory's account number, which is 19198-88486.

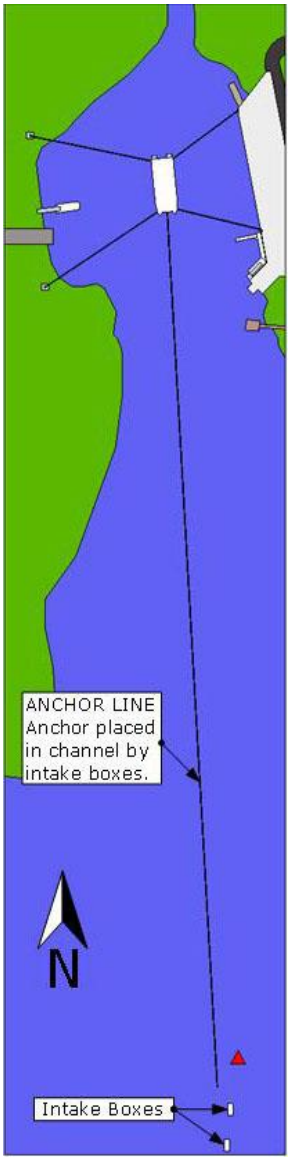
VII. Post-Hurricane Procedures

If Franklin County is under hurricane warning for a category 2 or higher hurricane, Franklin County Emergency Management (FCEM) will issue a mandatory evacuation for the entire county. Possession of a FCEM re-entry tag is required for anyone entering Franklin County before a county- wide evacuation notice has been lifted. Franklin-County residents obtain these tags directly from the FCEM. Essential FSUCML employees needed to conduct critical post-storm work who are not Franklin County residents will obtain re-entry tags directly from the FSUCML Facilities Director, who has been issued a limited number of tags; these employees must obtain re-entry tags before the storm and sign the Re-entry Tag Logbook when receiving and returning tags before and after storms.

- Emergency Response Team shall begin assessing any damage done to the FSUCML facilities. After initial assessment, R/V Apalachee Boat Captains, small boat technician, and facilities staff will be called in as needed.
- All FSUCML faculty, staff, and technicians should call *the On Call number* (850.591.0224):
  - ✓ *To inform the On-Call person of their personal safety, location, and post-hurricane plans.*
  - ✓ *To confirm whether it is safe to return to the FSUCML. No one is allowed to return until the FSUCML Director or Director's designee has verified that the FSUCML facilities and surrounding area are safe.*
- All FSUCML personnel should visit http://alerts.fsu.edu for university and FSUCML updates.

APPENDIX A: R/V APALACHEE HURRICANE PLAN

In the event of a tropical weather event, tropical storm, or hurricane, the Emergency Response Team and the R/V Apalachee Captains will decide on the best course of action to safely avoid or minimize potential damage to the R/V Apalachee. Because storm conditions vary greatly (storm strength, projected path, tidal surge, etc.), it is essential to have several options available for securing the vessel.



Securing in FSUCML Boat Basin

The first option will be to secure the vessel in the FSUCML boat basin, where there are four permanent mooring cleats. This should be the primary course of action in the event of a tropical storm, Category I, Category II, and potentially a Category III storm. The basin provides wind protection from the east, west, and north directions.

The procedure for securing the vessel in the basin shall be as follows:

(1) The Captain (with a crew member) shall get the R/V Apalachee underway and move out of the basin and into the channel ~500 feet to deploy the forward bow anchor in the channel to the west of the seawater intake boxes (See diagram).

(2) The Captain then backs the vessel into the center of the basin so that it can be secured at four additional mooring points while the crew member, using a small boat, runs the remaining mooring lines (pre-prepared lines and chains) to the permanent mooring cleats where an assistant is standing by:
- on the east side of the boat basin, securing the port stern to the NE cleat attached to the concrete bulkhead below the wooden dock and the port bow to the SE cleat attached to the concrete bulkhead, just north of the floating dock;
- on the west side of the boat basin, securing the starboard stern to the NW cleat and the starboard bow to the SW cleat, which are mounted on concrete pilings.

(3) Secure engines and double check that the R/V Apalachee is secured.

(4) Disembark all personnel from the R/V Apalachee using the small boat.

Securing in Local Rivers

If it is deemed necessary to move the R/V Apalachee to a location away from the FSUCML (e.g., because of projected storm surge or Category III to V hurricane), potential sites include local rivers that have provided shelter to vessels for generations. Given the R/V Apalachee's draft (4.5 ft.) and its height (28 ft.), there are several options to the west of the lab.

The St Marks River (approximately 35 miles from the lab) provides a very suitable location to moor the boat in the McKenzie Trucking Company barge slip. Tommy Panebianco at McKenzie Trucking has agreed to allow FSUCML to use the slip in the event of a hurricane emergency. The slip provides excellent protection being six miles up the St Marks River.

The Apalachicola River[2] (approximately 31 miles from the lab) is suitable about 5 miles north in the Saul's Creek area, just north of the Pinhook. The vessel should head west up the Apalachicola River, head west up the Jackson River, and go approximately ½ mile past the Pinhook and turn right (north) until the river narrows so that it is possible to tie off to trees on both banks of the river. The pre-prepared lines and chains will be used to secure the Apalachee to trees on both banks.

Securing North of Dog Island[1] (approximately 8.5 miles from the lab)

Another possible location for securing the R/V Apalachee, primarily to provide protection from high seas (not for protection from wind) is on the north side of Dog Island at Tyson Harbor. It is essential that the captain anchor on the hard sand bottom on the east side of the channel and avoid areas in the harbor where there is a soft, silty, bottom to avoid dragging anchor. The captain should use a minimum of two anchors (preferably three) to secure the vessel in this location.

[2] Information provided by Captain Dan Tonsmeire

APPENDIX B: DEFINITIONS FROM THE NATIONAL HURRICANE CENTER GLOSSARY (http://www.nhc.noaa.gov/aboutgloss.shtml)

- Tropical Storm: A tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 kt (39 mph or 63 km/hr) to 63 kt (73 mph or 118 km/hr).

- Hurricane: A tropical cyclone in which the maximum sustained surface wind (using the U.S. 1-minute average) is 64 kt (74 mph or 119 km/hr) or more. Category I = 74-95 mph; Category II = 96-110 mph; Category III = 111-129 mph; Category IV = 130-156 mph; Category V = 157 mph or higher.

- Hurricane Watch: An announcement that hurricane conditions (sustained winds of 74 mph or higher) are ***possible*** within the specified area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours in advance of the anticipated onset of tropical-storm-force winds.

- Hurricane Warning: An announcement that hurricane conditions (sustained winds of 74 mph or higher) are ***expected*** somewhere within the specified area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds.

APPENDIX C: EMERGENCY CONTACTS & INFORMATION RESOURCES

FSU Phone Numbers:
FSU Information 850.644.INFO (4636)
FSU Police 850.644.1234
FSU Emergency Management 850.644.7055 and 850.644.9111
FSU College of Arts & Sciences 850.644.1083
FSU Facilities and Maintenance 850.644.2424
FSU Environmental Health & Safety 850.644.6895

Websites/Phone Numbers:

- Franklin County Emergency Management - http://www.franklinemergencymanagement.com 850.653.8977
- Wakulla County Emergency Management - http://www.wcso.org 850.745.7200
- Leon County Emergency Management - http://www.leoncountyfl.gov/ei 850.488.5921
- FSU Emergency Management - http://emergency.fsu.edu 850.644.4636
- National Weather Service, Tallahassee - http://www.srh.noaa.gov/tlh 850.942.8833
- American Red Cross, Capital Area Chapter - http://www.redcross.org/fl/tallahassee 850.878.6080
- Florida Division of Emergency Management - http://www.floridadisaster.org 850.413.9969

Websites
FSU Hurricane Info - http://emergency.fsu.edu/hazards/tropical
FSU ALERT (Emergency Management and Instructions) - http://alerts.fsu.edu
National Hurricane Center - http://www.nhc.noaa.gov
Weather Underground Hurricanes and Tropical Cyclones - http://www.wunderground.com/hurricane
Leon County's Hurricane Survival Guide - http://www.haveahurricaneplan.com