

Hurricane Fact sheet

What is a hurricane?

A hurricane is a tropical storm with winds that have reached a constant speed of 74 miles per hour more. Hurricane winds blow in a large spiral around a relative calm center known as the "eye." The "eye" is generally 20 to 30 miles wide, and the storm may extend outward 400 miles. As a hurricane nears land, it can bring torrential rains, high winds, and *storm surges*. The storm surge and heavy rains can lead to flooding. Landslides are also associated with the heavy rain from a hurricane.

In the Caribbean, August and September are peak months during the hurricane season that lasts from June 1 through November 30.

What are the elements most at risk during hurricanes?

- building roofs and walls, if not properly attached,
- windows, if not protected.
- lightweight structures built with palm branches or wood, and older buildings with weak walls/structures without proper anchorage to foundations
- settlements, roads and utilities located in low lying coastal areas
- informal shelter and shanty settlements
- harbours and associated facilities
- trees, fences, signs, etc.
- Possessions, such as tables, motor bikes, or garden furniture, which is not properly secured against high winds.
- poles, pylons, high-level cables, if not properly anchored.
- fishing boats and other marine equipment/industry

Also, fishermen are at special risk from hurricanes as they may be at sea when a hurricane arrives and not be able to get to a safe harbour if they do not receive adequate warning.

How can communities be more protected against hurricanes?

Hurricanes can cause catastrophic damage to coastlines and several hundred miles inland. What communities and nations can do to be more protected?

Before the hurricane :

Understand where the risk of damage from a hurricane will occur

- Conduct risk assessments and develop hazard maps. These maps help to determine areas where people should evacuate and where protective measures must be taken.

- Identify areas are greater or lesser risk
- Identify buildings which need specific repairs or changes to reduce damage from the wind.
- Identify locations at risk of flooding and how to reduce the impact of this flooding.

Raise community awareness about hurricanes and the risks associated with these storms:

- Prepare and practice community evacuation plans.
- Distributed hazard maps and explain to people they need to do to reduce their risk should a hurricane strike.
- Incorporate education on hurricanes and protection from hurricane damage in school activities and social activities for children (scouts) and adults (through church groups and social clubs).

Have a working early warning system in place

- Make sure that there is an early warning system in place understood by your communities. Early warnings can be delivered via radio, television, mobile phones, or even door-to-door notice. With advance warning,
 - Steps can be taken to increase protection, such as evacuation of coastal areas, and,
 - With advance warning, steps can be taken to increase protection, such as placing emergency response teams on high alert and preparing emergency shelters.
- Make sure that the emergency plan is working

Ensure that people understand what they will need to do before and after a hurricane. (People may have to wait for 2-3 days after a hurricane before outside help arrives.)

- Families should store food, water, medical supplies and other basic commodities before the hurricane.
- Family members should know where to evacuate before a hurricane, and how to get back together if they are separated.
- Families, community groups and local government should implement plans to evacuate and care for the elderly, disabled and other individuals needing special assistance.
- Shelters should be opened well before the arrival of a hurricane. They should be stocked with adequate food, water and other basic supplies to sustain people for up to three days.

- Have a good early warning system in place. Local and regional weather information can be used to let the public know when the hurricane will strike and how long it will last.
- Educate people about the causes, risks and warning signs of hurricanes.
- Develop evacuation plans, not forgetting the very young, elderly and disabled who may not be able to evacuate easily.

Implement *structural measures* to reduce or prevent the impact of winds, flooding and other damage from a hurricane.

- Identify ways in which the use of land can be change to avoid or reduce hurricane impact.
- Reinforce or repair building structures and shore line protections.
- Avoid building directly on the coastline, where hurricane waves may cause flooding. If you must build near the coastline, elevate the building and ensure roof and walls are well attached.
- Maintain and/or construct mangroves (tree formations found along tropical and sub-tropical coastlines). These act as natural shock absorbers, soaking up destructive waves.
- Protect coral reefs. They act as natural wave-breakers.
- Preserve wetlands. Wetlands can act as flood control systems, storing large amounts of floodwater.
- Trim dead or overhanging tree branches and keep outside areas close to homes free of debris. Hurricane force winds are extremely powerful and can blow down branches, uproot trees, and throw loose debris around with enormous power. Install storm shutters or boards to protect windows, secure doors to withstand high winds, and use wind-resistant roofing Sand dunes may be built to act as a buffer from storm waves. Planting grasses, shrubs and trees may stabilize existing dunes, and is often much less expensive than other protection measures.
- Construct wind-safe buildings to provide community shelter during hurricanes.
- Build with flood-resistant material, such as concrete, ceramic, or brick.
- Build seawalls and revetments along the shoreline to help protect the shore from storm waves. Breakwaters may also protect the shoreline from waves.

During the hurricane

- Do not go out during a hurricane.
- A sudden calming of the weather may mean that the eye of the hurricane is passing, but that the hurricane is not over!
- Listen to the radio or television to get the latest information on the track and duration of the hurricane.

- Try to maintain a near normal routine while waiting out the hurricane. This helps reduce fear. For instance, organize games for children in shelters, and encourage adults in evacuation shelters to participate in the management of the shelter.

http://www.fema.gov/hazard/hurricane/hu_during.shtm

<http://www.ci.cambridge.ma.us/~EM/fact06b.html>

After the hurricane:

- Conduct and publicize impact assessments.
- Develop recovery plans which ensure people can quickly rebuild their homes and that social and commercial services will re-open as quickly as possible.
- Assist people in returning to their home and communities as quickly as possible, but not so soon that it is dangerous.
- Warn returnees of the risks of injuries and health problems in rebuilding from flood damage.
- Ensure hurricane victims have fair and easy access to information on relief and recovery services and assistance which may be available.
- Provide advice and training to hurricane victims on ways to quickly rebuild in ways which will reduce future damage from hurricanes.
- Provide appropriate assistance to the elderly and other disadvantaged groups (the ill, orphans, disabled) who need additional assistance to recovery from the flooding.
- Draw lessons from the impact of the hurricane and enhance measure to prevent or mitigate these impacts in the future.
- Invest in mitigation measures.
- Develop and implement ways to build back better.
- Invest in prevention measures (early warning systems, building constructions and public awareness)

<http://www.ci.cambridge.ma.us/~EM/fact06c.html>

Statistics:

http://www.em-dat.net/disasters/Visualisation/profiles/natural-table-emdat_disasters.php?dis_type=Wind+Storm&Submit=Display+Disaster+Profile

Good case studies

Cuba:

For evacuations

http://www.oxfamamerica.org/newsandpublications/publications/research_reports/art7111.html/?searchterm=cuba

For warning and post disaster, Bangladesh.

Look into lessons/case study from Jamaica
United States

<http://www.colorado.edu/hazards/wp/wp98.html>

Conduct a Goggle search on Hurricane Mitch and hurricane Katrina to find more about recent good cases

For Further Information:

<http://www.aoml.noaa.gov/hrd/tcfaq/tcfaqHED.html>

<http://www.fema.gov/plan/prevent/howto/index.shtm#4>

<http://www.nhc.noaa.gov/HAW2/english/intro.shtm>

<http://www.aoml.noaa.gov/hrd/tcfaq/tcfaqHED.html>,

http://www.fema.gov/hazard/hurricane/hu_about.shtm