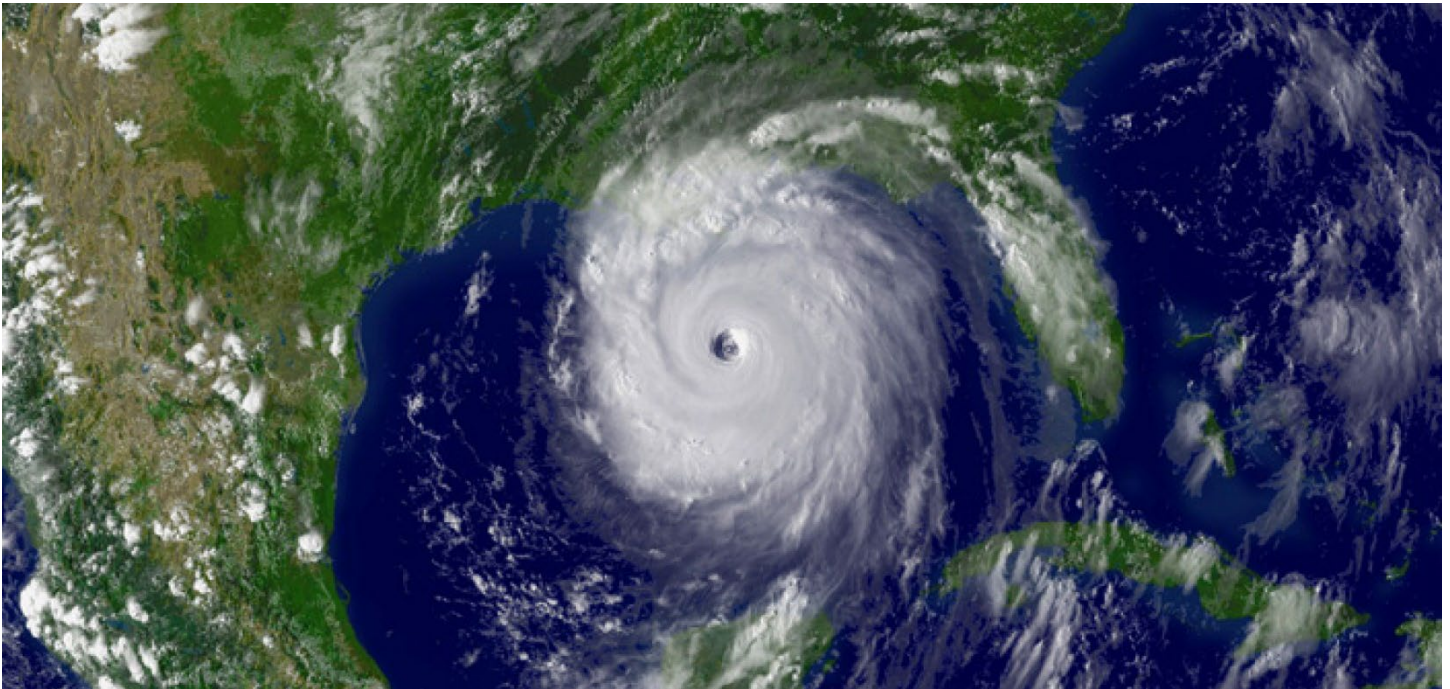


TREC NATURAL DISASTER PREPAREDNESS 2024



Documents included:

- NOAA NWS-Nat Hurricane Center 2023 hurricane season – the outlook
- 2023 Hurricane Season: ARE YOU READY? (English, Spanish, and Creole)
- Storm surge – evacuation-zone-map-2023 (in 2020 Hurricane Season: ARE YOU READY? Guide and a more precise map at <https://mdc.maps.arcgis.com/apps/webappviewer/index.html?id=4919c85a439f40c68d7b3c81c3f44b58>)
- Storm Surge Planning Zones – Frequently Asked Questions (English, Spanish, Creole). TREC is in Storm Surge Zone-D (at greatest risk for storm surge in Category 4 and 5 storms).
- Beat the Heat (Center for Disease Control and Prevention)
- Heat Related Illnesses (Center for Disease Control and Prevention)
- Natural Heat-Related Deaths in Florida: 2010-2020 (Gorucu et al., 2021. doi.org/10.32473/edis-AE558-2021)
- What the Agricultural Sector in Florida Needs to Know about Heat-Related Illness (HRI) (Monaghan et al., 2020. <https://edis.ifas.ufl.edu/publication/WC359>)

Date: June 8, 2024

To: All TREC employees, students, post-docs, and visiting scientists

From: Disaster Committee

Re: **Hurricane preparedness 2024**

Welcome to the 21st Century. The hurricane season now starts two-weeks earlier than it has historically. The 2024 hurricane season runs from May 15 through November 30 and is now upon us.

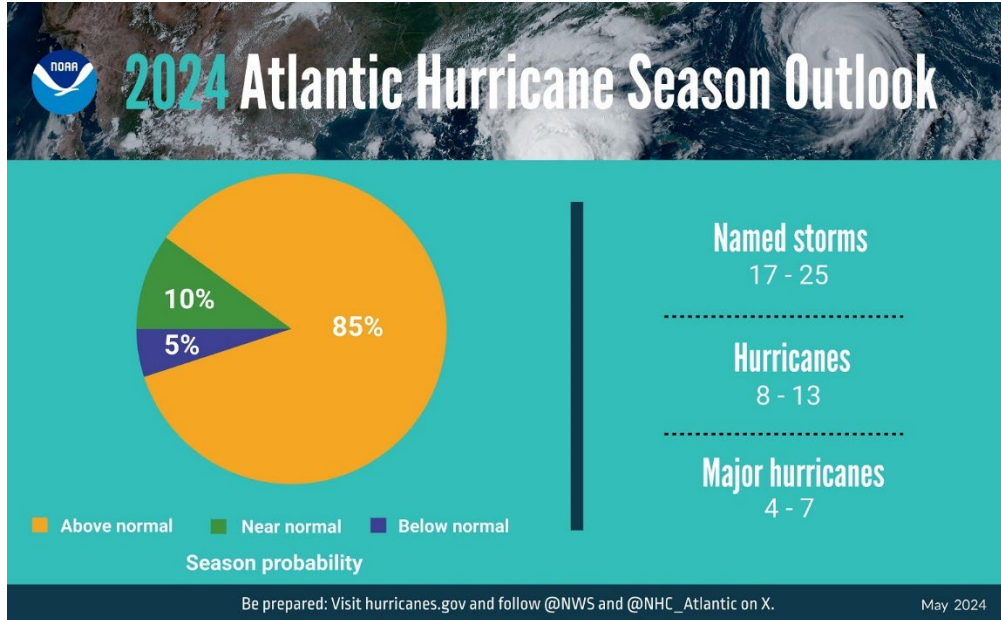
Date Updated 6-8-24

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[https://uflorida-my.sharepoint.com/personal/jhcr_ufl_edu/documents/active files/trec/administration/disaster committee/2024/trec natural disaster plan 2024 jhc.docx](https://uflorida-my.sharepoint.com/personal/jhcr_ufl_edu/documents/active%20files/trec/administration/disaster%20committee/2024/trec%20natural%20disaster%20plan%202024%20jhc.docx)

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NOAA predicts an above-normal hurricane season with eight to 13 hurricanes and four to seven major hurricanes (Category 3, 4 or 5).



Many TREC employees, students, post-docs, and visiting scientists have not experienced a hurricane and may not be fully aware of either the potential danger one poses to us or of the appropriate preparations needed to safeguard lives and property. The 2024 TREC Natural Disaster Preparedness document is designed to help us all prepare the experiment station for a major storm. It is available on our T-drive/Unit/TREC Disaster preparedness info/. A hurricane map and planning guides are also available to assist you in preparing your families and homes.

Please find enclosed the pdf of the 2024 Hurricane Season: ARE YOU READY? (English, Spanish, and Creole). Miami-Dade County 2024 Hurricane Guide is online to -

<https://www.miamidade.gov/global/emergency/hurricane/home.page>

At this site you will find:

1. Before, during and after hurricane advice and warnings
2. Storm surge planning zones (TREC is in Zone D, greatest risk for storm surge for Category 4 and higher storms) – find your location here (click STORM SURGE PLANNING ZONE)
<https://www.miamidade.gov/global/emergency/hurricane/storm-surge-zones.page>
3. Flood zone – link to address search; KNOW YOUR FLOOD POTENTIAL
<https://www.miamidade.gov/environment/flood-maps.asp>
4. Information on your emergency kits and checklists, emergency evacuations, and emergency and evacuation assistance program.

Miami-Dade County has a good website on hurricane preparedness (before, during and after a storm) at [Emergency Management \(miamidade.gov\)](https://www.miamidade.gov) and [Hurricane Readiness Guide \(miamidade.gov\)](https://www.miamidade.gov). UF/IFAS has a good website on disaster preparedness at [Hurricane and Disaster Preparation - UF/IFAS Extension \(ufl.edu\)](https://www.ifas.ufl.edu)

To find open storm shelters in Miami-Dade County go to Storm Aides for Everyone (SAFE) at [Storm Aides for Everyone \(miamidade.gov\)](https://www.miamidade.gov). Additional disaster information, planning and programs may be found at FloridaDisaster.org (<https://www.floridadisaster.org/>).

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Please familiarize yourself and your family NOW and keep this plan and guide readily available in case of an imminent storm this season. The chances of a major storm hitting Homestead are not that great, but it is a chance we cannot ignore. Everyone is expected to help with preparing the TREC if and when the time comes. For your safety, all work in the labs and offices is forbidden once the Center is officially closed.

BEFORE THE STORM ARRIVES:

Students and visiting scientists, postdocs, interns, etc. must communicate with your advisor or sponsor regarding your storm plans, i.e., where you will be during the storm. Please provide your supervisor with the necessary information that will allow you to be contacted before and after a disaster. Supervisors and faculty must contact all persons under your supervision prior to and after a storm event to ensure that they will be in a safe place. Good luck and be safe.

Terms and Definitions Used by the National Weather Service:

- Tropical Disturbance: A moving area of thunderstorms in the tropics.
- Tropical Depression: An area of low pressure, rotary circulation of clouds and winds to 38 mph.
- Tropical Storm: Counterclockwise circulation of clouds and winds 39 mph – 73 mph. The storm is assigned a name.
- Hurricane: When a tropical storm reaches winds of 74 mph or more it is classified as a hurricane.
- Advisory: Disseminates hurricane and storm data to the public every 6 hours. Small craft warnings are released as necessary.
- Special Advisory: Warning given anytime there is a significant change in weather conditions or change in warnings.
- Intermediate Advisory: Updates to regular advisory information every 2 to 3 hours as necessary.
- Gale Warning: Wind speed of 39 - 54 mph expected.
- Storm Warning: Wind speed of 55 - 73 mph expected.
- Hurricane Watch: Hurricane conditions are possible within the next 48 hours in your area.
- Hurricane Warning: Hurricane conditions are expected within 36 hours or less in your area.
- Tornado Watch: Tornadoes and severe thunderstorms are possible in your area.
- Tornado Warning: Tornado detected in your area. **TAKE SHELTER IMMEDIATELY.**
- Storm Surge: The strong winds associated with hurricanes and tropical storms cause the sea level to rise above normal tidal heights, with giant wind-driven waves and strong unpredictable currents, sometimes covering 50 miles inland.

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Saffir-Simpson Scale < <http://www.nhc.noaa.gov/aboutsshws.php> >

- **Tropical Storm** - winds 39-73 mph (63-118 kph)
- **Category 1 Hurricane** — winds 74-95 mph (119-153 kph). No real damage to buildings. Damage to unanchored mobile homes. Some damage to poorly constructed signs. Also, some coastal flooding and minor pier damage. Examples: Irene 1999 and Allison 1995.
- **Category 2 Hurricane** — winds 96-110 mph (154-177 kph). Some damage to building roofs, doors and windows. Considerable damage to mobile homes. Flooding damages piers and small craft in unprotected moorings may break their moorings. Some trees blown down. Examples: Bonnie 1998, Georges (FL & LA) 1998 and Gloria 1985.
- **Category 3 Hurricane** — winds 111-130 mph (178-209 kph). Some structural damage to small residences and utility buildings. Large trees blown down. Mobile homes and poorly built signs destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain may be flooded well inland. Examples: Keith 2000, Fran 1996, Opal 1995, Alicia 1983, Betsy 1965 and Wilma 2005.
- **Category 4 Hurricane** — winds 131-155 mph (210-249 kph). More extensive curtain wall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland. Examples: Hugo 1989, Donna 1960 and Irma 2017.
- **Category 5 Hurricane** — winds 156 mph and up (>249 kph). Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required. Examples: Andrew (FL) 1992, Camille 1969, Labor Day 1935 and Michael 2018.

I. TREC's Plan of Action

A. Communications

1. *Emergency contacts:*

- Edward Evans 786-217-9225/9263 (office) or 305-984-9973 (cell)
- Jonathan Crane 786-217-9271 (office) or 786/255-5878 (cell)
- Jorge Vergel 786-217-9283 (office) or 305-297-7599 (cell)
- Jake Hall 786-217-9246 (office) or (cell) 305-803-3417
- Maria Bernal 786-217-9227 (office) or 305-439-5476 (cell)

2. *Natural Disaster Committee*

- Jonathan H. Crane - Education & Media Services
- Jorge Vergel - Coordinator, Facilities Operations
- Jake Hall/Jose Castillo –Facilities Operations
- Young Gu Her – Member 786-707-9678 (cell)
- Maria Bernal – Manager, Administrative Operations
- Pamela Moon – Supplies 305-245-2414 (cell)

3. *Useful IFAS and Community Network Connections:*

- Campus Facilities Planning and Operations, (352) 392-1984
 - Ronnie Cooper, Dir. And Sean Mountain, Assoc. Dir.

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- Office of Information Technologies, Andrew Carey, (352) 273-2541.
- Miami-Dade Emergency Management (305) 468-5400.
- Miami-Dade County Extension Office, Homestead (305) 248-3311
- Teresa Olczyk (954) 849-8870 (cell)
- Miami-Dade Police, Cutler Bay (305) 378-4300
- Miami-Dade Police, West District Station (The Hammocks) (305) 383-6800
- Miami-Police, Kendall (305) 279-6929
- Homestead Police, Homestead (305) 847-1535
- Metro Emergency Management (305) 468-5400
- Metro Fire Rescue (305) 331-5200
- Metro Fire Stations, dial 911
 - Princeton
 - Modello
 - Redland
 - Homestead
 - East Homestead
- Miami-Dade Solid Waste Management (305) 375-1500
- Florida Division of Forestry, Homestead (305) 257-0875
- Florida Highway Patrol, Perrine (850) 617-2000
- South Florida Water Management District, Homestead (305) 242-5933
- Homestead Hospital-Baptist Health South: 786-243-8000

B. Preparation information and considerations

Each TREC person should review which flood zone they live in and their potential for storm surge/flooding. *More people are killed by flooding during hurricanes than wind* – take this flood zone information into strong consideration and evacuate early rather than late (i.e., as the storm is about to arrive). Plan NOW for what you and your family and friends will do, will go. The steps to doing this are:

Click #1: <https://www8.miamidade.gov/global/emergency/home.page>

Click #2: click on **STORM SURGE PLANNING ZONES**

Click #3: click on **STORM SURGE PLANNING ZONE** (map) – you will be taken to another website where you can enter your home address to determine your Flood Zone and the risk of storm surge/flooding.

These are key websites on disaster preparedness and recovery (some documents in English, Español and Kreyol) can be found at – please read them

- <https://www.nhc.noaa.gov/> - National Hurricane Center
- [Hurricane Readiness Guide \(miamidade.gov\)](https://www.miamidade.gov/global/emergency/home.page)
- <https://www.miamidade.gov/global/fire/home.page>
- <http://www.miamidade.gov/fire/emergency-management.asp> and
- <http://www.miamidade.gov/fire/evacuations.asp>.
- Dept. of Homeland Security - [Disasters | Homeland Security \(dhs.gov\)](https://www.dhs.gov/disasters)

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- National Weather Service - [National Hurricane Preparedness | National Oceanic and Atmospheric Administration \(noaa.gov\)](#) (has videos)



Supplies

- Customary items: get your prescriptions filled now, water, food, toilet paper, key personal documents (keep these on your person - passport, driver's license, medical insurance card)

C. When disaster approaches:

- **All faculty and supervisors are responsible for contacting all personnel in their program to ensure they obtain emergency shelter. Make notes on conversations and arrange to contact each other immediately after the event.**
- Work teams review preparation assignments and means of communication before and following the event.
- Gilly Evans and/or Jorge Vergel will contact UF Campus Facilities Planning and Operations, (352) 392-6488. The Center Director should notify and periodically update IFAS Administrators.
- The office staff will update home and cell phone number list of all staff at TREC.
- Again, Miami-Dade County has an excellent Hurricane Guide website (<http://www.miamidade.gov/global/emergency/hurricane/home.page>) with lots of information in English, Spanish and Creole on preparing for a hurricane, during a storm and after a storm, go to <http://www.miamidade.gov/hurricane/home.asp>. Students and visiting scientists living on the Center may be required to evacuate depending on the anticipated severity of the storm. The locations of officially designated emergency shelters will be broadcast by radio and television, and located at [Miami Dade Hurricane Guide](#) or [Miami Dade Fire Rescue Evacuations](#) (click **OPEN EVACUATION CENTERS**). The complete list of shelters in English, Spanish and Creole is included in this plan.
- **Those people going to a shelter should** (1) look up the address of at least three shelters (in case you are turned away at one, you have some backup); (2) check the online information as to whether you need to bring proof (record) of COVID-19 vaccination; and (3) go to the shelter well ahead of time so you secure a space to stay.

D. Preparations

- **Center Closing & Personnel Evacuations**

The following guidelines will be observed with regard to closing and re-opening of the Center:

If the Governor's or Mayor's Office declares State or Miami-Dade County Agencies closed, then the Center will be closed. For your safety, all work in the labs and offices is forbidden once the Center is officially closed; however, if the Center Director determines that the Center has not been adequately prepared, then those employees deemed by the Center Director as being essential for securing the Center must remain on duty until they are released by the Center Director.

The Center will remain closed so long as other State or County Agencies in this area remain closed. Nevertheless, the Center Director has the authority to require that certain employees return to the Center to perform essential functions as appropriate.

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Protection of Personnel

Students and visiting scientists living in the Center may be required to evacuate depending on the anticipated severity of the storm. Tornadoes spawned by seemingly weak storms can destroy buildings and lives. It is the responsibility of each faculty or supervisor to see that those people under your supervision who are living in a student apartment have a safe place to go. TREC is not liable for items left on-station in the event of a natural disaster. No protected storage site for personal vehicles is available on campus.

Both the supervisor and employees, students, or visitors must reestablish contact as soon as possible after the storm in order to account for everyone. Arrange with your group prior to the storm how this contact will be done. After assuring that your homes and family are secure, all employees are urged to devote as much volunteer time as possible to help restore the Center to full capacity.

• **Hurricane Watches & Warnings**

This plan comes into effect when TREC is placed on Hurricane Alert as decided by Center Director. The following plan has been developed so that all able faculty and staff can be part of disaster preparation at TREC and to provide accountability for everyone in the process. When there is a tropical storm or hurricane warning:

1. *Check buildings and equipment during pre-hurricane potential.*
 - a. Window and door shutters should be checked to ensure that they are in-place.
 - b. Make sure fuel containers and vehicles are full; check and test run all generators.
 - c. The bulletin board near mailboxes in the main office will serve as the Central Message Board.**
2. *Facilities and Administrative Services*
 - a. Secure buildings and equipment when hurricane is eminent (1-2 days before storm arrival).
 - b. Install shutters over windows and doors. Apply “Y” braces to roll down doors. Install bars over louvered ventilation openings.
 - c. People living at the Center may stay, or they may go to a faculty home or designated shelter if required by the Center Director.
 - d. Designate temporary storage location for vehicles, plants, and personal property.
 - e. Protect irrigation pumps (electrical, gas or diesel). Move mobile pumps to Buildings 8220/8259.
 - a. Move utility trailers, ATVs and unsecured materials (lumber and farm supplies) to shelter.
 - b. Top off all fuel tanks.
 - f. Move motor vehicles to shelter. If vehicles must remain in the open, park next to a building with the most protection from direct wind.
 - g. Disconnect and/or close valves that dispense fuel and propane gas.
 - h. Move sensitive equipment away from doors and windows.
 - i. Shut down all unnecessary electrical panels.

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- j. Secure/move to shelter loose items. Occupants of the student apartments must move loose items on the screened back porches to inside.
 - k. Faculty and supervisors are responsible for moving sensitive equipment away from windows and doors and covering with plastic in labs and offices.
 - l. Disconnect sensitive equipment and unhook/turn-off compressed gases.
 - m. If you have not received a brochure, then ask your supervisors/managers for a disaster response brochure.
 - n. Supervisors contact all personnel again before the storm to see if they plan to go to emergency shelter, and, if so, which one.
3. *Field Supervisors*
- a. If needed, install shutters, oversee progress.
 - b. Remove field generator to storage and top with fuel.
 - c. Move motor vehicles to shelters.
 - d. Shut down all unnecessary electrical panels.
 - e. Disconnect and close valves that dispense fuel.
 - f. Prepare necessary tools and equipment for repairs.
4. *Field crew assigned to:*
- a. Move all mobile irrigation pumps to Block 10 Butler shed or similar enclosure (e.g., Field Office storage).
 - b. Remove risers from riser blocks (all groves) and place on ground.
 - c. Secure aluminum solid-set irrigation pipes in Block 11.
 - d. Fill fertilizer tanks with water or move them to storage.
 - e. Secure lumber, farm supplies, etc.
 - f. Remove debris and trash.
 - g. Move all unsecured materials to shelter (items that may become airborne missiles).
 - h. Brace and secure roll down doors.
 - i. Lock and secure all buildings
5. *Faculty:*
- a. Move all sensitive equipment in labs and offices away from doors and windows and cover them with plastic.
 - b. Faculty are responsible for securing plant material in greenhouses or nursery areas and other loose items under their control (It is not the responsibility of the field crew to assist).
 - c. If possible, remove shade cloth from greenhouses.
 - d. Document with photographs current condition of critically important plants and/or equipment for possible damage claims.

If needed, each faculty and staff member is requested to donate 2 hours of time to general TREC preparations outside their specific office and laboratory areas. Each program (faculty member or staff supervisor) will report to Dr. Crane or George Vergel who will inform volunteers what tasks need to be done. The actual times are flexible and can be coordinated with everyone's supervisor. In some instances, personal responsibilities may prevent some individuals from donating 2 hours to hurricane preparedness for TREC. If personal responsibilities prevent someone from donating 2 hours to the Center, they must inform their supervisor accordingly. Faculty members who cannot donate 2 hours of their time must inform Dr. Crane or Mr. Vergel.

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Every effort will be made to ensure that every member of the field crew and shop will have a timely opportunity to leave the Center to attend to personal needs.



Note: Students and visiting scientists/postdocs living off center that plan on going to a shelter should not place their vehicles inside any buildings. Inside storage areas are for State vehicles only.

- **Freeze**
 - a. Check heating units in greenhouse (gas heaters, boilers, etc.) to insure proper function.
 - b. Check fuel supplies for heating units.
 - c. Move cold sensitive plants to protected area.
 - d. Check fuel levels and operation of all pumps for irrigation sprinklers.
- **Flood**
 - a. Move important equipment and documents out of flood zone.
 - b. Shut down all unnecessary electrical panels.
- **Tornado**
 - a. Alert all personnel of funnel clouds and/or warnings. Immediately seek predetermined shelters, e.g. Library/Conference Room, Building 8221 and new lab/office Building 8223. Both have high wind impact rated windows (~130 mph).
 - b. Only if sufficient time permits (i.e. during tornado watch) do the following:
 - Shut down all unnecessary electrical panels.
 - Protect irrigation pumps (electrical, gas or diesel).
 - Disconnect and close valves that dispense fuel.
 - Move utility trailers and unsecured materials (lumber, farm supplies) to shelter.
 - Move motor vehicles to shelter; if vehicles must remain in open, park closely together in line formation.
 - Move sensitive equipment from doors and windows.

B. After the Disaster

- **Determine the location and status of all employees.**
- Implement a plan of action as needed and establish central bulletin board location.
- Carry out education, debriefing programs, including psychological debriefing. For the latter contact the Department of Clinical and Health Psychology (352) 392-0294.
- Implement services as needed.
- Report employee and unit status to Center Director and IFAS administrators.
- Check on vulnerability of Center to theft, vandalism, etc. Respond as necessary.
- The top priority of shop and field crew following a storm will be to return Center to full operation, preserve downed trees, and other infrastructure.

C. Emergency Resources

An inventory of equipment and supplies shall be maintained by our Facilities Operations staff. The Center Director and Coordinator of Facilities Operations will also maintain a liaison with the Director of Facilities Operations [(352) 392-6488 x.238] as to equipment and supplies on inventory. The inventory should include vehicles, heavy equipment, generators, chain saws, fuel, trailers, plywood, roof felt, plastic film, nails, roof caps, radios, fuel hand pumps, etc.