

HURRICANE INFORMATION EVERYONE SHOULD KNOW



The office of Adventist Development and Relief Agency (ADRA), East Caribbean Conference, is pleased to share with you the following information regarding disaster preparedness, especially as we approach the 2009 hurricane season.

The hurricane season in the Caribbean area begins June 1st and ends November 30th each year although **natural disasters can and do occur at any time of the year.**

History tells us that a lack of hurricane awareness and preparation are common threads among all major hurricane disasters. Therefore, by knowing your vulnerability and what actions you should take, you can reduce the effects of a hurricane disaster.

What is a Hurricane?

A hurricane is a revolving storm of tropical origin, accompanied by winds of 75 or more miles per hour, which circulate around a centre of vortex of lower barometric pressure in a counter clockwise motion. When the intensity of the winds does not reach 75 miles per hour (mph), wavering between that figure and 40 mph, the phenomenon is termed a tropical storm; under 40 mph it is called a tropical depression.

As a hurricane approaches, the skies will begin to darken and winds will grow in strength. As a hurricane nears land, it can bring torrential rains, high winds, and storm surges. A single hurricane can last for more than 2 weeks over open waters and can run a path across the entire length of the eastern seaboard. **August and September are peak months during the hurricane season that lasts from June 1 through November 30.** <http://www.cero.gov.bb/pages/hurricanes.html>

What to do when the Hurricane Warning is Given

1. Do not pay attention to rumour. Stay tuned to your radio and listen to the bulletins. Weather reports are given daily on your local radio stations. In addition, when a hurricane is threatening the area, hourly updates are given by the Meteorological office via the radio stations and these reports include plotting information and wind speeds etc.
2. Stay away from **beaches** and other **low areas** which can be swept away by the sea and hurricane tides.
3. If your house is out of danger of tidal waves, that is the best place to stay during the hurricane. On the other hand, be prepared to move to the shelter designated to your area.
4. Fasten and secure doors and windows, especially the outside, using good wood or hurricane shutters.
5. Put away all objects which can be blown away by the wind, such as furniture, flowerpots etc., since they can be destructive weapons during the hurricane. Clean your yard.
6. Stock up with food items **which does not need to be cooked** – enough for not less than three days. If there are small children in the family, get prepared milk formula to last for a similar period of time.
7. Keep a supply of drinking water. Get a first aid kit, lanterns or lamps, batteries for radio and torches, water supply and electricity can be disrupted unexpectedly.
8. If you or any member of your family is ill, get in touch with medical authority right away before going to the shelter.
9. Keep handy pieces of cloth to clean the house and plug any holes with pieces of rag or paper since the water from the rain can enter the house.
10. Keep a full tank of gasoline in your car.

During the Hurricane

1. Do **not** leave your house or shelter.
2. Open one of the windows or doors of your house on the side opposite the one from which the wind is blowing. Remember to close the same window or door as soon as the direction of the wind changes and open another contrary to the new direction. This is recommended as a means of balancing the pressure inside and outside the house, so that the difference in pressure does not tear away the doors and windows.
3. If the centre, eye or vortex of the hurricane passes directly over your area, there will be a brief lull in the winds which can last from several minutes to half an hour or more. Remain in a safe place during this lull. Make emergency repairs if necessary, **bearing in mind that the wind will return suddenly from the opposite side and with greater force.**

4. Your telephone usage should be reduced to a minimum, preferably only in instances of absolute necessity. Most telecommunications equipment is manufactured to protect customers against electrical surges. However, it is impossible to protect fully against direct lightning strikes.
5. **Excessive use of the telephone can cause congestion and may prevent essential calls.**

After the Hurricane

1. Seek medical aid for those injured during the storm.
2. **DON'T TOUCH LOOSE OR DANGFLING WIRES.** Report damage to power lines, water lines or sewers to authorities.
3. **GUARD AGAINST SPOILED FOOD** if refrigeration fails.
4. **DRIVE AUTOMOBILE CAUTIOUSLY.** Debris-filled streets are dangerous. Soil may be washed from beneath pavements, which may collapse under the weight of vehicles.
5. If there is any telephone service in your area, you should report any damage to cables by calling the authorities.
6. Restoration of service will be carried out in order of priority beginning with the emergency and essential services, key officials, business and residential.

BE PREPARED

http://www.nhc.noaa.gov/HAW2/english/disaster_prevention_printer.shtml

"Preventing the loss of life and minimizing the damage to property from hurricanes are responsibilities that are shared by all."

The following information has been provided regarding actions that you can take based on specific hurricane hazards. The most important thing that you can do is to be informed and prepared. Disaster prevention includes both being prepared as well as reducing damages (mitigation).

Disaster Prevention should include:

- **Developing a Family Plan**
- **Creating a Disaster Supply Kit**
- **Having a Place to Go**
- **Securing your Home**

DEVELOP A FAMILY PLAN - Your family's plan should be based on your vulnerability to the Hurricane Hazards. You should keep a written plan and share your plan with other friends or family.

FAMILY DISASTER PLAN

- Discuss the type of hazards that could affect your family. Know your home's vulnerability to storm surge, flooding and wind.
- Locate a safe room or the safest areas in your home for each hurricane hazard. In certain circumstances the safest areas may not be your home but within your community.
- Determine escape routes from your home and places to meet.
- Have an out-of-state friend as a family contact, so all your family members have a single point of contact.
- Post emergency telephone numbers by your phones and make sure your children know how and when to call them.
- Check your insurance coverage - flood damage is not usually covered by homeowners insurance. If you do not have property insurance coverage now is the time to seek coverage for your property, including contents. It is better to spend a few dollars today to provide coverage than to have regrets tomorrow.

CREATE A DISASTER SUPPLY KIT - There are certain items you need to have regardless of where you ride out a hurricane. The disaster supply kit is a useful tool when you evacuate as well as making you as safe as possible in your home.

- Food – stock non-perishable foods and emergency supplies than can last your family for a minimum of 72 hours.
 - non-perishable packaged or canned food / juices / soups
 - foods for infants or the elderly
 - snack foods
 - non-electric can opener
 - paper plates/plastic utensils
- Water – adequate water for drinking and other essential purposes.
- Blankets, Pillows, Towels, etc.
- Clothing – seasonal / rain gear / sturdy shoes
- First Aid Kit / Medicines / Prescription Drugs
- Special Items - for babies and the elderly
- Toiletries / Hygiene items / Moisture wipes
- Flashlight / Batteries
- Radio - Battery operated
- Telephones - Fully charged cell phone with extra battery and a traditional (not cordless) telephone set. (A car charger will prove very handy.)
- Cash (with some small bills) - Banks and ATMs may not be available for extended periods
- Keys
- Toys, Books and Games
- Important documents - in a waterproof container or watertight re-sealable plastic bag — insurance, medical records, bank account numbers, Social Security card, etc.
- Tools - keep a set with you during the storm
- Vehicle fuel tanks filled

HAVING A PLACE TO GO

In times of disasters one of the most important decisions you will have to make is "**Should I Evacuate?**" **If you are asked to evacuate, you should do so without delay.** It therefore means that it is important for you and your family to **HAVE A PLAN** that makes you as safe as possible in your home.

If your family hurricane preparedness plan includes evacuation to a safer location, then it is important to consider the following points:

- **If ordered to evacuate, do not wait or delay your departure.**
If possible, leave before local officials issue an evacuation order for your area. Even a slight delay in starting your evacuation will result in significantly longer travel times as traffic congestion worsens.
- Select an evacuation destination that is nearest to your home, or at least minimize the distance over which you must travel in order to reach your intended shelter location.
- If possible, make arrangements to stay with the friend or relative who resides closest to your home and who will not have to evacuate. Discuss with your intended host the details of your family evacuation plan well before the beginning of the hurricane season.
- **If you are unable to stay with friends or family, then as a last resort go to a shelter.**
Remember, shelters are not designed for comfort and do not usually accept pets. Bring your **disaster supply kit** with you to the shelter.
- Develop an emergency communication plan. In case family members are separated from one another during a disaster (a real possibility during the day when adults are at work and children are at school), have a plan for getting back together.

SECURING YOUR HOME

Disaster prevention includes modifying your home to strengthen it against storms so that you can be as safe as possible. It also includes having the supplies on hand to weather the storm. **The suggestions provided here are only guides. You should use common sense in your disaster prevention.**

Retrofitting Your Home

The most important precaution you can take to reduce damage to your home and property is to protect the areas where wind can enter. According to recent wind technology research, it's important to strengthen the exterior of your house so wind and debris do not tear large openings in it. You can do this by protecting and reinforcing these five critical areas: **ROOF | STRAPS | SHUTTERS | DOORS | GARAGE DOORS**

A great time to start securing - or retrofitting - your house is when you are making other improvements or adding an addition.

Remember: building codes reflect the lessons experts have learned from past catastrophes. Contact the local building code official to find out what requirements are necessary for your home improvement projects.

Check into flood insurance. You can find out about the National Flood Insurance Program through your local insurance agent. There is normally a 30-day waiting period before a new policy becomes effective.

USEFUL DEFINITIONS

Atlantic Basin – The area including the entire North Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico.

El Niño – (EN) A 12-18 month period during which anomalously warm sea surface temperatures occur in the eastern half of the equatorial Pacific. Moderate or strong El Niño events occur irregularly, about once every 3-7 years on average.

Eye – Center of a hurricane with light winds and partly cloudy to clear skies (the calmest part of the hurricane). The eye is usually around 20 miles in diameter, but can range between 50 and 60 miles.

Eye Wall – location within a hurricane where the most damaging winds and intense rainfall are found. The eye wall is the most violent part of the hurricane.

Hurricane (H) – A tropical cyclone with sustained low-level winds of 74 miles per hour or greater.

Hurricane Day (HD) – A measure of hurricane activity, one unit of which occurs as four 6-hour periods during which a tropical cyclone is observed or estimated to have hurricane intensity winds.

Hurricane Watch – A hurricane or hurricane conditions may threaten a specific coastal area within 36 hours.

Hurricane Warning – A warning that sustained winds of 74 mph or higher associated with a hurricane are expected in a specified coastal area in 24 hours or less.

Intense Hurricane (IH) – A hurricane which reaches a sustained low-level wind of at least 111 mph (96 knots or 50 ms^{-1}) at some point in its lifetime. This constitutes a category 3 or higher on the Saffir/Simpson scale (also termed a “major” hurricane).

Intense Hurricane Day (IHD) – Four 6-hour periods during which a hurricane has an intensity of Saffir/Simpson category 3 or higher.

Named Storm (NS) – A hurricane or a tropical storm.

Saffir/Simpson (S-S) Category – A measurement scale ranging from 1 to 5 of hurricane wind and ocean surge intensity. One is a weak hurricane; whereas, five is the most intense hurricane.

SST(s) – Sea Surface Temperature(s)

SSTA(s) – Sea Surface Temperature(s) Anomalies

Storm Surge – A large dome of water, 50 to 100 miles wide, that sweeps across the coastline near where a hurricane makes landfall. It can be more than 15 feet deep at its peak.

Tropical Storm – (TS) A tropical cyclone with maximum sustained winds between 39 (18 ms^{-1} or 34 knots) and 73 (32 ms^{-1} or 63 knots) miles per hour.

$$1 \text{ knot} = 1.15 \text{ miles per hour} = 0.515 \text{ meters per second}$$

Saffir Simpson Hurricane Scale

Herbert Saffir, a consulting engineer who specializes in wind damage to buildings, and Robert Simpson, who was then director of the National Hurricane Center, invented the scale in the early 1970s.

Category	Wind Speed	Storm Surge	Damage Level
1	74-95 MPH	4-5 feet	MINIMAL - Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage. Hurricanes Allison of 1995 and Danny of 1997 were Category One hurricanes at peak intensity.
2	96-110 MPH	6-8 feet	MODERATE - Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Bonnie of 1998 was a Category Two hurricane when it hit the North Carolina coast, while Hurricane Georges of 1998 was a Category Two Hurricane when it hit the Florida Keys and the Mississippi Gulf Coast.
3	111-130 MPH	9-12 feet	EXTENSIVE - Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required. Hurricanes Roxanne of 1995 and Fran of 1996 were Category Three hurricanes at landfall on the Yucatan Peninsula of Mexico and in North Carolina, respectively.
4	131-155 MPH	13-18 feet	EXTREME - Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km). Hurricane Luis of 1995 was a Category Four hurricane while moving over the Leeward Islands. Hurricanes Felix and Opal of 1995 also reached Category Four status at peak intensity.
5	>155 MPH	>18 feet	CATASTROPHIC - Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required. Hurricane Mitch of 1998 was a Category Five hurricane at peak intensity over the western Caribbean. Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is one of the strongest Atlantic tropical cyclones of record.

**As you prepare, comfort
yourselves in the
knowledge that in every
aspect of preparedness,
God's guidance is
paramount.**



**In my distress I cried
unto the Lord, and He
heard me. Psalm 120:1**