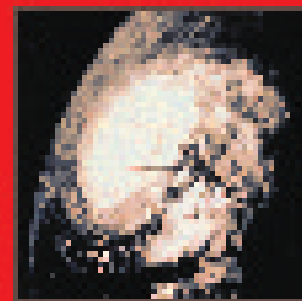


HURRICANE

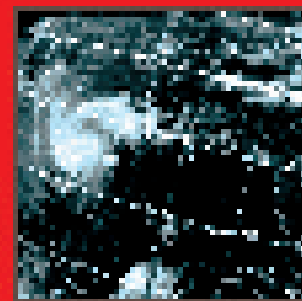
SURVIVAL GUIDE:

It only takes one!

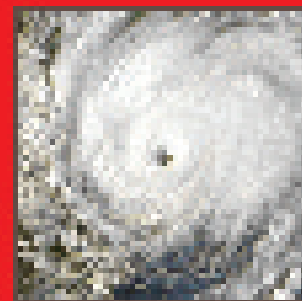
1967
Beulah



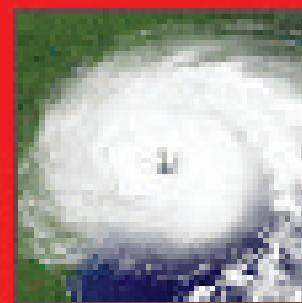
1970
Celia



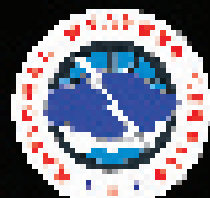
1999
Bret



2003
Clandette



MICHELLE	HOLLIS	SHARON
JANEY	JOAN	FRY
GLORIA	JAMES	HARVEY
EMILY	MARK	SUNNY
ERINNA	TONY	TONY
THOMAS	WILLIAM	KATHERINE
GLORIA	WILLIAM	WILLIAM



www.kitt.com

welcome

Our nation is in the midst of the most active hurricane episode on record in the Atlantic hurricane basin. Science indicates that this may persist for another decade or longer. The mid Texas coast has not experienced a direct assault from a major hurricane in 36 years, when Hurricane Celia crossed our coast line in 1970. However it is not a matter of if, but when the next storm will make landfall and change our community forever.

Coastal residents are at risk from the hurricanes deadly storm surge and destructive winds but often do not realize it. There are simple cost effective measures every citizen can take to mitigate their losses from a hurricane. For these reasons, your local National Weather Service office in Corpus Christi, along with several key partners, found it imperative to develop this comprehensive Hurricane Guide for our Coastal Bend community.

This Hurricane Guide will serve as your robust roadmap for action before, during and after the hurricane season. It is very important to plan accordingly to meet your personal and family needs. In this manner, we are all working together for a safer and prepared community.

Sincerely,

Scott C. Cordero

Meteorologist-In-Charge
National Weather Service
Corpus Christi, TX
Serving and Protecting South Texas Since 1870

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Preparedness before the storm
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Storm in the gulf Final Preparations
(pages 14-17)

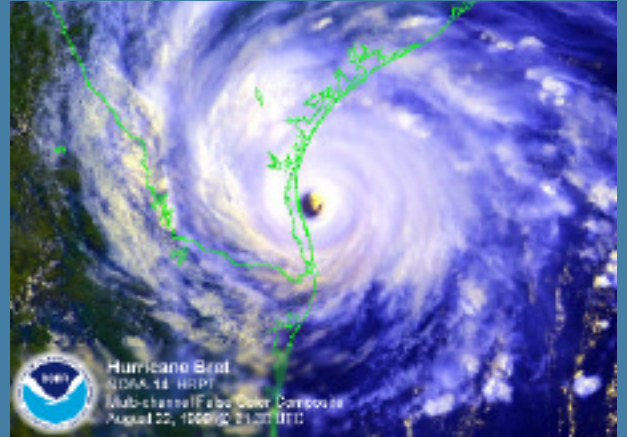
Evacuation & Emergency Info
(pages 18-19)

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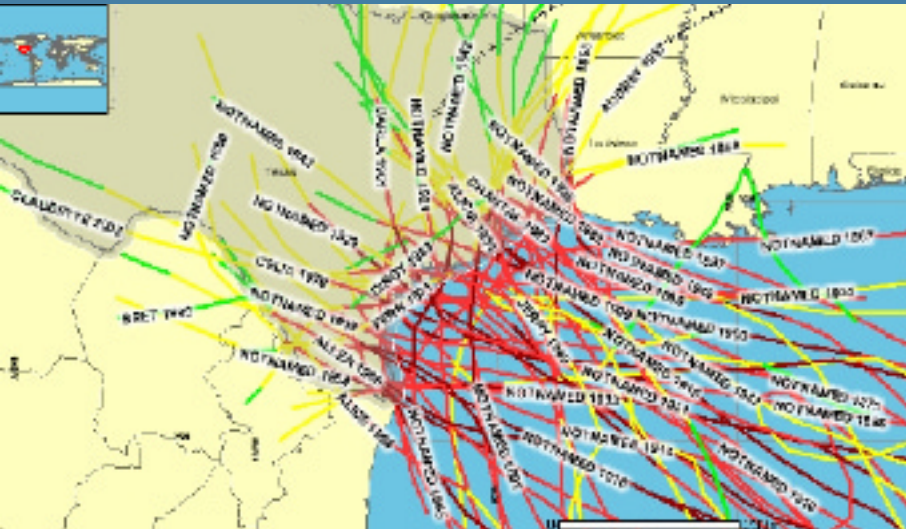


all about the hurricane

Hurricanes form over warm ocean waters, like those found in the Gulf of Mexico. The hurricane season starts on June 1 and extends through November 30. The peak threat for the Texas coast exists from August through September. However hurricanes can and have struck the Texas coast during every month of the hurricane season.



Satellite image of Hurricane Bret on August 22, 1999.



There have been a total of 51 hurricanes to strike the Texas coast since 1851. That is one every 3 years on average.

definitions to know

- **Tropical Depression** - An organized system of persistent clouds and thunderstorms with a closed low-level circulation and maximum sustained winds of 38 mph or less.
- **Tropical Storm** - An organized system of strong thunderstorms with a well defined circulation and maximum sustained winds of 39 to 73 mph.
- **Hurricane** - An intense tropical weather system with a well defined circulation and sustained winds of 74 mph or higher.
- **Tropical Cyclone** - A general term used to describe a tropical depression, tropical storm, or hurricane.
- **Hurricane/Tropical Storm Watch** - Hurricane/Tropical Storm conditions are possible in the watch area within 36 hours.
- **Hurricane/Tropical Storm Warning** - Hurricane/Tropical Storm conditions are expected in the warning area within 24 hours.

hurricane hazards

Storm Surge

Storm surge is a dome of water often 50 to 100 miles wide that sweeps across the coastline along and to the right of where the eye crosses the coast. In general, the stronger the winds in the hurricane, the higher the storm surge. If the hurricane makes landfall during high tide, the impact will be even greater.

historically the storm surge has claimed 9 out of 10 victims in a hurricane



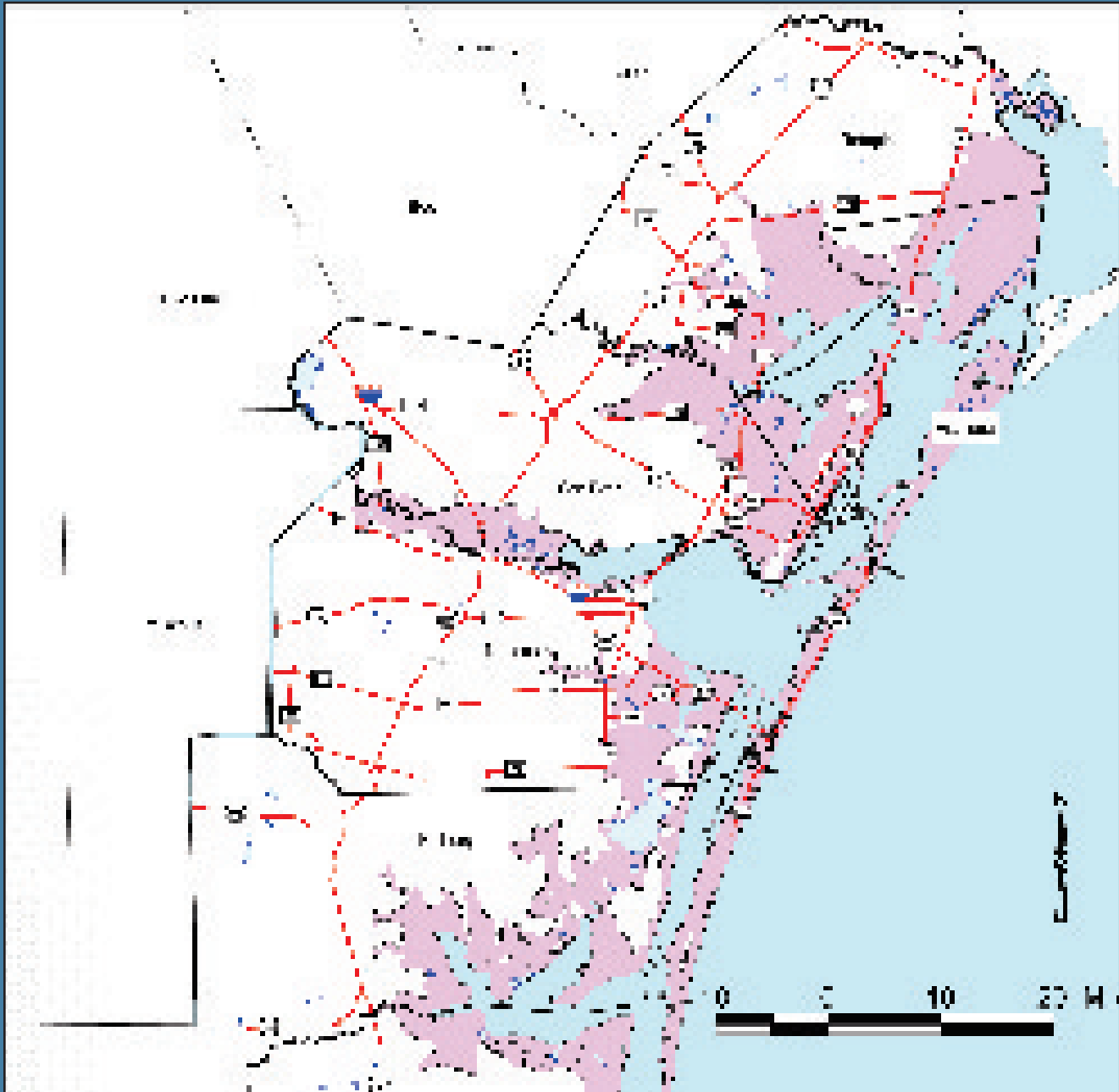
Biloxi, MS - Hurricane Katrina Storm Surge - Photo by FEMA

Storm Surge Facts:

- *The 1919 Hurricane that impacted Corpus Christi produced a storm surge 16 feet high and killed 284 people.*
- *Hurricane Carla in 1961, generated a 22 ft. storm surge at Port Lavaca.*
- *Hurricane Celia in 1970, generated a 11 ft. storm surge at Aransas Pass.*
- *The Great Galveston Hurricane in 1900 killed 8000 people, most by storm surge.*

hurricane hazards

Storm Surge Inundation Map



This worst case scenario map illustrates the potential inland penetration of a Category 5 Storm Surge ($\pm 20\%$ accuracy).

For more information check www.srh.noaa.gov/crp

hurricane hazards

Wind

Hurricane Force winds of 74 mph or more, can destroy buildings, mobile homes, trees and power poles. Debris, such as signs, roofing material, siding, and small items left outside, become flying missiles in a hurricane. The strongest winds occur in a region of the hurricane called the eyewall. Wind gusts in the right side of the eyewall are the most destructive. Hurricane force winds can be felt as far as 150 miles inland from the coast.

It is imperative to ensure your home, or business is well constructed to minimize the damage from the wind. See page 8 in this guide for cost effective home improvement tips that can help you reduce your damage from a hurricane.



the force of the wind in a category 4 hurricane causes 100 times the damage of that in a category 1 storm

Wind Facts:

- *Hurricane Celia in 1970 produced wind gusts of 150 mph, blowing down the anemometer at Aransas Pass. Gusts of 180 mph were estimated later.*
- *Hurricane Celia produced sustained winds of 125 mph and gusts to 161 mph in Corpus Christi causing extensive damage to buildings across the city.*
- *Hurricane Celia generated hurricane winds as far inland as Del Rio.*

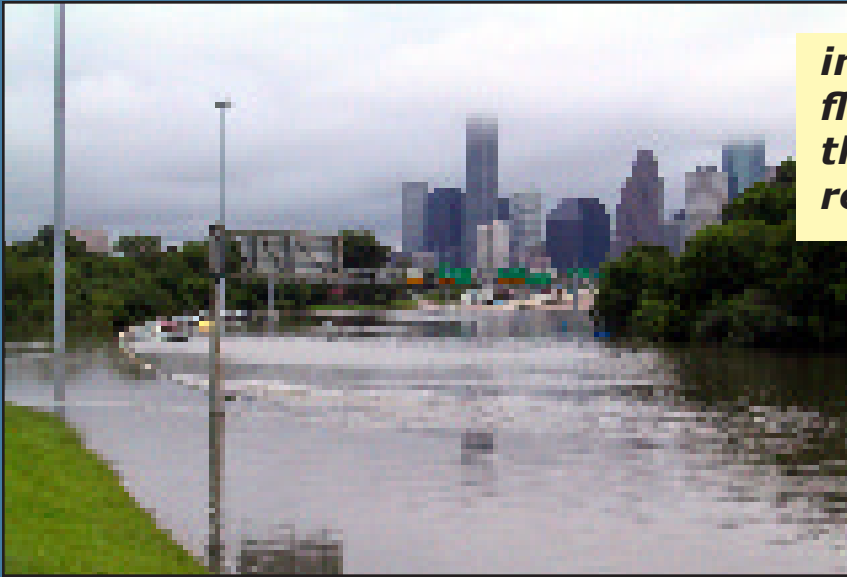
saffir-simpson hurricane intensity scale

category 1	minimal damage	74 mph to 95 mph
category 2	moderate damage	96 mph to 110 mph
category 3	extensive damage	111 mph to 130 mph
category 4	extreme damage	131 mph to 155 mph
category 5	catastrophic damage	156+mph

hurricane hazards

Inland Flooding

Flooding from tropical cyclones is the major threat to people well inland from the coast. Very slow moving tropical storms and hurricanes can produce tremendous rains of 20 to 30 inches or more, resulting in disastrous flooding.



in the last 30 years, inland flooding has killed more people than any other weather hazard related to tropical cyclones.

In 2001, Tropical Storm Allison flooded the Houston area with 36 inches of rain which resulted in 23 deaths and \$5.1 billion in damage.

Left: Interstate 45 in Houston under several feet of water.

Tornadoes

Tropical Cyclones can produce tornadoes adding to the storm's destructive power. Tornadoes are most likely to occur in the right front quadrant of the tropical cyclone in the eyewall region or in the outer rainbands as far as 150 miles away from the center. The tornadoes are usually weak and short-lived, but still pose a threat to life and property.

Tornado Spawned by Hurricane Emily

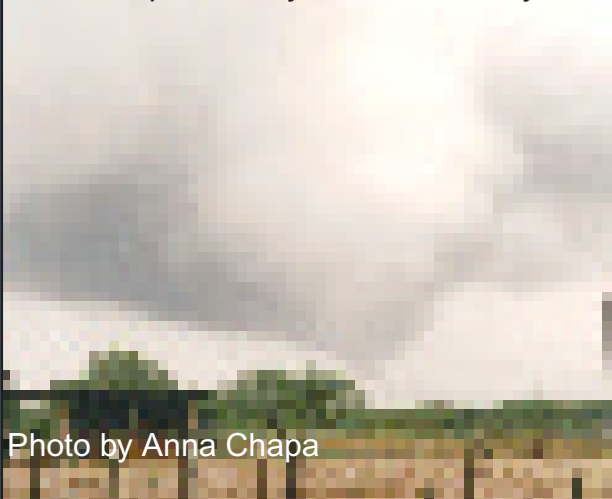


Photo by Anna Chapa

Tornado Facts

In 1988 Hurricane Gilbert made landfall well south of Brownsville, yet spawned 29 tornadoes in South Texas, 13 in San Antonio alone, causing \$50 million in damage.

Hurricane Beulah (1967) holds the record for the most known tornadoes to be spawned by a tropical system. It is estimated that Beulah produced over 114 tornadoes across south and central Texas.

preparing your property

before the storm

Preparing Your Home:

- **Landscaping:** Replace gravel/rock landscaping with shredded bark.

Keep trees and shrubbery trimmed. Cut branches and trees that could fall or bump against the house.

- **Windows:** Cover all large windows and patio doors with securely fastened storm shutters made from 5/8" thickness plywood or greater. Or install tested / manufactured hurricane shutters.

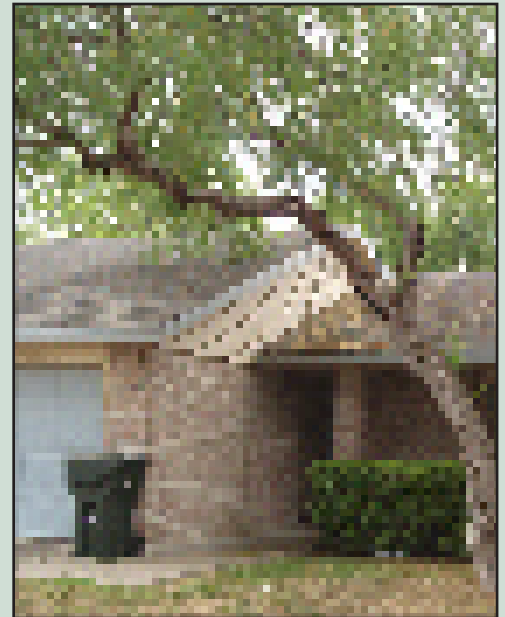
- **Doors:** Reinforce the double-entry doors with heavy duty foot and head bolts, and use a security dead bolt lock with one inch minimum bolt throw length.

Reinforce double garage door and tracks. Or Replace double garage door with hurricane wind load tested garage door.

- **Roof:** If you find that the roof decking is not adequately attached: Use adhesive to attach the decking to the rafters. If re-roofing, use extra 8d (8 penny) nails or #8 screws. Also, install roof covering shingles that are rated for hurricane force winds based on the manufacture's recommendations; Apply additional adhesives as needed.

Brace gable end walls and roof trusses inside attic. Install hurricane clips/straps connecting roof rafters/trusses to the side walls.

- **Walls:** Check to see if the exterior walls are connected to the foundation properly if you have a wood frame house.



Keep trees trimmed



Brace garage doors from behind



insurance tips

Pre-storm Preparations - Are you ready for Hurricane Season?

- Before hurricane season begins, take time to meet with your local insurance agent to determine if your property and belongings are adequately protected.
- It would be a good idea to make a detailed inventory of all your belongings. A photographic record of all items is very valuable when it comes to fast settlement of claims.
- Obtain protective coverings for windows and garage doors. Purchase hurricane shutters, pre-cut plywood or laminated glass. Give yourself plenty of time to install these before the hurricane arrives.
- Garage or store vehicles you plan to leave behind.
- Moor boats securely or place inside a building.
- If you have a manufactured home, check tie-downs.

After the Disaster - What should you do?

- Before hurricane season begins, take time to meet with your local insurance agent to determine if your property and belongings are adequately protected.
- Take any necessary measures to protect and dry out your building.
- Dispose of damaged property which presents a health hazard or which may hamper local clean-up operations. Be sure to adequately document discarded items by saving your receipts, photographing the items and by compiling a room-by-room inventory of missing or damaged goods.
- If you perform any of the clean-up activities yourself, consider your safety and the safety of others in performing these tasks.
- Do not dispose of any large dollar items that are damaged, such as large televisions and furniture, until authorized by your claim representatives, as this property may need to be inspected.
- Move personal property to a protected area.
- If there is a lot of water inside your home, remove the water and wet items. Try to leave it as well ventilated as possible to help in the drying out process.
- Handle antiques, art objects, sterling and brass with special care. You can dry them, but do not oil or rub them since this could damage finishes or surfaces.
- Clean and dry wood furniture as soon as possible. Be careful not to rub in abrasives such as soil or plaster that may have fallen on the surfaces.
- Try to dry bedding and upholstered furniture that is saturated with water. Don't store other possessions near these items.
- Dry and clean any carpet or rug that has minor water damage.
- To prevent corrosion of metal objects, dry and rub or spray with oil.
- Dry, but don't oil radios, televisions and other electric devices. Have all electrical equipment exposed to water professionally serviced before using them.
- Caution! Do not attempt to start a flood-damaged car before it has been inspected as this may cause additional engine damage.

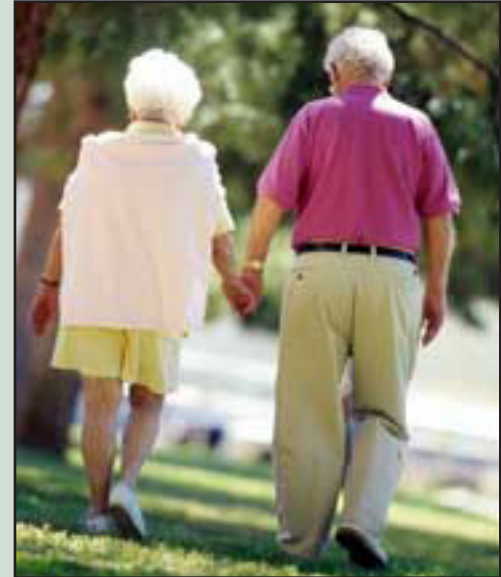
special needs

before the storm

general preparations

Preparation in advance of hurricane season is essential, especially for people with special needs. Shelters should be considered a **last resort** in your evacuation plans because many cannot accommodate people with special needs or provide the attention you may require. Therefore, it is important to have a plan in place.

Important Preparation Tips



- ❑ Identify with whom you will stay in the event an evacuation is necessary.
- ❑ Make arrangements for transportation in the event you evacuate. Make sure your transportation can accommodate any equipment or other supplies that need to be taken with you.
- ❑ The following is a list of some items that could be stored in advance:
- ❑ *Extra copies of your prescriptions in case your physician's office is damaged and not operational.*
- ❑ *At least a one-month supply of medications.*
- ❑ *Identification.*

Source: University of Miami Leonard M. Miller School of Medicine



preparing for your pet's safety

DO's:

- ❑ Take your pet with you when you evacuate.
- ❑ Make sure your pet has a proper ID collar.
- ❑ Keep a leash in your vehicle.
- ❑ Make sure all of your pet's vaccinations are current and have proof.

DONT's:

- ❑ DO NOT allow your pet to eat or drink food from outside that may have become contaminated.
- ❑ DO NOT assume a public shelter, hotels or motels will accept your pet.

preparations

The Coastal Bend - Texas Chapter of the American Red Cross recommends that you have these items in your Emergency Disaster Supply Kit. Don't forget to have a family meeting and review the information, your emergency plan, and update your communication plan; including home, work, school, and cell phone numbers as well as your "Out-Of-Town" contact person's number. For more information, please call **361-887-9991** for more information or go to our website at **www.cbtreddcross.org**.



**American
Red Cross**

before the storm

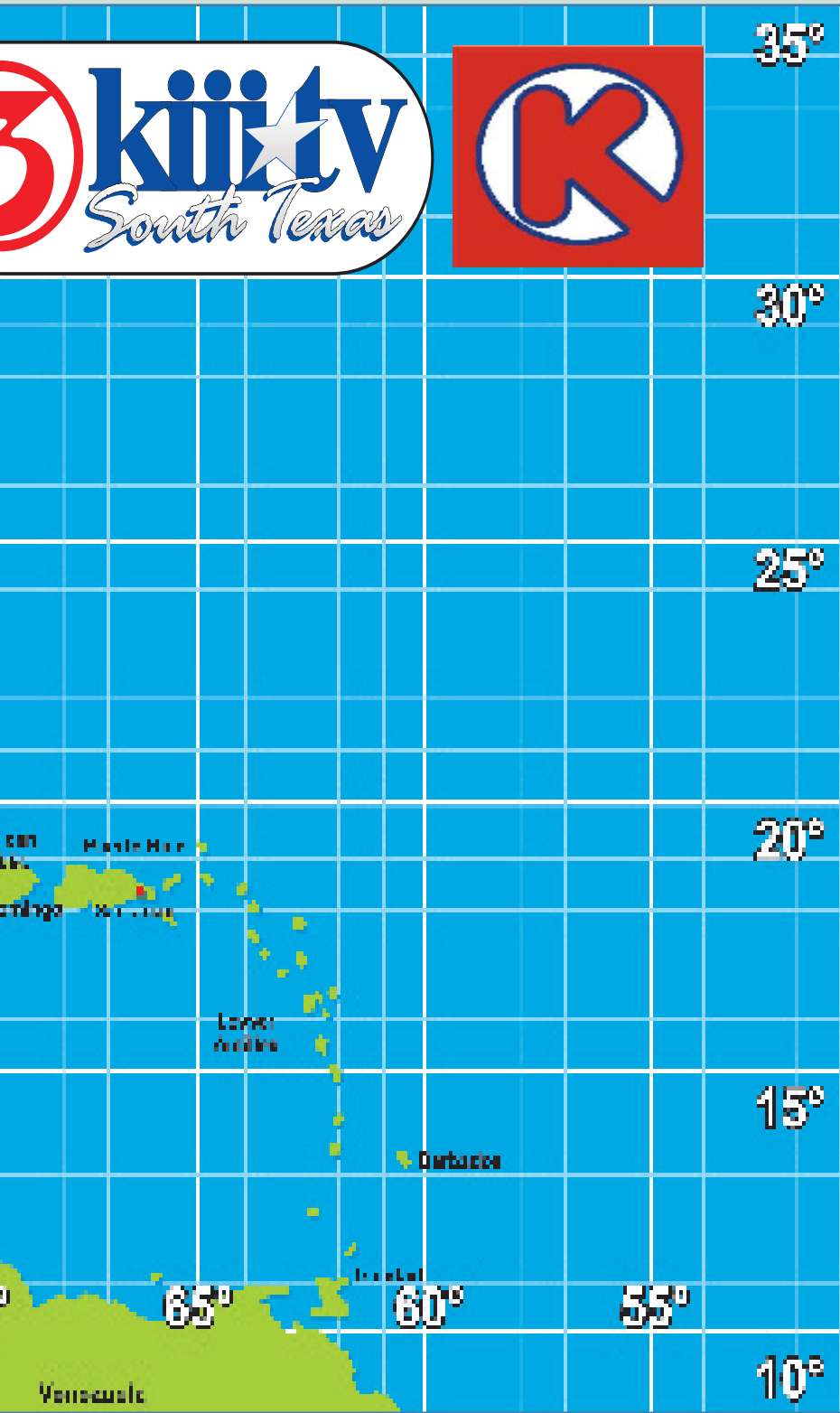
Emergency Disaster Supply Kit

- 7-day supply of non-perishable food and a manual can opener.
- 7-day supply of water (one gallon per person, per day).
- 7-day supply of water (one gallon per two pets, per day).
- 7-day supply of food for your pets.
- Portable, battery-powered radio or television and extra batteries.
- Flashlight and extra batteries.
- First Aid kit and manual.
- Sanitation and hygiene items (hand sanitizer, moist towelettes, and toilet paper).
- Matches in waterproof container.
- Whistle.
- Extra clothing and blankets.
- Kitchen accessories and cooking utensils.
- Photocopies of identification, insurance, prescriptions, household inventory, and credit cards.
- CD or photocopies of important documents (titles, mortgages, birth & marriage certificates).
- Cash and coins.
- Special needs items such as prescription medications, eye glasses, contact lens solution, and hearing aid batteries.
- Infant items, formula, baby food, diapers, and pacifiers.
- A good Texas Map showing county roads as well as highways.
- Toys/Games for the children.
- Pet Carriers for each animal evacuating with you.
- List of family phone numbers and addresses outside the area.

For Your Car

- Tire repair kit, booster/Jumper cables, pump and flares.
- White Distress Flag.
- Bottled water and non-perishable foods, such as granola bars.
- Blanket to use as shade, ground cover, or blanket as needed.

Tracking chart



2006 Hurricane Names

- Alberto**
- Beryl**
- Chris**
- Debby**
- Ernesto**
- Florence**
- Gordon**
- Helene**
- Isaac**
- Joyce**
- Kirk**
- Leslie**
- Michael**
- Nadine**
- Oscar**
- Patty**
- Rafael**
- Sandy**
- Tony**
- Valerie**
- William**

KIII weather

KIII weather

a storm is brewing

The National Weather Service's Hurricane Center (NHC), Storm Prediction Center (SPC), Hydrologic Prediction Center (HPC) and local Weather Forecast Offices (WFO) all work together to provide the best possible hurricane forecasts as well as expected impacts in the local area. This information is available through the internet, NOAA weather Radio, and local media outlets.

Final preparations

need weather information?

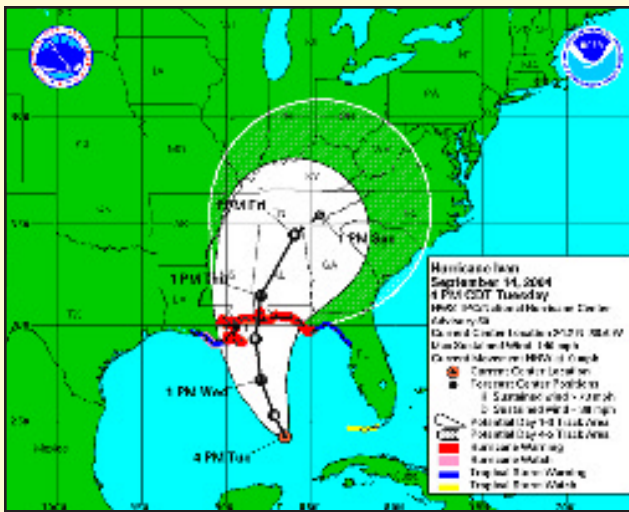
National Weather Service
www.srh.noaa.gov/crp

National Hurricane Center
www.nhc.noaa.gov

24-Hour Phone Recording
(361) 289-1861

KIII Weather Line
814-wind

Understanding the Hurricane



The National Hurricane Center produces a 5 day forecast for tropical depressions, tropical storms and hurricanes. The black line and dots on the graphic show the forecast track for the eye of the storm. The white cone represents the forecast uncertainty. Although hurricane forecast tracks have improved significantly in the last 20 years, hurricane forecasts are not perfect. When interpreting the forecast, understand that the tropical cyclone **will remain within the white error cone only 67% of the time!** It is also important to note that hurricane conditions can spread hundreds of miles from the center.

Do's and Don'ts of Using the Hurricane Forecast

DO begin to implement the final preparations portion of your hurricane plan if you live in an area which falls within or near the cone of uncertainty.

DO keep up with the latest National Hurricane Center forecast. These are updated four times a day.

DO NOT focus solely on the exact forecast track because the hurricane's movement can be erratic and difficult to forecast.

DO NOT wait for a hurricane watch or warning to begin implementing your final preparations as it may be too late to complete them.

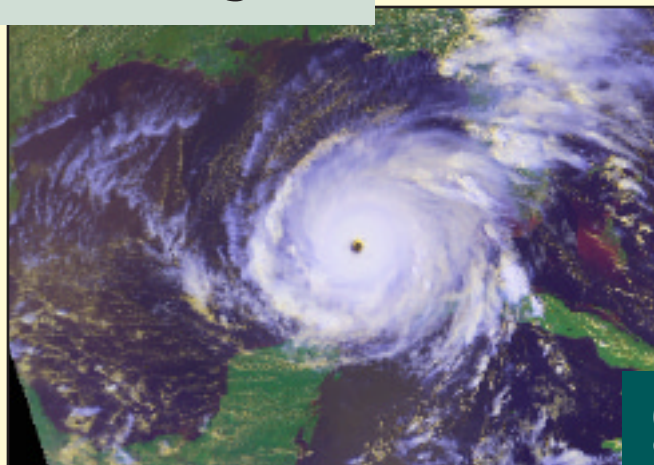
final checklists

actions to take when storm is in the gulf

- Listen for official bulletins on local television, radio, and NOAA weather radio.
- Fill your vehicle's tank with gas and check fluid levels.
- Obtain adequate supply of prescription medicines.
- Get extra cash.
- Double check your Disaster Supply Kit.
- Bring in outdoor objects such as lawn furniture, toys, garbage cans, potted plants and garden tools.
- Board up windows. **Do not use tape.**
- Follow instructions issued by local officials. **EVACUATE IMMEDIATELY IF ORDERED TO DO SO.**

final actions if leaving

- Turn off utilities if ordered to do so and turn main switch for the electricity to off.
- Turn off propane tanks.
- Unplug small appliances.
- Completely empty your refrigerator and freezer.
- Lower the water level in swimming pools by a foot to allow for heavy rains.
- Take pets with you.
- Notify family members or other contact outside of the warned area of your evacuation plans.
- Lock home securely.
- Final board up doors and brace garage doors.



Hurricane Rita entering the Gulf of Mexico.

final actions if staying

- Make sure you have all the supplies necessary to survive on your own for a week or longer.
- Do not expect emergency responders to be of any assistance during a hurricane landfall.
- Turn refrigerator and freezer to their coldest setting and only open when necessary.
- Turn off utilities if ordered to do so.
- Board up doors and brace garage doors.
- Stay inside your home at all times during the storm and away from windows and doors even if they are covered.
- Take refuge in a small ground floor, interior room, closet, or hallway. Take a battery-powered radio, a NOAA Weather Radio, and a flashlight with you.

evacuations

Evacuees need to consider the travel path of the hurricane and your destination in choosing evacuation routes. Listen to local authorities and emergency broadcasts about weather and highway conditions.

need road information?

TXDOT Road Conditions
1-800-452-9292

TXDOT Corpus Christi Office
1-361-808-2300

Listen to Emergency Broadcast Information



***It takes between 18 and 24 hours
to evacuate the coastal counties
in advance of tropical storm force
winds.***

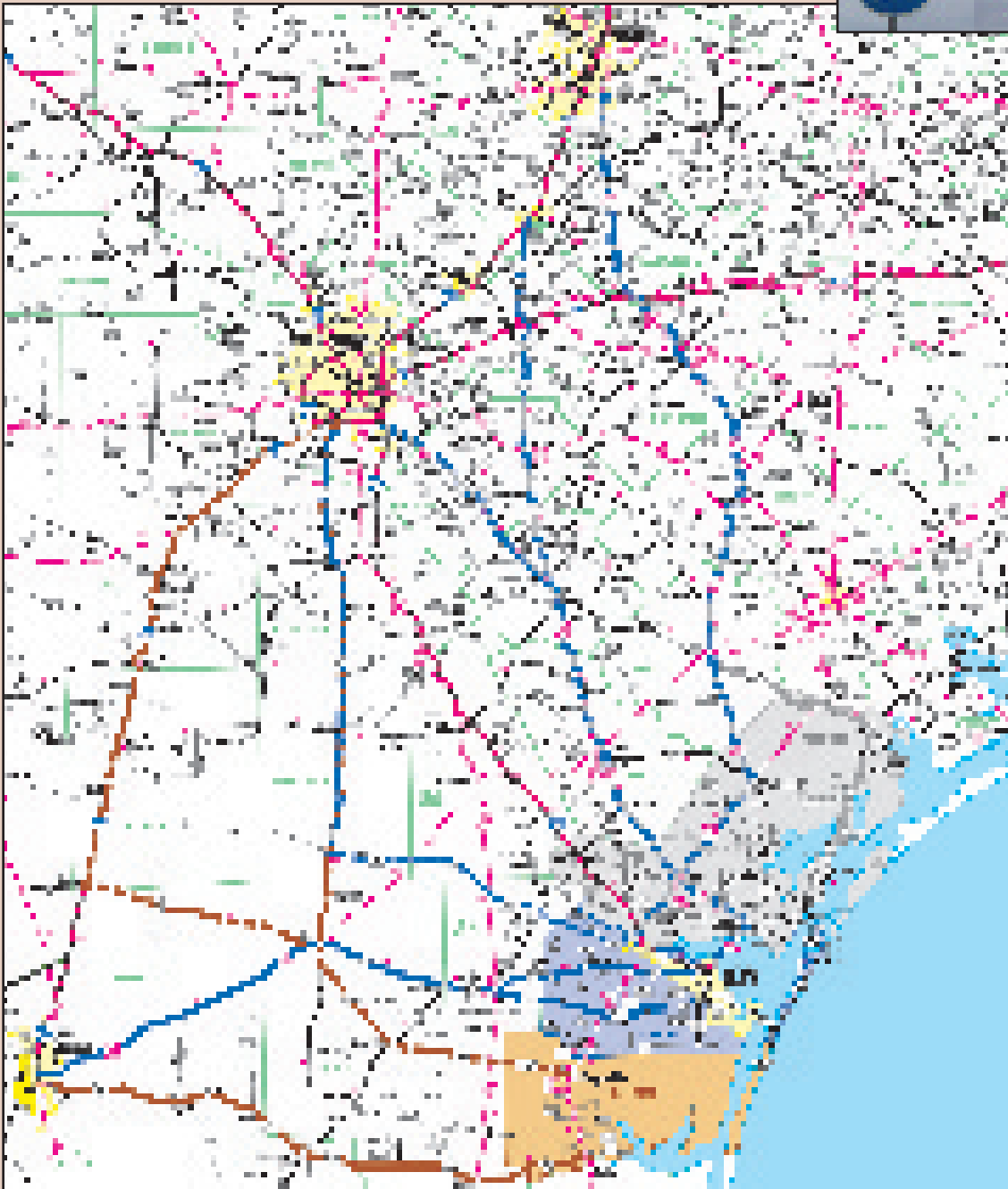
during/after storm

- Remember large boats and travel trailers may not be allowed to cross the JFK causeway or Harbor Bridge in high winds.
- Notify an out of town friend or relative of your travel plans and keep in contact with them during your evacuation.
- Secure your home. Unplug small appliances and electronics. Empty the refrigerator and dispose of food that is not being taken with you.
- Take your pets with you.
- Prepare to stay at your evacuation destination for a week or more, as re-entry into the affected region may be restricted.



evacuation routes

Evacuate according to your place of residence.



during / after storm

Source: TXDOT

emergency information

emergency management agency phone numbers and information

City of Corpus Christi

(361) 826-1100

www.cceoc.com

Port Aransas City Hall

(361) 749-4111

www.cityofportaransas.org

Kingsville Police

Kleberg County

(361) 592-4311

(361) 595-8527

Rockport Police

Aransas County

(361) 729-1111

(361) 729-2222

San Patricio County

(361) 364-6144

Ingleside Police

(361) 776-2531

Gregory Police

(361) 643-6562

City of Alice

Jim Wells County

(361) 668-1018

Live Oak County

(361) 449-2733

Bee County

(361) 362-3271

www.co.bee.tx.us

Refugio County

(361) 526-2820

Goliad County

(361) 645-1729

U.S. Department of Homeland Security

www.readygov.com

National Red Cross

www.redcross.gov

FEMA

www.fema.gov

during/after storm

returning home

Debris: After a storm, large amounts of storm debris is likely. Restrict your driving to emergency only as initial road conditions may be unsafe until road debris is able to be cleared. Due to the extremely large amounts of debris, it may take several months for contractors to remove all debris.

Cities/Counties will publish a schedule for debris pick-up and removal. Debris cannot be removed from private property. Construction materials, vegetative debris, household hazardous waste and household appliances will need to be placed into separate piles and moved to the curbside for pick-up. Do not place piles on or near fire hydrants or utility boxes.

routine information

826-INFO

do not call 911 for non-emergencies!!



Biloxi, MS - Hurricane Katrina - Photo by FEMA

30% of all deaths associated with a hurricane occur indirectly well after the storm has passed and cleanup is underway.

Clean Up: To prevent illness, disinfect and dry buildings and items in them. This will prevent growth of some bacteria, viruses, mold, and mildew that can cause illness.

Clean walls, floors, and counter surfaces with soap and water. Disinfect them with a solution of 1 cup bleach to 5 gallons water. Wash all clothes and linen in hot water. Air dry and spray with disinfectant all un-washable items (for example, mattresses or furniture). Steam clean carpets. Throw away all items touched by water that cannot be disinfected.

during/after storm

returning home



Chlorine bleach and Tincture of Iodine can be used to disinfect dirty water after a flood.

Water: Most people significantly underestimate their water needs in the wake of a hurricane. Remember, the power may be out for a week or longer, leaving you without air conditioning in the heat of the summer. Thus you must plan your water usage appropriately. Your water service could be disrupted after a hurricane strikes. To determine your water needs in gallons for a one week period, multiply the number of people in your family by 7.

Be sure to fill up emergency water containers before hurricane season. If a storm is approaching, sterilize bathtubs, jugs, bottles, cooking utensils, and other containers. To do this, scrub thoroughly, sponge and swab with regular, unscented liquid chlorine

bleach, then rinse. Let the tub and other containers dry, then fill with water.

during/after storm

You cannot assume that water is safe to drink after a hurricane. Listen for instructions regarding public water supply. Use only bottled, boiled or treated water until you know that your water supply is safe. You can use household chlorine bleach to treat water for drinking or cleaning. Add 1/8 teaspoon per gallon of clear water or 1/4 teaspoon per gallon if water is cloudy. Allow water to stand for 30 minutes before using.

Utilities:

Check for gas leaks, if you smell or hear gas leaking, leave immediately. Do not use the phone or turn on lights in your home. Call the gas company from a neighbors or a cell phone. Look for loose or dangling power lines. Report any visible damage to the power company. Turn off power at main breaker if any electrical equipment or circuits have been exposed to water. If you suspect water or sewage lines are damaged, do not use your plumbing (toilets, sinks, etc). Contact the water company or a plumber for repairs.

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1/4 page Ad
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1/4 page Ad
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