



National Emergency Management Agency
Churchill Building, Rawson Square
Nassau, Bahamas

Ph: (242) 322-6081/5 * Fax: (242) 326-5456
E-mail: nema@bahamas.gov.bs
Website: www.bahamas.gov.bs/nema

HURRICANE GUIDE



Islands of
The Bahamas



FORWARD



The Commonwealth of The Bahamas has suffered tremendous damage and losses from the effects of tropical cyclones over the years. We must take adequate precautions to avoid and minimize losses when hurricanes threaten. We must pray for the best, but prepare for the worst.

It is your responsibility to be prepared during the hurricane season. This booklet advises on precautions to be followed at the start of the hurricane season and explains actions that you, your family and friends should take when a tropical storm or hurricane threatens or strikes The Bahamas. You will find guides on what to do at each phase of a tropical storm or hurricane along with emergency supplies that should be stored, shelter arrangements and contacts.

If you do not prepare and do not follow warnings and advisories, you will not only be risking your life and the lives of those you love, but will also be putting the lives of others at risk.

We trust that you will find this booklet useful.

Remember - Be Aware and Be Prepared.

C. Francis Smith
Director, NEMA

May 2006

SHELTERS

If your house or accommodation is in a low-lying area, on the beach, or inadequately prepared for storm/hurricane force winds and storm surges, you should evacuate to a safer location or to the nearest shelter. NEMA will broadcast information via local radio and television stations about when the shelters will be open.

Before leaving your home turn off electricity and gas and inform your family of your evacuation plan. If an evacuation order is given, move quickly but without panic.

A listing of the shelters can be obtained from NEMA's Headquarters or from the Administrator's Office in your Family Island district.



Repairs

- Make temporary repairs to correct safety hazards and minimize further damage. This may include covering holes in the roof, walls or windows and debris removal.
- Take photographs of all damage before repairs and try to keep receipts for insurance purposes.
- After assessing damage to your home, contact the Ministry of Works for information on required permits. Permits are always required for any kind of demolition or permanent repairs, reconstruction, roofing, filling and other types of site development. Report any illegal development to the Ministry of Works.
- Local ordinances permit dumping only at designated sites to avoid environmental degradation. Report all dumping.

Water Precautions

Whenever widespread flooding occurs, there is a potential for bacterial contamination. Bacteria, such as salmonella, can lead to life threatening dehydration for people and their pets if untreated by antibiotics. Disinfect any tap water you drink or use for cooking or cleaning. You must purify the tap water until officials notify you of its safety. Bring water to a rolling boil for a full 10 minutes or use chemicals (eight drops of chlorine bleach or iodine per gallon) or water purification tablets, as directed. Let the water sit at least 10 minutes before using. Water you saved in clean containers before the storm will be fine for 2 – 3 weeks. To be sure, add two drops of chlorine or iodine per gallon before drinking.

THIS GUIDE INCLUDES INFORMATION ON:

Understanding Advisories

Hurricane Hazards

What Damage You Can Expect

Protecting Your Home

What To Do As A Storm Approaches

Disaster Supplies Kit

Advice For Older Adults and Homebound Patients

Tips For Hotel Operators

Tips For Fishermen & Farmers

Protecting Your Business

Your Pet Survival Plan

What To Do After A Storm

Shelters

UNDERSTANDING ADVISORIES

Advisories warn us of impending danger from severe weather. We need to listen to them so that we can do the right things at the right times.

TROPICAL STORM ALERT: Within **48 hours**, a tropical storm (34-73 mph) is likely to hit.

TROPICAL STORM WATCH: Within **36 hours**, a tropical storm (34-73 mph) is likely to hit.

TROPICAL STORM WARNING: Within **24 hours**, a tropical storm (34-73 mph) is likely to hit.

TROPICAL STORM ALL-CLEAR: The storm has left the area, but caution should prevail.

HURRICANE ALERT: Within **48 hours**, a hurricane (winds over 73 mph) is likely to hit.

HURRICANE WATCH: Within **36 hours**, a hurricane (winds over 73 mph) is likely to hit.

HURRICANE WARNING: Within **24 hours**, a hurricane (winds over 73 mph) is likely to hit.

HURRICANE ALL-CLEAR: The hurricane has left the area, but caution should prevail. You must wait to hear an all-clear before you leave your house or shelter accommodations.

(**Caution:** The times given above are guidelines; sudden changes in the storm can cause variations.)

- Beware of snakes, insects or animals driven to higher ground by floods.
- Enter your home with caution. Open windows and doors to ventilate and dry your home.
- If there has been flooding, have an electrician inspect your home or office before turning on the breaker.
- Be careful with fire. Do not strike a match until you are sure there are no breaks in gas lines. Avoid candles. Use battery-operated flashlights and lanterns instead.
- Keep grills outdoors in a well-ventilated area.
- Use your telephone only for emergencies to keep lines open for emergency communications.

Generators

Generators can run appliances and fans. Sizes range from 750 watts which will run a fan and a light, up to 8000 which will practically run a house (except for the air conditioner). Refrigerators require 400-1000 watts. If you have lost power, don't connect a portable generator to building wiring unless the unit has been installed and inspected by licensed electrician (this could injure or kill neighbours or electrical repair crews). Plug appliances, etc., directly into the generator, place generator outdoors or in a well-ventilated area. Don't forget to check the oil every time you add fuel. Conserve fuel by alternating appliances. For example, refrigerators can be kept cool by supplying power eight hours a day.

AFTER THE STORM

After a disaster, you may be without power, water, food or any of the services and businesses we rely on. Immediate response may not be possible, so residents must be prepared to be self-reliant for several weeks.

Re-entry

- **BE PATIENT.** Access to affected areas will be controlled. You won't be able to return to your home until search and rescue operations are completed and safety hazards, such as downed trees and power lines, are cleared. It may take 2 – 4 weeks before utilities are restored.
- Stay tuned to your local radio or TV station for advice and instructions about emergency medical aid, food and other forms of assistance.
- Have a valid ID. Security operations may include check points. Valid identification with your current local address may be required.
- Avoid driving. Roads will have debris which will puncture your tires! Don't add to the congestion of relief workers, supply trucks, law enforcement, etc.
- Don't sight-see, especially at night.

For Your Safety

- Avoid downed or dangling utility wires, especially when cutting or clearing fallen trees. Metal fences may have been “energized” by fallen wires.

HURRICANE HAZARDS

The hurricane can combine storm surge, powerful winds, tornadoes and torrential rains into a devastating combination.

Storm Surges

A storm surge is an abnormal rise in sea level 50 to 100 miles wide that sweeps across the coast near where the “eye” of the hurricane makes landfall. The surge of high water, topped by waves, is devastating. Along the immediate coast, storm surge is the greatest threat to life and property. Most hurricane-related deaths are caused by drowning.



Winds

Hurricane force winds, 74 mph or more, can destroy buildings. Debris can become flying missiles in hurricanes. Winds often stay above hurricane strength well inland. If you do not have to evacuate, it is extremely important to secure your home and cover your windows before the storm.



Heavy Rains/Floods

Widespread torrential rains often in excess of 10 inches can produce destructive floods. This is a major threat to low-lying areas.

Tornadoes

Hurricanes also produce tornadoes, which add to the hurricane's destructive power.

HURRICANE CATEGORIES

Category	Sustained Winds	Damage
1	74 - 95 mph	Minor
2	96 - 110 mph	Moderate
3	111-130 mph	Major
4	131 - 155 mph	Severe
5	Above 155 mph	Catastrophic



HURRICANE SAFETY

TAKE ACTION NOW! BE PREPARED!

- Decide NOW where you would go if ordered to evacuate (a friend or relative, a hotel or as a last resort, to a shelter). If you are going to leave your area or go to a hotel, you must leave early. Determine your route.
- Check your Disaster Supplies Kit and obtain any items you need.
- Keep home in good repair. Tack down loose roofing. Trim dead or broken branches from trees. Keep your yard clear of loose objects.
- Make the minor improvements, such as bracing the gable ends of the roofs, needed to make your home safer. Contact a professional engineer, licensed contractor or architect to inspect your home for structural integrity.
- Make plans and purchase materials to protect your home before the storm - plywood, protection windows; plastic sheeting, nails, etc.
- Purchase a battery-powered radio.
- Inventory your property (a video tape is excellent). Store with insurance and title papers in a safe place and send copies to a relative out of the area.
- Make sure your address (number) is clearly marked on your home.
- Whether you rent or own your home, review your insurance policies with your agent now.

PROTECT YOUR PETS

Pet owners are responsible for disaster planning for their pet. Therefore, if you plan to evacuate, plan for your pet as well. Take your Pet Survival Kit if you go to friends, relatives or a hotel. Shelters cannot accept pets. If you plan to go to public shelter, make other provisions for your pet. Limited space is available at “pet shelters” (kennels, veterinarians, etc.). After the storm has passed, be careful in allowing your pet outdoors. Familiar scents and landmarks may be altered and your pet could easily be confused and become lost. Downed power lines, and animals and insects brought in with high water, could present real dangers to your pet. Take care not to allow your pet to consume food or water, which may have become contaminated. For more information, call the Bahamas Humane Society at 323-5138.



Pet Survival Kit

- Proper ID collar and rabies tag/licence*
- Carrier or cage, leash
- Ample food supply, water/food bowls (at least two weeks)
- Any necessary medication(s) and specific care instructions
- Newspaper, cat litter, scoop, plastic trash bags for handling waste
- Proper ID on all belongings
- Make sure your pets have had all their shots within the past 12 months. Pet shelters will require proof of vaccinations.

WHAT DAMAGE CAN YOU EXPECT?

To relate hurricane intensity to damage potential, the Saffir/Simpson Scale is used to assign storms into five categories. Category One is a minimum hurricane; Category Five is the worst case.

Category 1 – Winds of 74-95 miles per hour. Damage primarily to shrubbery, trees, and foliage. No real damage to structures. Some damage to poorly constructed signs and/ or **storm surge 4 to 5 feet above normal.** Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorages torn from moorings.

Category 2 – Winds of 96 to 110 miles per hour. Considerable damage to shrubbery and tree foliage; some trees blown down. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings; some window and door damage. No major damage to buildings, and/or **storm surge 6 to 8 feet above normal.** Coastal roads and low-lying escape routes are cut-off by rising water two to four hours before the hurricane's centre arrives. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying inland areas required.

Category 3 – Winds of 111 to 130 miles per hour. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings and/ or **storm surge 9 to 12 feet above normal.**

Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damaged by battering waves and floating debris. Low-lying escape routes inland are cut-off by rising water 3 to 5 hours before hurricane's centre arrives. Flat terrain 5 feet or less above sea level flooded inland. Evacuation of low-lying residences within several feet of shoreline possibly required.

Category 4 – Winds 131 to 155 miles per hour. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows and doors. Complete failure of roofs in many small residences. Complete destruction of mobile homes and/or **Storm surge 13 to 18 feet above normal.** Flat terrain 10 feet or less above sea level flooded inland. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut-off by rising water 3 to 5 hours before hurricane's center arrives. Major erosion of beaches. Massive evacuation of all residences within 50 feet of shore possibly required.

Category 5 – Winds greater than 155 miles per hour. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete destruction of poorly constructed timber homes and/or **storm surge greater than 18 feet above normal.** Major damage to lower floors of all structures less than 15 feet above sea level within 100 feet of shore. Low-lying escape routes inland cut-off by rising water 3 to 5 hours before hurricane's centre arrives. Massive evacuation of residential areas on low ground within 1 mile of shore possibly required.

- Make plans to work with limited cash, and no, sewer or power for two weeks. Store emergency supplies at the office.

Protect Your Employees

- Employee safety comes first! Prepare, distribute and exercise your business hurricane plan for recovery. Consider providing shelter to employees and their families and helping employees with supplies after the storm.
- Establish a call-down procedure for warning and post-storm communications. Provide photo ID's.

Contact Your Customers and Suppliers

- Share your communications and recovery plan in advance. Prepare a list of vendors to provide disaster recovery services.

After The Storm

- Use caution before entering your business. Check for downed power lines, gas leaks and structural damage. If any electrical equipment is wet, contact an electrician. Prepare loss information for insurance claims and get independent estimates of damages. Take pictures before cleanup. Minimize additional damage.

- Chickens in the backyard and other domestic birds must be placed in a safe cage or box.
- Chemicals, fertilizers and other toxic materials should be stored in the safest sections of buildings. Chemical exposure can cause serious injuries to people as well as animals.
- Ensure that roofs of poultry and pig pens are properly fastened.

PROTECT YOUR BUSINESS

Use the following checklist to prepare a Business Disaster Recovery Plan:

Know Your Risk

- Have your building(s) inspected by a licensed professional to find out if your workplace is vulnerable to hurricane force winds and what is recommended to retrofit.

Take The Necessary Precautions

- Take the necessary precautions. If a storm threatens, secure your building. Cover windows. Cover and move equipment/furniture to a secure area.
- ALWAYS protect your data with backup files. If dependent on data processing, consider an Alternate site. Make provisions for alternate communications and power.

PROTECT YOUR HOME

There are some specific actions you should take to make your home safer. You may feel more comfortable with an experienced inspector, architect, engineer or contractor inspecting your home. Whatever choice you make, take time to do this well before the storm. To withstand the forces of wind and water associated with severe weather, there are three (3) major considerations: (1) roof bracing; (2) entry doors; and (3) window protection.

Roof

During a hurricane event, the force of the winds pushes against the outside of your home and is passed along from your roof to the exterior walls and foundation. So the type of roof one has and the way it is constructed, makes a big difference.

- Install hurricane straps when your house is being built. It can be a somewhat tedious process if they are to be installed after the fact.
- Check your roof annually for loose screws or nails and damaged roof sheeting. Repair and replace according to the Bahamas Building Code.

Entry Doors

- Entry doors are easily damaged by high winds. Bolt all doors with foot and head bolts with a minimum one inch bolt throw length.

Windows

Protecting your windows is perhaps one of the most important factors in securing your home or office from total destruction in a hurricane or severe storm.

- Make sure all doors and windows are properly caulked and/or weather-stripped.
- Cover all large windows and glass doors with securely fastened, impact-resistant shutters with proper mounting fixtures or replace them with impact resistant laminated window and door systems, if feasible.

Various Methods of Window Protection Include:

- Plywood Sheet (at least 5/8") are inexpensive but difficult to handle and install. They should be pre-measured, pre-drilled, labelled and stored where they can be installed quickly.
- Shutters offer good window protection, but make sure they are strong enough to withstand air-borne debris. Steel panels are cost effective and tend to be easier to handle and store than plywood. Colonial and Bahama style shutters offer convenience of minor preparation and no storage. "Roll down" shutter systems offer protection with little maintenance; however, a motorized system is more expensive than the other alternatives. Choose shutters that pass both the small and large missile impact

TIPS FOR FISHERMEN

- Remove as many fish-pots as you can from the sea and store them on land as far away from the sea as possible. Use plenty of strong rope to tie and secure the fish-pots on land.
- As much as possible, reduce or do not carry out to sea any new fish-pots during the hurricane season, especially between the months of August to October.
- Remove all fishing gear from the sea. Store them securely on the land, far away from the sea as possible.

TIPS FOR FARMERS

- Let livestock, such as cattle, sheep, goats and horses graze in an open field. Tying increases the chance of injury.



- Switch off all electrical supply to pens, water pumps, etc.
- Remove all loose material such as galvanized sheeting, plyboards, empty containers etc. These can turn into missiles and injure animals.

- Arrange training for your staff in First Aid, seminars in planning and recovery. Encourage them to have a grab bag available at home and train them thoroughly in your business's preparation and recovery plans.
- Purchase materials early as stocks may run low quickly in the advent of a storm.
- Ensure all electronic documents are suitably backed up and disks stored safely.
- Familiarize yourselves with the national disaster plan and any agencies which may have information which could help preparedness and recovery.

IF YOU HAVE A YACHT

- Moor your boat securely before the storm arrives, or move it to a designated safe area early. Do not stay on the boat.



- In addition to shutters, impact resistant windows and security films, new products have been developed to protect your windows and doors including impact resistant "screens" and flexible wind-abatement barriers.

When Building or Remodeling

- When replacing soffits, check for hurricane clips; install connections between roof truss and walls.
- When repairing roof, check the decking. Make sure it is secured and nailed properly.
- Install roof covering that is rated for hurricane force winds.
- When replacing windows or doors, consider impact resistant glass or some type of shutter/wind-abatement system.



AS THE STORM APPROACHES

These Simple Tasks Could Save Your Life & Your Home

- Listen for weather updates on local radio and/or television stations. Do not trust rumors, and stay tuned to the latest information.
- Check your Disaster Supplies Kit. Obtain any needed items.
- Refill prescriptions. Maintain at least a two weeks supply during hurricane season.
- Clear yard of potential flying debris, e.g. patio furniture, potted plants, bicycles and trash cans.
- Protect your windows and glass doors! Brace double entry doors at the top and bottom.
- Fill your car's gas tank and check oil, water and tires. Gas pumps don't operate without electricity.
- Secure your boat early.
- Leave the swimming pool filled and super-chlorinated. (cover the filtration system)
- Get cash. Banks and ATM's will not be in operation without electricity and few stores will be able to accept credit cards or personal cheques.

- If you evacuate, remember to take medications, written instructions regarding your care, your walker, wheel chair, cane or special equipment along with your bedding and other disaster supplies.
- If you will need assistance in an evacuation, please contact the National Emergency Management Agency or the Department of Social Services.

TIPS FOR HOTEL OPERATORS

- Without creating panic hoteliers should alert guests to the situation on an on-going basis once relevant bulletins are being received. Keep them posted of developments and appraised of your establishment's plans.
- If the situation deteriorates, consider suggesting their departure and assist those who wish to evacuate.
- Anyone staying should be briefed on shelter locations and procedures and provided with basic essentials. (non-perishable food, hygiene articles, water, bedding).
- Encourage guests to take responsibility for their own luggage and advise them of the dangers they may encounter during and after a storm.
- Discuss with your insurance agent the extent of your coverage and ensure it fits your requirements.
- Encourage your staff to understand the risks and the methods of preparedness and recovery available to them.

ADVICE FOR OLDER ADULTS

In The Bahamas we are particularly vulnerable to severe weather like hurricanes. The elderly is especially susceptible to their effects. Those who live alone, or are without the support of family or friends, must take special precautions in the event of an emergency situation. People who are frail or disabled (either mentally or physically) may need special assistance from family members, friends or Social Service Agencies. Older adults who are also caregivers may require outside assistance. Excessive stress and anxiety can contribute to increased episodes of illness, particularly for persons with heart disease. If an older adult lives in a nursing home, the administrator should be contacted to learn about the disaster plan for that facility.

Home Health Care and Homebound Patients

- Notify your care giver where you will be during a hurricane and when care can be re-established.
- If you are homebound and under the care of a physician, and do not have a home care provider, contact your physician.
- If you require respirators or other electric medical equipment, you should make prior medical arrangements with your physician. You should also register, in advance with your local power company.
- If you require oxygen, check with your supplier about emergency plans.

If You Live In A Sound Structure Stay At Home!

- Make sure your windows are protected and home is secured.
- Offer your home as shelter to friends or relatives who live in vulnerable areas.
- Clean containers for drinking water and your bathtub for storing water. Line the tub with plastic sheeting or clean shower curtain, or caulk the drain with silicone caulking – it will hold water for weeks and cleans up easily when dry. Plan on three gallons per person, per day for all uses.
- Check your Disaster Supplies Kit. Make sure you have at least a two-week supply of non-perishable foods. Don't forget a non-electric can opener.
- During the storm, stay inside and away from windows, skylights and glass doors. Find a safe area in your home – an interior, reinforced room, closet or bathroom on the lower floor.
- Wait for official word that the danger is over. Don't be fooled by the storm's calm "eye".
- If you lose power, turn off major appliances to reduce possibility of damage.
- If flooding threatens your home, turn off electricity at the main breaker.

