

# Preparation for Hurricane Season



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# Preparation for Hurricane Season



## Introduction

Hurricanes, there are no other storms like them in the atmosphere. They breed in warm tropical waters, require a complex combination of atmospheric processes to grow, mature, and then die. They are not the largest storm systems in our atmosphere or the most violent, but they combine these qualities as no other phenomenon does.

In the Atlantic Basin, they are called hurricanes, a term that echoes colonial Spanish and Caribbean Indian words for evil spirits and big winds. These awesome storms have been a deadly problem for residents and sailors ever since the early days of colonization.

Today, hurricane damage costs billions of dollars. During this century, 23 hurricanes have each caused damage in excess of \$1 billion (adjusted for inflation).

Even though the number of people injured or killed during hurricanes in the United States has been declining, our risk from them is increasing. With population and development continuing to increase along coastal areas, greater numbers of people and property are vulnerable to hurricane threat. Hurricanes cannot be controlled, but our vulnerability can be reduced through preparedness

## Action Checklist

Here is a list of the many things to consider before, during and after a hurricane. Some of the safety rules will make things easier for you during a hurricane. All are important and could help save your life and the lives of others.

### Stay or Leave?

When a hurricane threatens your area, you will have to make the decision whether you should evacuate or whether you can ride out the storm in safety at home.

If local authorities recommend evacuation, you should leave! Their advice is based on knowledge of the strength of the storm and its potential for death and destruction.

In general: Plan to leave if you live on the coastline, offshore islands, near a river or in a flood zone. If you live on high ground, away from coastal beaches, consider staying. Study the following list and carefully consider the factors involved especially the items pertaining to storm surge.

## **Hurricane Preparation Action Plan**

- Learn the storm surge history and elevation of your area
- Identify safe routes inland
- Identify the location of official shelters
- Determine where to move your boat in an emergency
- Trim back dead wood from trees
- Check for loose rain gutters and down spouts and repair as needed
- Have board lumber ready to cover your windows and doors if you do not have hurricane shutters or have duct tape on hand to tape windows.

## **Your Family Disaster Plan**

Where will your family be when disaster strikes?

They could be anywhere... at work, at school, or in the car.

How will you find each other?

Will you know if your children are safe?

Preparedness must begin with the individual!!!!!!

Disaster can strike quickly and without warning. It can force you to evacuate your neighborhood or confine you to your home. Local officials and relief workers will be on the scene after a disaster, but they cannot reach everyone right away. Families can, and do, cope with disaster by preparing in advance and working together as a team. Follow the four (4) steps to safety to create your family's disaster plan. Knowing what to do is your best protection and your responsibility.

### **FOUR (4) STEPS TO SAFETY**

#### **1. Find Out What Could Happen to You:**

Contact your local Office of Emergency Preparedness and American Red Cross chapter.

**Call (985) 867-3787.** Be prepared to take notes:

- Ask what types of disaster are most likely to happen. Request information on how to prepare for each.
- Ask about animal care after disaster. Animals may not be allowed inside emergency shelters due to health regulations.
- Find out how to help elderly or disabled persons, if needed.
- Next, find out about the disaster plans at your workplace, your children's school or daycare center, and other places where your family spends time.

#### **2. Create a Disaster Plan:**

Meet with your family and discuss why you need to prepare for disaster. Explain the dangers of fire, severe weather, and earthquakes to children. Plan to share responsibilities and work together as a team.

- Discuss the types of disasters that are most likely to happen. Explain what to do in each case.
- Pick two places to meet:
  - Right outside your home in case of a sudden emergency, like a fire.
  - Outside your neighborhood in case you can't return home. Everyone must know that location (the address and phone number.)

- c. Ask an out-of-state friend to be your "family contact". After a disaster, it's often easier to call long distance. Other family members should call this person and tell them where they are. Everyone must know your contact person's phone number.
- d. Discuss what do in an evacuation. Plan how to take care of your pets.

### **3. Complete This Checklist:**

**Call our Emergency Preparedness Office at (985) 867-3787.**

- a. Post emergency telephone numbers near phones (fire, police, ambulance, etc.)
- b. Teach children how and when to call 911 or your local Emergency Medical Services (EMS) number for emergency help.
- c. Find out which disasters could occur in your area.
- d. Ask how to prepare for each disaster.
- e. Ask how you would be warned of an emergency.
- f. Learn your community evacuation routes.
- g. Ask about special assistance for elderly or disabled persons.
- h. Determine the best escape routes from your home. Find two ways out of each room.
- i. Find the safe spots in your home for each type of disaster.

Also....

- a. Ask your workplace about emergency plans.
- b. Learn about emergency plans for your children's school or day care center.

### **4. Practice and Maintain Your Plan:**

- a. Quiz your kids every six months so they remember what to do.
- b. Conduct fire and emergency evacuation drills.
- c. Replace stored water every three months and stored food every six months.
- d. Test and recharge your fire extinguisher according to manufacturer's instructions.
- e. Test your smoke detectors monthly and change the batteries at least once a year.

## **DISASTER SUPPLY KIT**

Assemble the supplies you might need. Store them in an easy-to-carry container.

Include:

- A supply of water for drinking and cooking (One gallon per person per day). Stored in sealed, unbreakable containers.
- A supply of non-perishable packaged or canned food, and a non-electric can opener.
- A change of clothing, rain gear and sturdy shoes.
- Blankets or sleeping bags (1 per person).
- A first aid kit and prescription medications.
- An extra pair of eyeglasses, contact lens supplies.
- A battery-powered radio, flashlight and plenty of extra batteries.
- Credit cards and cash in a waterproof container.
- An extra set of car keys.
- A list of important family information; the style and serial number of medical devices such as pacemakers.
- Special items for infants, elderly or disabled family members, such as extra diapers, hearing aids, and medical certification.

- Books, magazines, cards, toys and games.
- Important documents in waterproof containers. (Insurance Policies)
- Photographs or videotapes of personal property as well as an up-to-date inventory of items (include serial numbers).
- Hygiene supplies.
- Shovel, axe and other useful tools.
- Fire extinguisher.

## **FIRST AID KIT**

You should have two first aid kits: one for your home, the other for your car, if you have one. An emergency first aid kit should include:

- Sterile adhesive bandages in assorted sizes
- 2-inch & 3-inch sterile gauze pads
- Hypoallergenic adhesive tape
- Triangular bandages
- 2-inch & 3-inch sterile roll bandages
- Scissors
- Tweezers
- Needle
- Safety razor blade
- Bar of soap
- Moistened towelettes
- Antiseptic spray
- Thermometer
- Tongue blades and wooden applicator sticks
- Tube petroleum jelly or other lubricant
- Safety pins in assorted sizes
- Cleansing agent/soap
- Latex gloves

Non-Prescription Drugs such as:

- Aspirin or non-aspirin pain reliever
- Anti-diarrhea medication
- Antacid (for stomach upset)
- Emetic (use to induce vomiting if advised by Poison Control Center)
- Laxative
- Eye Wash
- Rubbing alcohol
- Antiseptic or hydrogen peroxide
- Activated charcoal (use if advised by the Poison Control Center)

## **SUPPLIES AND EQUIPMENT**

Keep the following items in one place, so you can get to them easily:

- A battery-operated radio (with extra batteries)
- Blankets or sleeping bags
- A flashlight (with extra batteries)
- Paper plates and utensils, including a bottle and can opener
- Candles and matches (in a water proof container) or an oil or kerosene lantern
- Toilet articles and sanitary needs.

## **If the Electricity Goes Off...**

First, use perishable food and foods from the refrigerator. Then use foods from the freezer. To minimize the number of times you open the freezer door, post a list of the freezer contents on the door. In a well-filled, well-insulated freezer, foods will usually still have ice crystals in their center, (meaning the foods are safe to eat) for at least three days. Finally, begin to use nonperishable foods and staples.

## **Flood Insurance**

Purchase Flood Insurance! Most standard homeowners' insurance policies do not cover losses from flooding. Renters can also buy policies to protect their personal property.

You are eligible for flood insurance because St Tammany Parish participates in the National Flood Insurance Program.

In St Tammany Parish the purchase of flood insurance on a voluntary basis is wise even outside of Special Flood Hazard Areas. Call you insurance agent for flood insurance information.

Once you've purchased flood insurance keep your policy and an itemized list of your furnishings clothing and valuables in a safe place such as a safe deposit box. Call your agent or broker immediately if you suffer flood damage.

## **Watches And Warnings**

### **St. Tammany Parish Cable Television Emergency Information Channel 10- Access St. Tammany**

#### **State Emergency Alert Broadcasting System**

Northshore	106.7 FM
Greater N.O.	WWL 870 AM WLMG 101.9 FM
Baton Rouge	WJBO 1150 AM WFME 102.5 FM
Lafayette	KVOL 1330 AM KTDY 99.9 FM

## Watches and Warnings

### **Tropical Storm Watch**

Issued when a tropical storm or tropical storm conditions will pose a threat to coastal areas within 36 hours. A tropical storm watch will not be issued if the system is forecast to attain tropical storm strength.

### **Tropical Storm Warning**

Issued when tropical storm conditions with sustained wind speeds of 39 to 73 mph are expected in the coastal areas within 24 hours.

### **Hurricane Watch**

Issued for a coastal area when there is a threat of hurricane conditions within 24 to 36 hours.

### **Hurricane Warnings**

Issued when hurricane conditions are expected in the coastal areas within 24 hours. Hurricane conditions include winds of 74 mph or higher, and/or dangerously high tides and waves. Action for protection of life and property should begin immediately when the warning is issued. It should be noted that some additional action might be necessary, depending on the weather system, prior to a warning being issued.

### ***When a Hurricane Watch is Issued for Your Area***

- Check often for official bulletins on Channel 10 Access St. Tammany, radio, TV, or NOAA Weather Radio
- Fuel your vehicle
- Moor small craft or move to safe shelter
- Stock up on canned provisions and bottled water
- Check supplies of special medicines and drugs
- Check radio and flashlight batteries and replace them if necessary
- Secure lawn furniture and other loose material outdoors
- Tape, board, or shutter windows to prevent shattering
- Wedge sliding glass doors to prevent their lifting from their tracks

### ***When a Hurricane Warning is Issued for Your Area and You Plan to Stay***

- Stay tuned to Channel 10 Access St. Tammany, radio, TV, or NOAA Weather Radio for official bulletins
- Stay off the roads
- Board up garage and porch doors
- Move valuables to upper floors
- Bring in pets
- Fill containers (bathtub) with several days' supply of drinking water
- Turn up refrigerator to maximum cold and don't open unless necessary
- Use phone only for emergencies
- Stay indoors on the downwind side of house away from windows

### ***When a Hurricane Warning is Issued for Your Area and You Plan to Evacuate***

The St. Tammany Parish area is faced with a difficult challenge during an evacuation due to large population and limited road system, which is susceptible to flooding.

That is why the Office of Emergency Preparedness, urges people to "Plan to Be Safe" by voluntarily evacuating "high risk areas" before a recommended evacuation. See the high-risk areas.

If you plan to evacuate, leave as early as possible, before hurricane gale force winds, heavy rainfall and storm surge cause road closings.

There are three phases of evacuation: precautionary, recommended, and mandatory. An evacuation notice will be issued when a hurricane is forecast to present a danger to the St. Tammany Parish area. This notice to evacuate will be issued depending on the landfall probability in this area and also on the speed and severity of the storm.

### **Evacuation information:**

- Shut off water and electricity
- Take small valuables and papers but travel light
- Make sheltering plans for pets, general shelters will not take them.
- Lock up house
- Leave early in daylight if possible
- Drive carefully to nearest designated shelter using recommended evacuation route

### **After the Hurricane**

#### **When the hurricane has passed:**

1. If you are out of state, call **1-866-898-2323** for reentry information.
2. Remain in shelter until informed by local authorities that it is safe to leave.
3. Use caution re-entering home.
4. Keep tuned to your local radio or television station for advice and instructions from your local government on:
  - Where to go to obtain necessary medical care in your area.
  - Where to go for necessary emergency assistance for housing, clothing, and food.
  - Ways to help you and your community recover from the emergency.
5. Stay out of disaster areas. Sightseeing interferes with essential rescue and recovery work, and may be dangerous as well.
6. Drive carefully along debris-filled streets. Roads may be undermined and could collapse under the weight of a car. Watch for dangling electrical wires and flooded low spots.
7. Avoid loose or dangling wires, and report them immediately to your power company or to the local police or fire department.
8. Report broken sewer or water mains.
9. Check for gas leaks
10. Prevent fires. Because of decreased water pressure fire fighting becomes difficult.
11. Check refrigerated food for spoilage if power has been off during the storm.

### **Remember:**

Hurricanes moving inland can cause severe flooding. Stay away from levees, riverbanks, and streams until all potential flooding is passed. Local authorities will announce when it is safe to return to your home. Stay tuned to local stations for current information.

When you get home:

Look for visible structural damage before you go inside. Watch for loose or dangling electrical power lines and broken sewer lines.

## "Terms to Know"

**Flash Flood Watch:** means a flash flood is possible in the area; stay alert.

**Flash Flood Warning:** means a flash flood is imminent; take immediate action.

**Gale Warnings:** Issued when winds of 39- 54 miles an hour (34-47 knots) are expected. Storm Warnings may be issued when winds of 55- 73 miles an hour (48-63 knots) are expected. If a hurricane is expected to strike a coastal area, gale or storm warnings will not usually precede hurricane warnings.

**Hurricane:** An intense tropical weather system with a well-defined circulation and maximum sustained winds of 74 mph (64 knots) or higher. In the western Pacific, hurricanes are called "typhoons," and similar storms in the Indian Ocean are called "cyclones."

Hurricanes are products of the tropical ocean and atmosphere. Powered by heat from the sea, they are steered by the easterly trade winds and the temperate westerly as well as by their own ferocious energy. Around their core, winds grow with great velocity, generating violent seas. Moving ashore, they sweep the ocean inward while spawning tornadoes and producing torrential rains and floods.

**Hurricane Watch:** is issued for a coastal area when there is a threat of hurricane conditions within 24-36 hours.

**Hurricane Warning:** is issued when hurricane conditions are expected in a specified coastal area in 24 hours or less. Hurricane conditions include winds of 74 miles an hour (64 knots) and/or dangerously high tides and waves. Actions for protection of life and property should begin immediately when the warning is issued.

**Small craft cautionary statements:** When a tropical cyclone threatens a coastal area, small craft operators are advised to remain in port or not to venture into the open sea.

**Storm surge:** A large dome of water often 50 - 100 miles wide that sweeps across the coastline near where a hurricane makes landfall.

**Tropical depression:** An organized system of clouds and thunderstorms with a defined circulation and maximum sustained winds of 38 mph (33 knots) or less.

**Tropical disturbance:** A moving area of thunderstorms in the Tropics that maintains its identity for 24-hours or more (A common phenomenon in the tropics).

**Tropical storm:** Distinct rotary circulation, constant wind speed ranges 39-73 miles per hour (34-63 knots).

## "Saffir-Simpson Hurricane Scale"

All Hurricanes are dangerous, but some are more so than others. The way storm surge, wind and other factors combine determines the hurricanes destructive power.

To make comparisons easier and to make the predicted hazards of approaching hurricanes clearer to emergency managers, National Oceanic and Atmospheric Administration's hurricane forecasters use a disaster-potential scale which assigns storms to five categories. This can be used to give an estimate of the potential property damage and flooding expected along the coast with a hurricane.

Herbert Saffir, a consulting engineer, and Dr. Bob Simpson, director of the National Hurricane Center formulated the scale in 1969. The World Meteorological Organization was preparing a report on structural damage to dwellings due to windstorms, and Dr. Simpson added information about storm surge heights that accompany hurricanes in each category.

Category	Winds	Effects
One	74-95 mph	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal road flooding and minor pier damage
Two	96-110 mph	Some roofing material, door, and window damage to buildings. Considerable damage to vegetation, mobile homes, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of center. Small craft in unprotected anchorages break moorings.
Three	111-130 mph	Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain continuously lower than 5 feet ASL may be flooded inland 8 miles or more.
Four	131-155 mph	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach. Major damage to lower floors of structures near the shore. Terrain continuously lower than 10 feet ASL may be flooded requiring massive evacuation of residential areas inland as far as 6 miles.
Five	greater than 155 mph	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Major damage to lower floors of all structures located less than 15 feet ASL and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5 to 10 miles of the shoreline may be required.

# "Storm Facts"

## Storm Surge

Hurricanes are usually described in terms of their wind speeds, but flooding caused by the high water a storm brings, kills many more people than wind. Flooding also is responsible for much of the damage, especially within a few hundred yards of the shoreline. Boats ripped from their moorings, utility poles, parts of destroyed buildings, and other debris crashing in the waves atop hurricane surge, often destroy buildings that stood up to the wind. Even without the weight of debris, water is a powerfully destructive force. A cubic foot of seawater weighs 64 pounds.

A large dome of water often 50 to 100 miles wide that sweeps across the coastline near where a hurricane makes landfall. The surge of high water topped by waves is devastating. The stronger the hurricane and the shallower the offshore water, the higher the surge will be. Along the immediate coast, storm surge is the greatest threat to life and property.

Water does more than batter, it scours away the sand of beaches and dunes and can also have an impact on barrier islands. High water and pounding waves carry away the sand under sea walls, buildings, and roads. As the water begins rising sometimes hours in advance of the storm, it erodes the beach, the dunes and undercuts buildings behind the beach.

Storm surge isn't a killer only along beaches facing the ocean; water is also pushed into bays and rivers. As the surge of water squeezes up a narrowing bay or river, it rises even higher.

What happens when the surge comes ashore? The ultimate height of the "storm tide" is a combination of the astronomical tide and the storm surge. The surge normally does not arrive as a "wall of water," but more like a quick rise in the tide to extremely high levels.

A 2-foot normal high tide plus a 10-foot storm surge will push the water 12 feet above mean sea level. A surge's worst effect is to bring storm-whipped waves far inland; the battering of the waves causes far more damage than high water alone.

Hurricane protection levees have been built in many coastal communities, especially the New Orleans area, to protect life and property from storm surge. While these levees do a very good job in protecting communities during minimal hurricanes, sophisticated computer modeling of storm surge effects indicate most levees in southeast Louisiana would be overtopped from the storm surge generated by a direct strike by a major hurricane. The result would be widespread flooding.

If the storm surge arrives at the same time as the high tide, the water height will be even greater. The storm tide is the combination of the storm surge and the normal astronomical tide.

- Over 6,000 people were killed in the Galveston Hurricane of 1900, the most by the storm surge.
- Hurricane Camille in 1969 produced a 25-foot storm tide in Mississippi.
- Hurricane Hugo in 1989 generated a 20-foot storm tide in South Carolina

## **Heavy Rains/Floods:**

Widespread torrential rains often in excess of 6 inches can produce deadly and destructive floods. This is the major threat to areas well inland.

- Tropical Storm Claudette (1979) brought 45 inches of rain to an area near Alvin, Texas, contributing to more than \$600 million\* in damage.
- Long after the winds of Hurricane Diane (1955) subsided, the storm brought floods to Pennsylvania, New York, and New England that contributed to nearly 200 deaths and \$4.2 billion\* in damage.
- Hurricane Agnes (1972) fused with another storm system, producing floods in the United States which contributed to 122 deaths and \$6.4 billion\* in damage.

\* Adjusted to 1990 dollars

## **Winds:**

Hurricane-force winds, 74 mph or more, can destroy poorly constructed buildings and mobile homes. Debris, such as signs, roofing material, siding, and small items left outside, become flying missiles in hurricanes. Winds often stay above hurricane strength well inland.

- Hugo (1989) battered Charlotte, North Carolina (which is about 175 miles inland), with gusts to near 100 mph, downing trees and power lines and causing massive disruption.

## **Tornadoes:**

Hurricanes also produce tornadoes, which add to the hurricane's destructive power. These tornadoes most often occur in thunderstorms embedded in rain bands well away from the center of the hurricane. However, they can also occur near the eye wall.

## **Hurricane Risk Areas:**

- All Atlantic and Gulf coastal areas and barrier islands are subject to hurricanes or tropical storms. Due to the limited number of evacuation routes, barrier islands are especially vulnerable to hurricanes.
- Hurricanes affect inland areas with high winds, floods, and tornadoes. Listen carefully to local authorities to determine what threats you can expect and take the necessary precautions to protect yourself, your family, and your property.

## **Memorable Hurricanes**

- Camille - August 14-22, 1969: 27 inches of rain in Virginia caused severe flash flooding.
- Agnes - June 14-22, 1972: Devastating floods from North Carolina to New York produced many record-breaking river crests. The storm generated 15 tornadoes in Florida and 2 in Georgia.
- Hugo - September 10-22, 1989: Wind gusts reached nearly 100 mph as far inland as Charlotte, North Carolina. Hugo sustained hurricane-strength winds until shortly after it passed west of Charlotte.
- Andrew - August 16-28, 1992: Damage in the United States is estimated at \$25 billion, making Andrew the most expensive hurricane in United States history. Wind gusts in South Florida were estimated to be at least 175 mph.

## Naming Hurricanes

Using given names to refer to hurricanes in written and verbal communication is quicker and less error-prone than using the older more cumbersome latitude-longitude identification methods. These advantages are especially important in exchanging detailed storm information between hundreds of widely scattered stations, coastal bases, and ships at sea.

2002	2003	2004	2005	2006
Arthur	Ana	Alex	Arlene	Alberto
Bertha	Bill	Bonnie	Bret	Beryl
Cristobal	Claudette	Charley	Cindy	Chris
Dolly	Danny	Danielle	Dennis	Debby
Edouard	Erika	Earl	Emily	Ernesto
Fay	Fabian	Frances	Franklin	Florence
Gustav	Grace	Gaston	Gert	Gordon
Hanna	Henri	Hermine	Harvey	Helene
Isidore	Isabel	Ivan	Irene	Isaac
Josephine	Juan	Jeanne	Jose	Joyce
Kyle	Kate	Karl	Katrina	Keith
Lili	Larry	Lisa	Lee	Leslie
Marco	Mindy	Matthew	Maria	Michael
Nana	Nicholas	Nicole	Nate	Nadine
Omar	Odette	Otto	Ophelia	Oscar
Paloma	Peter	Paula	Philippe	Patty
Rene	Rose	Richard	Rita	Rafael
Sally	Sam	Shary	Stan	Sandy
Teddy	Teresa	Tomas	Tammy	Tony
Vicky	Victor	Virginie	Vince	Valerie
Wilfred	Wanda	Walter	Wilma	William