

# Hurricanes and Tropical Storms

**Learn about your community's hurricane risk.** Contact your local emergency management office, National Weather Service office, or American Red Cross chapter for more information on hurricanes and how to prepare for them. Contact your local emergency management office or planning and zoning office to find out if you live in an area prone to flooding during a hurricane or heavy rains. If you live in a risk area, learn what types of supplies should be stored to protect your home from floodwater. Knowing the elevation of your property will let you know if forecasted flood levels will affect your home.

## **AWARENESS MESSAGES**

### **Why talk about hurricanes?**

There are no other storms like hurricanes on earth. Each year, on average, 10 tropical storms (of which six become hurricanes) develop over the Atlantic Ocean, Caribbean Sea, or Gulf of Mexico. Many of these storms remain over the ocean. However, on average, five hurricanes strike the United States coastline every three years. Of these five, two are major hurricanes, category 3 or higher on the Saffir-Simpson Hurricane Scale. Major hurricanes have sustained winds above 110 miles (177 kilometers) per hour.

Timely warnings have greatly diminished hurricane fatalities in the United States. In spite of this, property damage continues to mount. There is little we can do about the hurricanes themselves; however, we can prepare for hurricanes and alert people when a hurricane threatens. To this end, the National Oceanic and Atmospheric Administration's National Weather Service (NWS) field offices and Tropical Prediction Center cooperate with other federal, state, and local agencies; rescue and relief organizations; the private sector; and the news media in a huge warning and preparedness effort.

### **What are hurricanes?**

Hurricanes and tropical storms are cyclones with tropical origins (tropical cyclones). Tropical storms have winds of 39 to 73 miles (63 to 117 kilometers) per hour. When these winds reach 74 miles (119 kilometers) per hour or more, the storm is called a hurricane. Hurricane winds blow in a large counterclockwise spiral around a relatively calm center known as the "eye." The eye is generally 20 to 40 miles (32 to 64 kilometers) wide and the storm may have a diameter of 300 miles (483 kilometers). A single hurricane can last more than two weeks over open waters and can run a path along the entire length of the eastern U.S. seaboard.

### **What hazardous conditions do hurricanes cause?**

Hurricanes bring a variety of life-threatening hazards—chief among them is flooding. Most deaths due to tropical cyclones are flood related.

Hurricanes commonly cause inland flooding. Torrential rains from decaying hurricanes and tropical storms can produce extensive urban and river flooding, landslides, and mudslides in mountainous regions. Winds from these storms can drive ocean water up the mouth of coastal rivers, compounding the severity of inland flooding.

The storm surge, though, remains the greatest threat from a hurricane. A storm surge is the rise in ocean level along a coastline caused by a hurricane. It can be a dome of ocean water 20 feet (6 meters) high at its peak and 50 to 100 miles (80 to 161 kilometers) long. If a storm surge occurs near the time of high tide, the height of the water will be even greater. A storm tide is the combination of storm surge and high tide. A storm surge can devastate coastal communities as it sweeps ashore. In recent years, the fatalities associated with storm surge have been greatly reduced as a result of better warning and preparedness in coastal communities.

Strong winds can create large areas of devastation, destroying mobile homes, tearing off roofs, and toppling power lines and trees. Hurricane-force winds can extend well inland from the coast, with the strongest sustained winds normally on the right side of the hurricane based on the heading. If the hurricane is heading north, the strongest winds will be in the eastern half of the storm. In addition, hurricanes can spawn tornadoes, which add to the destructiveness of the storm.

### **How can I protect myself in a hurricane situation?**

Preparation is the best protection against the dangers of a hurricane. Well before a hurricane threatens, people should make their homes as “hurricane proof” as possible and plan and practice what they will do if they are advised to evacuate. And most important, people should evacuate the area if advised by authorities to do so, even if they themselves do not think the situation looks threatening.

Eighty to 90 percent of the people who live in hurricane-prone areas have never experienced the core of a major hurricane. Many of these people have been through weaker storms and have a false impression of a hurricane's damage potential. This can lead to complacency and delayed actions that result in injuries and death. Over the past several years, the hurricane warning system has provided adequate time for people on barrier islands and the immediate coastline to move inland when hurricanes threaten. However, it is becoming more difficult to evacuate people from the barrier islands and other coastal areas because road construction has not kept pace with the rapid population growth. If authorities advise people to evacuate, it is best to leave as soon as possible to avoid traffic tie-ups.

The best ways to protect your home are to install permanent hurricane shutters on windows and doors, tie the roof to the mainframe of your home with metal straps, and prepare a “wind safe” room. (See Appendix: “Wind Safe” Room.) NOTE: a “wind safe” room would be used only for locations where residents have not been asked to leave or evacuate. If you do not have permanent hurricane shutters, use plywood. Well before there is the threat of a hurricane, buy half-inch plywood boards suitable for outside use—marine plywood is best. Cut the boards to fit the outside frame of each window and door; drill the holes for the screws and install the anchors so you can quickly board up your home if necessary. Write on each board which opening it fits. Do not tape glass. Taping does not prevent glass from breaking and takes critical time from more effective preparedness measures.

Every home in hurricane-prone areas should have ready the items needed to board up windows and doors. When a hurricane threatens, supplies are quickly sold out at stores. Most homes destroyed during recent hurricanes had no window protection. When wind enters a home through broken windows, the pressure that builds against the walls can lift a roof and cause walls to collapse.

Make sure that you protect any outbuildings that may house animals in the same way you protect your home.

**What is the best source of information in a hurricane situation?**

Local radio or television stations or a NOAA Weather Radio are the best sources of information in a hurricane situation for official weather and weather-related bulletins.

NOAA Weather Radio is the prime alerting and critical information delivery system of the National Weather Service (NWS). NOAA Weather Radio broadcasts warnings, watches, forecasts, and other hazard information 24 hours a day over more than 650 stations in the 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific territories.

The NWS encourages people to buy a weather radio equipped with the Specific Area Message Encoder (SAME) feature. This feature automatically alerts you when important information is issued about hurricanes or other weather-related hazards for your area. Information on NOAA Weather Radio is available from your local NWS office or at [www.nws.noaa.gov/nwr](http://www.nws.noaa.gov/nwr).

**Watch, Warning**

- A **Hurricane/Tropical Storm WATCH** means there is a threat of hurricane/tropical storm conditions within 36 hours. People in a watch area should review their hurricane plans (Family Disaster Plan, Disaster Supplies Kit, evacuation routes), keep informed, and be ready to act if a warning is issued.
- A **Hurricane/Tropical Storm WARNING** means hurricane/tropical storm conditions are expected in 24 hours or less. When a warning is issued, people should complete their storm preparations and leave the threatened area if directed to do so by local officials.

A **hurricane/tropical storm local statement**, issued every two to three hours by local National Weather Service (NWS) offices, summarizes all of the watches and warnings, evacuation information, and most immediate threats to an area.

Watches and warnings for hurricanes and tropical storms are issued by the NWS and broadcast on NOAA Weather Radio and on local radio and television stations.

**Is your community StormReady?** To help people prepare for the ravages of hazardous weather, the National Weather Service has designed StormReady, a program aimed at arming America's communities with the communication and safety skills necessary to save lives and property. More information is available at [www.stormready.noaa.gov/](http://www.stormready.noaa.gov/).

## **ACTION MESSAGES**

### **Be Prepared for a Hurricane**

#### **Protect Yourself**

##### **CORE ACTION MESSAGES**

- **Determine your risk.**
- **Consider flood insurance.**
- **Make an evacuation plan.**
- **Prepare members of your household.**

For general preparedness, every household should create and practice a Family Disaster Plan and assemble and maintain a Disaster Supplies Kit. In addition, every household should take hurricane-specific precautions and plan for and practice what to do in a hurricane situation.

#### **If you are at risk from hurricanes, you should:**

- **Talk to your insurance agent.** Homeowners' policies do not cover flooding from hurricanes. Ask about the National Flood Insurance Program (NFIP) or visit [www.fema.gov/nfip](http://www.fema.gov/nfip).
- **Ask about your community's hurricane preparedness plan.** The local emergency management office or local chapter of the American Red Cross should be able to provide you with details of this plan, including information on the safest evacuation routes, nearby shelters, and what conditions would trigger a recommendation to evacuate certain areas.
- **Develop a hurricane evacuation plan.** (See Appendix: "Evacuation and Sheltering and Post-disaster Safety.") All members of your household should know where to go if they have to leave. Making plans well in advance will help you avoid last-minute confusion.
- **Discuss hurricanes with members of your household.** Everyone should know what to do in case all members are not together. Discussing hurricanes and reviewing flood safety and preparedness measures ahead of time will help reduce fear and save precious time in an emergency.
- **Determine where to move your boat in an emergency.** Marinas and other storage facilities may fill up quickly. Some locations may have less risk of damage than others. You may be required to secure your boat well in advance of an approaching hurricane.
- **Protect your animals.** Ensure that any outbuildings, pastures, or corrals that house animals are protected in the same way as your home. When installing or changing fence lines, consider placing them in such a way that your animals are able to move to higher water in the event of flooding. Get rid of debris around your home and any outbuildings as well as in pastures.
- **Know where to go with your animals.** Because evacuation shelters generally do not accept pets, except for service animals, you must plan ahead to ensure that your family and pets will have a safe place to stay. Do this research well before disaster strikes. See chapter on **Evacuation and Sheltering, and Post-disaster Safety** for more information on planning for evacuating your animals.

## Protect Your Property

### CORE ACTION MESSAGES

- **Keep an “in case of hurricane” to-do list.**
- **Get proper protection for all windows and doors.**

**If you are at risk from hurricanes, well before a hurricane threatens, you should:**

- **Make a list of items to bring inside in the event of a storm.** A list will help you remember anything that can be broken or picked up by strong winds.
- **Install permanent hurricane shutters if possible.**
- **If you do not have hurricane shutters, buy the plywood and other items needed to board up windows and doors.** Get half-inch outdoor plywood— marine plywood is best. Cut it to fit the outside frame of each window and door and drill the holes and install the anchors for the screws. Write on each board which window it fits. **Do not tape windows.** Taping does not prevent windows from breaking and takes critical time from more effective preparedness measures.
- **Remove any debris or loose items in your yard.** Hurricane winds, often in excess of 100 miles (161 kilometers) per hour, can turn unanchored items into deadly missiles.
- **Keep trees and shrubbery trimmed.** Make trees more wind resistant by removing diseased or damaged limbs, then strategically remove branches so that wind can blow through. Hurricane winds frequently break weak limbs and hurl them at great speed, damaging whatever they hit. Debris collection services may not be operating just before a storm, so it is best to do this well in advance of an approaching storm.
- **Fix loose rain gutters and downspouts and clear them if they are clogged.** Hurricanes often bring long periods of heavy rain. Cleaning and securing drainage systems will help protect your home from water damage.
- **Strengthen garage doors.** Hurricane winds can enter through a damaged garage door, lift the roof, and destroy the home.
- **Have an engineer check your home and tell you about ways to make it more resistant to hurricane winds.** There are a variety of ways to protect your home. Professionals can advise you of engineering requirements, building permits, or local planning and zoning regulations that could help you protect your home, and can inspect your home to see if the roof is tied to the mainframe securely with metal straps, the house is bolted to its foundation, and the best place in your home to prepare a “wind safe” room.
- **Elevate coastal homes.** Raising structures to a certain height will make them more resistant to hurricane-driven water. There may be many local codes affecting how and where homes can be elevated. Meet with your emergency manager or planning and zoning official to learn about having your home elevated. Community funds may be available for such measures.
- **If you live in a floodplain or area prone to flooding, follow flood preparedness precautions.** Tropical cyclones can bring great amounts of rain and frequently cause floods. Some hurricanes have dropped more than 10 inches (25 centimeters) of rain in just a few hours.
- **Take similar measures to protect your animals.** Make sure that you strengthen and protect any outbuildings that may house animals in the same way you protect your home.

- **Explore sheltering options for your pets.** Contact relatives, friends, hotels and motels, and other facilities to make a definite plan for sheltering your animals. Many communities are developing emergency animal shelters similar to shelters for people. Contact your local emergency management agency to find out about emergency animal shelters in your community, in the event that you have nowhere else to go and need to go to public shelter with your animals.
- **Include your pets in your evacuation and sheltering drills.** Practice evacuating your pets so they will get used to entering and traveling calmly in their carriers. If you have horses or other large animals, be sure that they are accustomed to entering a trailer. Practice bringing your pets indoors, into your safe room, so that if you are required to shelter in place, they will be comfortable.

## What to Do During a Hurricane/Tropical Storm Watch

### CORE ACTION MESSAGES

- Listen to and watch local news.
- Prepare your home.
- Evacuate if advised by authorities.
- Avoid floodwater.

### You should:

- **Use a NOAA Weather Radio or listen continuously to a local station on a portable, battery-powered radio or television.** Hurricanes can change direction, intensity, and speed suddenly. What was a minor threat several hours ago can quickly escalate to a major threat.
- **Heed the advice of local officials, and evacuate if they advise it.** (See Appendix: What to Do if Evacuation Is Necessary Because of a Storm.) Following their advice is your best protection. Avoid flooded roads and watch for washed-out bridges. Local officials may close certain roads, especially near the coast, when effects of the hurricane reach the coast.
- **Prepare your property for high winds.** Hurricane winds can lift large, heavy objects and send them crashing into homes. Anything not secured may become a deadly or damaging projectile.
  - Bring lawn furniture inside, as well as outdoor decorations or ornaments, trash cans, hanging plants, or anything else that can be picked up by the wind.
  - Secure your home by closing the windows and doors and then closing the hurricane shutters. If you do not have hurricane shutters, close and board up all windows and doors.
  - If possible and if it can be safely done, remove outside antennas.
  - Moor a boat securely or move it to a designated safe place. Use rope or chain to secure a boat to a trailer. Use tie-downs to anchor a trailer to the ground or to a building.
- **Fill your car's gas tank.** If advised to evacuate, you may have to travel a long distance or you may be stuck in traffic for a long time. Gas stations along the route may be closed.
- **Stock up on prescription medications.** Stores and pharmacies may be closed after the storm.

- **If you are in a mobile home, check the tie-downs.** Mobile homes may be less affected by strong winds if they are tied down according to the manufacturer's instructions. Properly tied-down homes are more likely to stay fixed to their foundations. Historically, mobile homes suffer the greatest amount of damage during hurricanes. Prior to 1994, most mobile homes were not designed to withstand even moderate winds.
- **Check your Disaster Supplies Kit.** Some supplies may need to be replaced or restocked.
- **Turn the refrigerator and freezer to the coldest setting.** Open them only when absolutely necessary, then close them quickly. Keeping the coldest air in will help perishables last much longer in the event of a power failure.
- **Store valuables and personal papers in a safe-deposit box or in a waterproof container on the highest level of your home.** Hurricanes can cause much water damage inside homes. Protecting valuables in this manner will provide the best security.
- **Turn off utilities if told to do so by authorities.** Authorities may ask you to turn off water or electric utilities to prevent damage to your home or within the community. Most of the time they will tell you to leave the gas on because, if you shut it off, a professional is required to turn your gas back on, and it may be several weeks before you receive service.
- **Turn off propane tanks.** Propane tanks may be damaged or dislodged by strong winds or water. Turning them off reduces the fire potential.
- **Unplug small appliances.** Small appliances may be affected by electrical power surges that may occur as the storm approaches. Unplugging them reduces potential damage.
- **Review your evacuation plan.** Make sure your planned route is the same as the currently recommended route. Sometimes roads may be closed or blocked, requiring a different route.
- **Stay away from floodwater.** If you come upon a flooded road, turn around and go another way. Most hurricane-related deaths are caused by floods from heavy rainfall. The National Hurricane Center reports that more than one-third of inland flooding deaths involve people trapped in cars while trying to escape rising water. The depth of water is not always obvious. The roadbed may be washed out under the water, and you could be stranded or trapped. Rapidly rising water may stall the engine, engulf the vehicle and its occupants, and sweep them away. As little as six inches of water may cause you to lose control of your vehicle and two feet (0.6 meter) of water will carry away most automobiles, SUVs, and pickup trucks.
- **Consider a precautionary evacuation of large or numerous animals.** If you think an evacuation might be advised or ordered and if you have large, unusual, or numerous animals, start evacuating them as soon as you are aware of impending danger. If you are using a horse or other trailer to evacuate your animals, move early rather than wait until it may be too late to maneuver a trailer through slow traffic. The winds or water may be too high, or other hazards may make this too dangerous for you and for them.

## What to Do During a Hurricane/Tropical Storm Warning

### CORE ACTION MESSAGES

- Listen to and watch local news.
- Evacuate if advised by authorities, or stay inside.
- If in a mobile home, evacuate immediately.
- Avoid floodwater.

### You should:

- **Use a NOAA Weather Radio or continuously listen to a local station on a portable, battery-powered radio or television.** Hurricanes can change direction, intensity, and speed suddenly.
- **If officials advise you to leave your home, go as soon as possible.** (See Appendix: What to Do if Evacuation Is Necessary Because of a Storm.) Take your Disaster Supplies Kit and go to a shelter or to the out-of-town contact identified in your Family Disaster Plan. Call your contact and tell him or her when you are leaving and where you are going. Local officials will advise you to evacuate only if they conclude that you are in danger. It is important to follow their instructions as soon as possible. Roads may become blocked and the storm can worsen, preventing safe escape.
- **If you evacuate, take your pets with you.** If it is not safe for you, it is not safe for them. Be sure to take your pet disaster kit with you. (See Disaster Supplies Kit for information about what should be in this kit.) Leaving them will endanger not only your pets, but also yourself and emergency responders.
- **If you are not advised to evacuate, stay indoors, away from windows, skylights, and doors, even if they are covered.** Stay on the floor least likely to be affected by strong winds and floodwater. A small interior room without windows on the first floor is usually the safest place. Have as many walls between you and the outside winds as possible. Sometimes strong winds and projectiles may tear hurricane shutters off, so stay away from windows even if they are covered. Lie on the floor under a table or other sturdy object. Being under a sturdy object will offer greater protection from falling objects.
- **Close all interior doors.** Secure external doors. Closed doors will help prevent damaging hurricane winds from entering rooms.
- **Have a supply of flashlights and extra batteries handy.** Flashlights provide the safest emergency lighting source. **DO NOT USE CANDLES.** Do not use kerosene lamps, which require a great deal of ventilation and are not designed for indoor use.
- **Store drinking water in clean plastic bottles and cooking utensils.** (See Appendix: Storing Water.) Public water supplies and wells may become contaminated, or electric pumps may be inoperative if power is lost. Often, a person's greatest need following a disaster is water.
- Fill bathtubs and sinks with water to use for flushing the toilet and washing floors and clothing. Do not use water that has been stored in glazed tubs or sinks for drinking or to bathe young children because over time lead can leach from the glaze into the water.
- **If power is lost, turn off major appliances to reduce the power surge when electricity is restored.** When electricity is restored, the surge from many major appliances starting at the same time may cause damage or destroy the appliances. Turning off or unplugging major appliances will allow you to decide when it is best to turn them back on.

- **If you are in a mobile home, recheck the tie-downs and evacuate immediately.**
- **Be aware that the calm "eye" is deceptive; the storm is not over.** Once the eye passes over your area, the winds increase and blow from the opposite direction. Trees, shrubs, buildings, and other objects damaged by the first winds can be broken or destroyed by the second winds. The opposing winds begin suddenly and have surprised and injured many people who ventured out during the eye.
- **Watch out for flooding.** Hurricanes and tropical storms often drop large amounts of rain and cause severe flooding, even when they are weakening or are no longer a named storm. "Weak" tropical storms are just as capable of producing heavy rain and flooding as major hurricanes.
- **Be alert for tornadoes.** Tornadoes can happen during a hurricane. If a tornado occurs in connection with a hurricane, remain indoors on a lower level, in the center of your home, in a closet or bathroom without windows.
- **Bring your companion animals indoors and maintain direct control of them.** Be sure that your pet disaster kit is ready to go, along with your family disaster kit, should you need to evacuate.
- **If the storm is predicted to be not very strong and if pastured animals have access to high ground, it is better to let them out into their pastures than to leave them in a barn,** unless that barn is very well constructed and protected. Horses and cattle are able to avoid windborne debris if they have enough area to move. In the last hours before a hurricane or tropical storm hits, it may be safer to do this than to attempt a last-minute evacuation.

## What to Do After a Hurricane/Tropical Storm

### CORE ACTION MESSAGES

- Listen to and watch the news.
- Watch for floodwater.
- Check for dangers inside and outside.

### After a hurricane is over, you should:

- **Continue using a NOAA Weather Radio or listening to a local station on a portable, battery-powered radio or television.** Access may be limited to some parts of the community, or roads may be blocked.
- **If you evacuated, return home when local officials tell you it is safe.** Local officials on the scene are your best source of information about accessible areas and passable roads.
- **Stay alert for extended rainfall and subsequent flooding, even after the hurricane or tropical storm has weakened.** Hurricanes may stall or change direction when they make landfall, or they may bring a lot of rain upriver, causing additional flood hazards for hours or days after the storm.
- **Stay away from floodwater.** Drive only if absolutely necessary and avoid flooded roads and washed-out bridges. Continue to follow all flood safety messages. Floodwaters may last for days following a hurricane. If you come upon a flooded road, turn around and go another way. Never try to walk, swim, or drive through swiftly moving water. Many flood fatalities are caused by people attempting to drive through water or people playing in high water. If it is moving swiftly, even water six inches (15 centimeters) deep can sweep you off your feet, and two feet (0.6 meter) can carry away most vehicles. Also, standing water may be electrically charged from underground or downed power lines.

- **If you come upon a barricade, follow detour signs or turn around and go another way.** Barricades are put up by local officials to protect people from unsafe roads. Driving beyond them can be a serious risk.
- **Help injured or trapped persons.** Give first aid where appropriate. Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help.
- **Help people who require special assistance**—infants, elderly people, those without transportation, large families who may need additional help in an emergency situation, people with disabilities, and the people who care for them.
- **If someone needs to be rescued, call professionals with the right equipment to help.** Many people have been killed or injured trying to rescue others in flooded areas.
- **Stay away from damaged areas.** Your presence might hamper rescue and other emergency operations, and put you at further risk from the residual effects of floods, such as contaminated water, crumbled roads, landslides, mudflows, and other hazards.
- **Avoid loose or dangling power lines;** immediately report them to the power company or the police or fire department. Reporting potential hazards will get the utilities turned off as quickly as possible, preventing further hazard and injury.
- **Stay out of any building that has water around it.** Floodwater often undermines foundations, causing buildings to sink, floors to crack, or walls to collapse.
- **Wear long pants, a long-sleeved shirt, and sturdy shoes.**
- **Use battery-powered lanterns or flashlights when examining buildings. DO NOT USE CANDLES.**
- **Examine walls, floors, doors, staircases, and windows to make sure that the building is not in danger of collapsing.**
- **Look for fire hazards.** There may be broken or leaking gas lines, flooded electrical circuits, or submerged furnaces or electrical appliances.
- **Check for gas leaks.** If you smell gas or hear a blowing or hissing noise, open a window and get everyone outside quickly. Turn off the gas, using the outside main valve if you can, and call the gas company from a neighbor's home. If you turn off the gas for any reason, it must be turned back on by a professional.
- **Look for electrical system damage.** If you see sparks or broken or frayed wires, or if you smell burning insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice. Electrical equipment should be checked and dried before being returned to service.
- **Check for sewage and water line damage.** If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company, and avoid using water from the tap. You can obtain safe water from undamaged water heaters or by melting ice cubes made before the hurricane struck. Turn off the main water valve before using water from these sources.
- **Avoid drinking or preparing food with tap water until you are certain it is not contaminated.** Hurricane-driven floodwater may have contaminated public water supplies or wells. Local officials should advise you on the safety of the drinking water.
- **Check refrigerated food for spoilage.** (See Appendix: Keeping Refrigerated Food Safe if the Power Goes Out.) If power was lost, some foods may be spoiled. If in doubt, throw it out.
- **Watch out for animals,** especially poisonous snakes, that may have come into buildings with the floodwater. Use a stick to poke through debris. Floodwater flushes many animals and snakes out of their homes.
- **Watch for loose plaster, drywall, and ceilings that could fall.**

- **Take pictures of the damage, both of the building and its contents, for insurance claims.**
- **Open windows and doors to ventilate and dry your home.**
- **Pump out flooded basements gradually (about one-third of the water per day) to avoid structural damage.** If the water is pumped out completely in a short period of time, pressure from water on the outside could cause basement walls to collapse.
- **Service damaged septic tanks, cesspools, pits, and leaching systems as soon as possible.** Damaged sewage systems are health hazards.
- **Use the telephone only for emergency calls.** Telephone lines are frequently overwhelmed in disaster situations. They need to be clear for emergency calls to get through.
- **Watch animals closely.** Keep all your animals under your direct control. Pets may become disoriented, particularly if the disaster has affected scent markers that normally allow them to find their home. Pets may be able to escape from your home or your fence may be broken. Be aware of hazards at nose and paw or hoof level, particularly debris, spilled chemicals, fertilizers, and other substances that might not seem to be dangerous to humans. In addition, the behavior of pets may change dramatically after a disaster, becoming aggressive or defensive, so be aware of their well-being and take measures to protect them from hazards, including displaced wild animals, and to ensure the safety of other people and animals.

For information on **portable-generator safety** and **carbon monoxide poisoning**, see Appendix: Portable Generators.

### **Media and Community Education Ideas**

- Ask your local newspaper or radio or television station to:
  - Do a series on the dangers of hurricanes and the importance of evacuating when authorities advise it.
  - Do a story featuring interviews with local officials about land-use management and building codes for coastal areas.
  - Highlight the importance of staying informed about local weather conditions.
  - Run public service ads about how to protect lives and property in a hurricane.

Help the reporters to localize the information by providing them with the local emergency telephone number for the fire, police, and emergency medical services departments (usually 9-1-1) and emergency numbers for the local utilities and hospitals. Also provide the business telephone numbers for the local emergency management office and local American Red Cross chapter.

- Work with officials of the local fire, police, and emergency medical services departments; utilities; hospitals; emergency management office; and American Red Cross chapter to prepare and disseminate guidelines for people with mobility impairments about what to do if they have to evacuate.
- Sponsor a "Helping Your Neighbors" program at your local schools to encourage students to think about how to help people who require special assistance, such as elderly people, infants, or people with disabilities, and the people who care for them.
- Provide hurricane tracking charts to local schools.
- At the beginning of each hurricane season, encourage the emergency response organizations to review community hurricane disaster plans.
- Publicize and promote a hurricane awareness week.
- Stage a simulated evacuation to show your community what can happen.
- Periodically inform your community of local public warning systems.
- Publish emergency evacuation routes.

## Facts and Fiction

**Fiction:** It is safe to go outside during the “eye” of the hurricane.

**Facts:** It is not safe to go outside during the “eye” of the hurricane. You have no way of knowing how long the light winds will last. Strong winds will return very quickly from the opposite direction. Stay indoors.

**Fiction:** Evacuations are ordered only because of liability.

**Facts:** Evacuations are ordered because there is a real danger of storm surge.

**Fiction:** Hurricanes strike only southern states.

**Facts:** Hurricanes have hit the coast from Texas to Maine.

**Fiction:** Hurricanes/tropical storms strike only during the official hurricane season of June 1 through November 30.

**Facts:** Hurricanes/tropical storms sometimes occur before or after the hurricane season. Tropical Storm Anna happened in April 2003. Hurricane Lili occurred in late December 1984.

**Fiction:** Hurricane destruction occurs only along the coast.

**Facts:** A hurricane’s effects (flooding, tornado, and wind damage) can be felt well inland. For instance, during Hurricane Hugo (September 10-22, 1989), Charlotte, N.C., which is 100 miles (161 kilometers) inland, experienced winds of 87 miles (140 kilometers) per hour, resulting in a swath of downed trees and power lines 50 miles (80 kilometers) wide.

**Fiction:** Taping windows protects them as effectively in a hurricane as boarding them up.

**Facts:** Taping does not prevent windows from breaking and takes critical time from more effective preparedness measures. All tape does is help prevent broken glass from scattering inside your home.

**Fiction:** Water stored in bathtubs and sinks is a good source of drinking water if the public water supply is interrupted or contaminated.

**Facts:** Over time, lead can leach from the glaze in bathtubs and sinks into water stored in them. Water stored in bathtubs and sinks should never be used for drinking or for bathing young children. You can use water stored in bathtubs and sinks for tasks such as flushing the toilet or washing the floor or clothing.