

PI

Contraction of the second seco

# MISSISSIPPI HURRICANE PREPAREDNESS GUIDE

# EVACUATION ROUTE

0

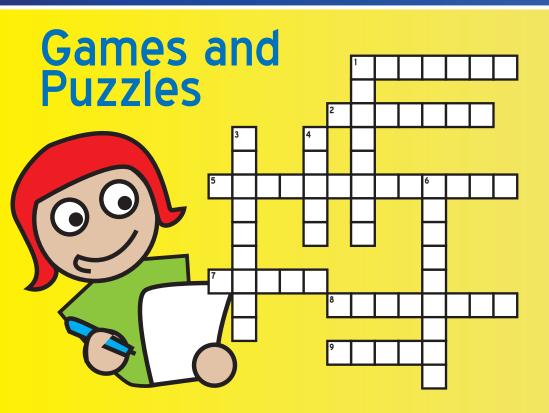
N \* \*

Hurricanes

Hurricanes are severe tropical storms that form in the southern Atlantic Ocean, Caribbean Sea, Gulf of Mexico and in the eastern Pacific Ocean. Hurricanes gather heat and energy through contact with warm ocean waters. Evaporation from the seawater increases their power.

Hurricanes rotate in a counter-clockwise direction around an "eye." Hurricanes have winds at least 74 miles per hour. When they come onto land, the heavy rain, strong winds and heavy waves can damage buildings, trees and cars. The heavy waves are called a storm surge. Storm surges are very dangerous and a major reason why you must stay away from the ocean during a hurricane warning or hurricane.

After a hurricane makes landfall on a coastline it can cause severe weather inland including rain, high winds and tornadoes. This means being prepared for an emergency no matter where you live is very important!





#### Across

- 1. Where are hurricane winds most intense?
- A Hurricane \_\_\_\_\_\_ is issued when hurricane conditions are EXPECTED within 24 hours.
- 5. A tropical disturbance with sustained winds of 39 to 73 mph is known as a
- as a \_\_\_\_\_. 7. A hurricane \_\_\_\_\_ is issued when hurricane conditions are POSSIBLE within 36 hours.
- within 36 hours.
  8. "Inland \_\_\_\_\_" is responsible for the greatest number of fatalities over the past 30 years.
- A dome of water that is pushed toward shore by the force of the hurricane winds is known as "Storm \_\_\_\_\_".

#### Down

- 1. If you live in a mobile home or along the immediate coast, you should do this if asked to do so.
- 3. A tropical disturbance with sustained winds greater than 73 mph is known as a
- 4. NOAA Weather Radio is the \_\_\_\_\_ of the National Weather Service.
- 6. These most often occur in rain bands well away from the center of the hurricane.

#### Find these words

coastal flooding spiral band warning eyewall tornado water evacuate storm surge watch hurricane tropical storm wind

Hurricane season officially runs from June 1 to November 30. Governor Haley Barbour, Mississippi Emergency Management Executive Director Mike Womack and the National Weather Service want to make sure you are prepared. The information in this guide is designed to increase hurricane awareness and readiness. Inside you will find important information associated with tropical storms and hurricanes which will help YOU prepare when a storm threatens.

Whether you live near the Gulf Coast or well inland you should review preparedness plans and be ready for the season. Hurricane Katrina taught us well in 2005 when it affected all 82 Mississippi counties. Inland communities face the challenges of assisting coastal evacuees, dealing with flooding, tornadoes, high winds and power outages.

Personal hurricane plans should be designed so you can take quick action when a storm is approaching. The most important thing you need to do is have a plan based on your level of vulnerability. If you live in an evacuation zone, in a flood prone area or in a mobile home, you need to evacuate. If you live inland away from the coast in a well built home, you may be better off boarding up and staying put. Whatever you decide, a plan will allow you to make quick decisions. Your plan will help you answer questions like: Where will I go if I evacuate? How will I get there? When will I leave? What do I need to take with me? How can I prepare my home for the storm? When should I pick up outdoor objects that could become missiles during a storm? What items do I need to have in a disaster supply kit?

The theme of this guide; "The First 72 are on you!" means residents should have enough supplies to sustain their families for three days, 72 hours after a hurricane makes landfall. It could take that long for public assistance to reach you.



**CREDITS:** Inside Cover: Crossword Puzzles and Word Search Games from FEMA website (www.fema.gov).

#### Message From Governor Haley Barbour

Mississippians showed the rest of the nation and the world after Hurricane Katrina we are a people of unmatched resiliency and generosity. We endured the worst natural disaster in American history and have bounced back faster than anyone expected. The road to full recovery is still long but progress is being made every day on many different fronts. Now, as we move into this hurricane season, it is time again for all Mississippians to stay alert and prepare.

I encourage you to take advantage of the vital information contained in this guide to protect your family and your property. There is no substitute for having a plan and being prepared. Together we can work to save lives.

They Same

Governor Haley Barbour State of Mississippi

#### Message From The Mississippi Emergency Management Agency

It is our belief that Mississippi is better prepared now more than ever to respond to a hurricane threatening the state. We have worked tirelessly with local emergency managers in all 82 counties to make sure we are ready, but we also need the public's help. It is crucial residents take the time to create a personal plan and be prepared for any threat that comes our way.

The theme, "The First 72 are on you!", encourages residents to have enough supplies to sustain their families for three days after a storm hits. This guide will help you answer any questions about how to be prepared. We are proud to work with Governor Haley Barbour, FEMA and the National Weather Service to make sure we are all prepared for hurricane season.

2 marca

Mike Womack Executive Director, MEMA Mississippi

#### Message from the National Weather Service

Landfalling hurricanes and tropical storms provide a wide variety of hazards. Hurricanes can cause catastrophic storm surges, widespread wind damage, tornadoes, and significant flooding. Even tropical storms can cause significant flooding and tornadoes. The tornado and flooding risk can extend well inland and last for several days after landfall. No two storms have exactly the same impact, but all are capable of causing substantial damage and injury.

We also encourage you to track any tropical system that forms on our website. You can access all the regional National Weather Service web pages listed in this guide.

Staying informed is key to staying safe.

## TABLE OF CONTENTS

Introduction to 2010 Hurricane Season1
Messages from Governor Haley Barbour, MEMA Exec. Director, and National Weather Service2
History of Tropical Systems That made Landfall in Mississippi4
Emergency Supply Kit6
The Plans7
Take Action
When in a Watch/Warning Area9
Be Prepared10
If You Stay Home11
Pet Preparedness/Special Needs Tips12
High Winds and Tornadoes13
Inland Flooding14
After The Storm15
MDOT Evacuation Map16
Storm Names for 2010-201317
Tracking Chart
Saffir -Simpson Hurricane Scale
MEMA Social Media20
Personal Emergency Contact List21

#### IMPORTANT NUMBERS

This guide contains useful materials for the upcoming Hurricane season. You are invited to contact your local emergency management agencies or local National Weather Service office with any questions you may have.

Mississippi Emergency Management Agency 1-866-519-MEMA (6362)

Hancock County EOC, Director Brian Adam 228-466-8320

Harrison County EOC, Director Rupert Lacy 228-865-4002

Jackson County EOC, Director Donald Langham 228-769-3111

National Weather Service Jackson **601-965-4638** Mobile **251-633-6443** Slidell, LA **985-649-0357** 

On the Internet:

Governor Barbour www.governorbarbour.com

> MEMA www.msema.org

National Weather Service www.srh.noaa.gov/jan www.srh.noaa.gov/mob www.srh.noaa.gov/lix

> FEMA www.fema.gov

MDOT www.gomdot.com

3

## TROPICAL SYSTEMS THAT HAVE MADE LANDFALL IN MISSISSIPPI (1900-2009)

1900	Tropical Storm
1901	Hurricane, Cat. 1
1905	2 Tropical Storms
1906	Hurricane, Cat. 2
1907	Tropical Storm
1911	Hurricane, Cat. 1
1912	2 Hurricanes, Cat. 1; Tropical Storm
1915	Tropical Storm
1916	Hurricane, Cat. 2
1922	Tropical Storm
1923	2 Tropical Storms
1926	Hurricane, Cat. 1; Tropical Storm
1932	Hurricane, Cat. 1; Tropical Storm
1934	Tropical Storm
1948	Tropical Storm
1949	Tropical Storm

\*Storms not named until 1951

## TROPICAL SYSTEMS THAT HAVE MADE LANDFALL IN MISSISSIPPI (1900-2009)

1960	Tropical Storm Ethel
1964	Tropical Storm Hilda
1969	Hurricane Camille, Cat. 5
1971	Tropical Storm Edith
1979	Hurricane Fredric, Cat. 3
	Tropical Storm Bob
1985	Hurricane Elena, Cat. 3
	Tropical Storm Danny
1995	Tropical Storm Erin
1997	Hurricane Danny, Cat. 1
1998	Hurricane Georges, Cat. 2
2001	Tropical Storm Allison
2002	Tropical Storm Isidore
	Tropical Storm Hanna
2005	Tropical Storm Cindy
	Hurricane Katrina, Cat. 3
2008	Hurricane Gustav, Cat. 2

## **EMERGENCY SUPPLY KIT**

- Flashlight(s) with extra batteries.
- Portable radio with extra batteries.
- □ NOAA Weather Radio.
- Non-perishable food for at least 3 days.
- Bottled water (1 gallon per person per day).
- □ First Aid Kit with prescription medications.
- Bedding and clothing for each family member.
- Blankets and towels.
- Plastic dishes/eating utensils.
- Rain Jackets/pants.
- Sun screen/sunglasses/mosquito repellant.
- Baby supplies (food, diapers, medication).
- Pet supplies (food, leash & carrier, vaccination records).
- □ Sanitary supplies.
- Toothbrush, toothpaste, soap, shampoo, cleanser, bleach, towelettes, toilet paper, trash bags, feminine hygiene products.
- Copies of important documents.
- Driver's license, SS card, proof of residence, insurance policies, wills, deeds, birth and marriage certificates, tax records, medical records, family pictures, etc.
- Cash, enough to fill up your vehicle with gas and travelers checks.
- Emergency generator.

## THE PLANS

#### **Develop a Family Communication Plan:**

- How will you get in touch with family members if separated?
- Phone lines in a disaster area are often overwhelmed. You should designate a friend or family member who lives out of state to be an emergency point of contact in the event that family members become separated.

#### **Develop a Family Evacuation Plan:**

- Where will you and your family go in the event of an evacuation?
- Where will your pets go?
- Discuss with your family if you will stay with friends, family or go to a shelter.
- Look at evacuation routes and know main and alternate evacuation routes.

MDOT Traffic Hotline	1-866-521 MDOT (1-866-521-6368)
Louisiana DOT Traffic Hotline	1-877-4LA-DOTD (1-877-452-3683)
Alabama DOT Traffic Hotline	1-334-242-6358
MEMA Public Information Hotline	1-866-519-MEMA (1-866-519-6362)

Listen to Mississippi Public Broadcasting FM Radio for information:

Biloxi: 90.3 Booneville: 89.5 Bude: 88.9 Greenwood: 90.9

Jackson 91.3 Meridian 99.1 Mississippi State 89.9 Oxford 90.3

MPB 24 hour information hotline: **601-326-1184** On the internet: **www.mpbonline.org** 

#### **TAKE ACTION** TERMS AND DEFINITIONS TO IMPROVE THE UNDERSTANDING OF HAZARDS

**HURRICANE:** An intense tropical weather system with a well defined circulation and maximum sustained winds of 74 mph or higher.

**TROPICAL STORM:** An organized system of strong thunderstorms with a well defined circulation and maximum sustained winds of 39 to 73 mph.

**TROPICAL DEPRESSION:** An organized system of clouds and thunderstorms with a defined circulation and maximum sustained winds of 38 mph or less.

**STORM SURGE:** This large dome of water often 50 to 100 miles wide sweeps ashore near where a hurricane strikes land and typically accounts for nine of 10 storm deaths. A surge of up to 15 feet or more can cause severe flooding and damage along the coast, particularly when the storm surge coincides with normal high tides. Hurricane Katrina's storm surge was more than 20 feet in many locations.

**TORNADOES:** Even though a hurricane or tropical storm weakens as it moves inland, it can produce deadly and damaging tornadoes.

**FLOODING:** Typically, hurricanes bring heavy rains which can compound drainage problems in areas experiencing storm surge flooding. Rainfall totals of 10 inches or more are not uncommon when a tropical storm or hurricane moves across a coastal location. Over land, torrential rain may continue even after the wind has diminished. Rainfall totals of this magnitude could easily result in destructive flash flooding and river flooding. In the 1970's through 1990's more people died from fresh water flooding than from storm surge. Flooding also causes extensive property and agricultural losses.

## WHEN IN A WATCH AREA

- Monitor radio, TV, NOAA Weather Radios and the internet for official bulletins of the storms progress.
- Fuel and service vehicles.
- Inspect and secure mobile home tie downs. Prepare to cover all window and door openings.
- Make sure emergency supply kit is full.
- Prepare to secure lawn furniture and other loose objects outside the house.
- Listen closely to advice from local and state emergency official.
- You may be asked to evacuate if you live near the coast when a watch is issued.

## WHEN IN A WARNING AREA

- Closely monitor all official bulletins.
- Complete preparations, such as putting up storm shutters and securing items.
- Follow instructions from emergency managers.
- Evacuate immediately if told to do so. If evacuating leave early.
- Stay with friends, relatives or at an inland hotel or as a last resort go to a designated public shelter outside a flood zone.
- The shorter distance you travel , the better, as long as you move away from the coast.
- Leave mobile homes in any case.
- Notify neighbors and a family member outside of the warned area of your evacuation plans.

## **BE PREPARED**

If you were suddenly faced with a powerful land falling hurricane, would you know what to do? For residents along the Mississippi Gulf Coast or in storm surge flood zones evacuation will likely be requested. The key to protecting yourself and your family is preparation. Main preparations include ensuring that your house and boat are in good condition, your insurance is up to date and that you have adequate supplies on hand. As Hurricane Katrina showed in 2005, it may take up to 72 hours for help to arrive. Whether you decide to evacuate or not, you should be ready to enact a family disaster plan in case a hurricane threatens. The plans should cover actions like boarding up the house and securing the boat. In addition, special considerations should be taken for young children, the elderly , the disabled, and pets.

## **BUILDING A SAFE ROOM INSIDE YOUR HOME**

Extreme winds can create stresses on houses that frequently cause connections between building components to fail. For example, the roof or siding material can be pulled off or the windows can be blown out. In addition, during extreme winds damage can also be caused by flying debris. If winds become strong enough flying debris can penetrate windows, walls or the roof. For this reason people should consider having a shelter or safe room built into their home.

Extensive testing and design by several universities and wind engineering research

facilities have led to the development of shelters constructed to withstand extreme winds without failing. They also resist penetration by wind blown flying debris. The safe rooms are most easily built into new homes, but some shelter designs can be added to existing homes provided you do not live in a storm surge or flood prone area. For more detailed information about building a shelter or safe room inside your home contact your local emergency management director.



## **IF STAYING HOME**

- Only stay home if you have not been ordered to leave.
- Turn refrigerator to maximum cold and open only when necessary.
- Turn off propane tanks.
- Board up windows.
- Stock emergency supply kit.
- Fill bathtub and large containers with water for sanitary purposes.
- Remove loose objects from the outside of your home.

## **IF WINDS BECOME STRONG**

- Stay away from windows and doors.
- Take shelter in small interior room, closet or hallway.
- Close all interior doors.
- Secure and brace external doors.
- If you are in a two story house go to first floor, interior room.

## PLAN TO EVACUATE IF YOU

- Live in a mobile home, live on the coastline, an offshore island, or near a river or flood plain.
- Live in a high-rise near the beach.
- Hurricane winds are stronger at higher elevations.



## PET PREPAREDNESS

- Pets are not allowed in most public shelters. Plan in advance for shelter alternatives that will work for both you and your pets.
- Your pet should wear a collar with its rabies tag and identification at all times. In your disaster supply kit, include all important pet documents and a backup leash, collar and ID tag.
- Include a crate, pet carrier, litter box if appropriate, plastic trash bags and household chlorine bleach in your kit to provide for your pet's sanitation needs.



## SPECIAL NEEDS DISASTER TIPS

- Create a support network to help in an emergency.
- Tell these people where you keep your emergency supplies.
- Give one member of your support network a key to your house or apartment.
- Contact your city or county emergency management office to be placed on a list of people with disabilities.
- Wear medical alert tags or bracelets to help identify your disability.
- If you are dependent on dialysis or other life sustaining treatment, know the location and availability of more than one facility.
- Show others how to operate your wheelchair.
- Know the size and weight of wheelchair and whether it is collapsible, in case it has to be transported.



## HIGH WINDS AND TORNADOES

Hurricane winds are a force to be reckoned with by communities along and near the coast, especially when deciding how strong their homes and businesses should be built. As winds increase against an object, pressure increases at a disproportionate rate. Pressure against a wall mounts with the square of the wind speed so that a threefold increase in wind speed results in a ninefold increase in pressure. Therefore, a 25 mph wind causes about 1.6 pounds of pressure per square foot. A 4 x 8 foot sheet of plywood will be pushed by a force of 50 pounds. In 75 mph winds, the speed associated with a

minimal Category 1 hurricane, the force is about 450 pounds. In 125 mph winds, a Category 3 hurricane, the force is 1,250 pounds. For many structures, this force is enough to cause failure or significant damage. Hurricane-force winds can destroy poorly constructed buildings and mobile homes, down trees and powerlines. Debris, like signs, roofing materials, siding and small items left outside can become flying missiles in hurricanes.

Hurricanes are large storm systems that can measure as much as 300 to



500 miles across. In a hurricane the winds rapidly increase in strength from the weakest on the outer edge to the strongest near the eye. Hurricane winds are most intense around the **eyewall**. This area is generally 15 to 20 miles wide and also contains the most intense rainfall. As a hurricane moves inland winds begin to rapidly decrease, but may remain above hurricane strength well inland. The faster a storm is moving the further inland the hurricane force winds will be experienced.

In 2005 Hurricane Katrina carried hurricane force winds more than 160 miles north into the Metro-Jackson area, leaving down powerlines and trees in its wake. Hurricanes also produce tornadoes which can add to their 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 eyewall.

## **INLAND FLOODING**

Hurricanes not only produce storm surges, high winds and tornadoes, but also deadly inland flooding.

Although storm surge has the greatest potential for loss of life as the storm is making landfall, recent research indicates inland flooding has been responsible for the greatest number of deaths in the 1970's through 1990's. Before Hurricane Katrina, studies showed 59 percent of the tropical cyclone deaths in the United States have resulted from freshwater drowning. Intense rainfall is not related to the strength of a tropical system. Some of the greatest rainfall amounts often occur from weaker storms that drift slowly or stall over an area.

It is extremely dangerous for people to attempt to drive vehicles through flooded areas. While the water may not look very deep, it may hide severe road damage. Unsuspecting drivers have entered what they thought was a minor overflow on the road, only to find themselves sinking

rapidly into a collapsed roadbed.

The rule is simple: if you can't see the road or it's markings, do not drive through the water.

<section-header>

Some statistics to remember if you are ever faced with the decision of crossing a flooded roadway:

- As little as 1 foot of water can move most cars off the road.
- Just 6 inches of fast moving flood water can sweep a person off his or her feet.
- Most flood related deaths occur at night and involve a vehicle. Tropical cyclones pose significant risk well inland due to fresh water flooding.

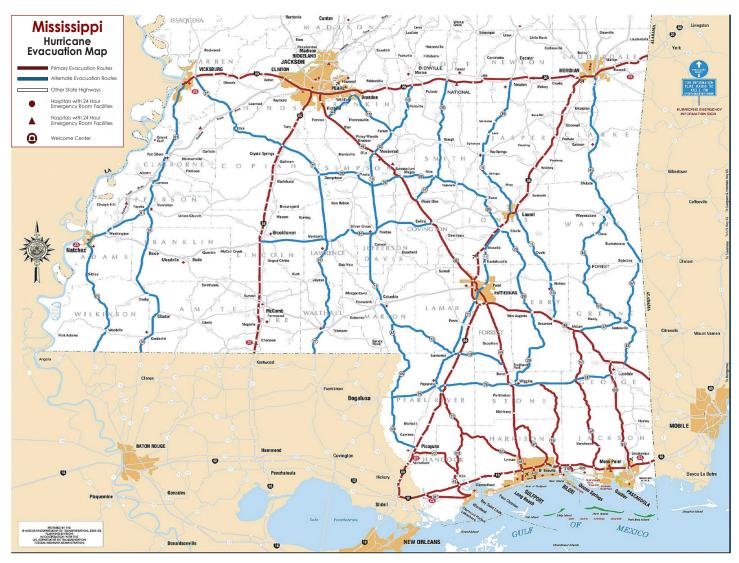
So when you hear hurricane, think inland freshwater flooding.

#### Drive Smart: "TURN AROUND DON'T DROWN"

## AFTER THE STORM

- Continue monitoring radio, TV, weather radios and the internet for updates.
- Roads may be closed for your protection.
- If you come upon a barricade or a flooded road, turn around and go another way!
- Avoid weakened bridges and washed out roads.
- Do not drive into flooded areas.
- Stay on firm ground. Moving water only 6 inches deep can sweep you off your feet. Standing water may also be electrically charged from underground or downed power lines.
- Check gas, water and electrical lines and appliances for damage.
- Do not drink or prepare food with tap water until you are certain it is not contaminated.
- Avoid using candles and other open flames indoors.
- Use a flashlight to inspect for damage.
- Be especially cautious if using a chainsaw to cut fallen trees.
- Use the telephone to report emergencies only. Wait until an area is declared safe before entering. If you are using an emergency generator, make sure the exhaust is vented to the outside.
- Be a GOOD neighbor.





## For More information: 1-866-521 MDOT (6368) www.GoMDOT.com



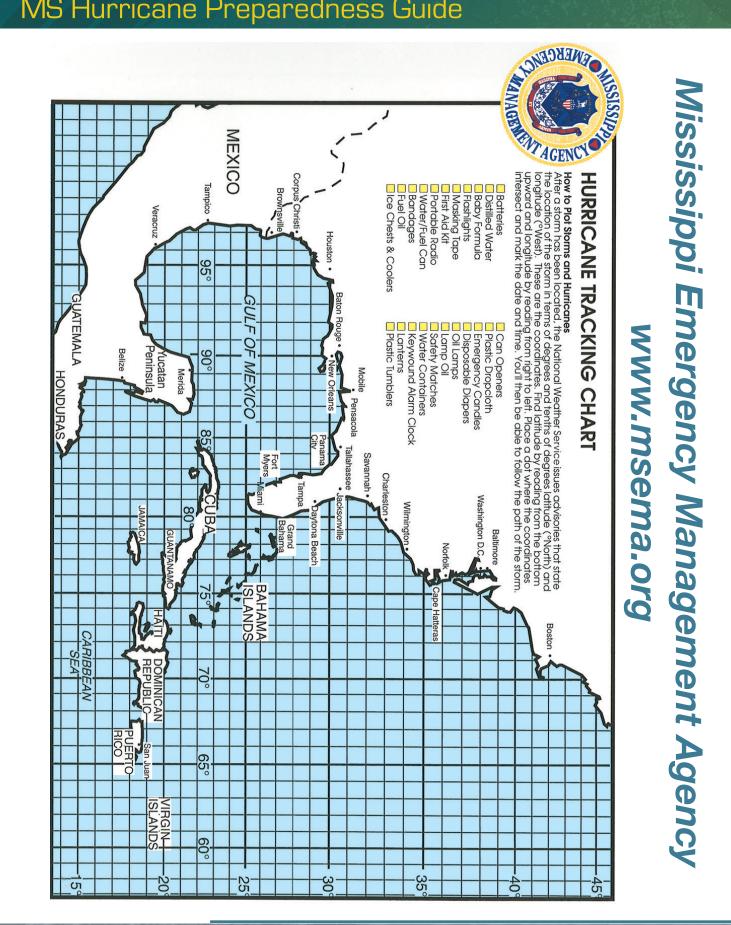
## ATLANTIC TROPICAL STORM AND HURRICANE NAMES

2010 Alex Bonnie Colin Danielle Earl Fiona Gaston Hermine Igor Julia Karl Lisa Matthew Nicole Otto Paula Richard Shary Tomas Virginie Walter

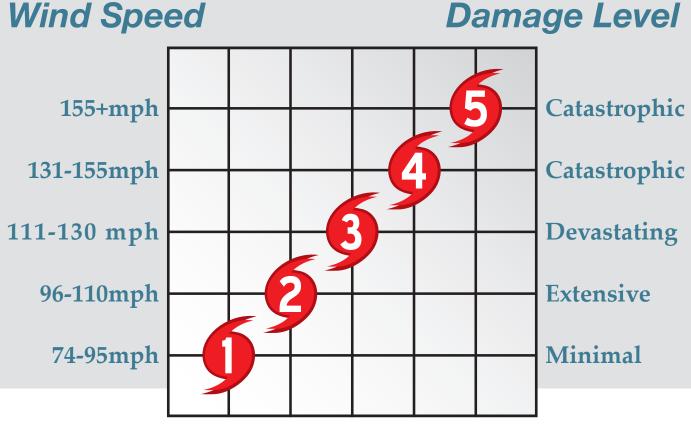
2011 Arlene Bret Cindy Don Emily Franklin Gert Harvey Irene Iose Katia Lee Maria Nate Ophelia Philippe Rina Sean Tammy Vince Whitney 2012 Alberto Beryl Chris Debby Ernesto Florence Gordon Helene Isaac Joyce Kirk Leslie Michael Nadine Oscar Patty Rafael Sandy Tony Valerie William

2013 Andrea Barry Chantal Dorian Erin Fernand Gabrielle Humberto Ingrid Jerry Karen Lorenzo Melissa Nestor Olga Pablo Rebekah Sebastien Tanya Van Wendy

17



# Saffir-Simpson Hurricane Scale

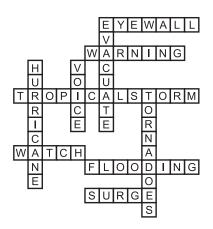


The National Hurricane Center will issue seperate storm surge forecasts for each hurricane.

#### Word Find Solution

Q	S	ĸ	W	Α	т	Е	R)	к	A	v	Q	т	S	Е
W	в	L	E	v	Е	N	В	J	С	G	I	0	к	Ρ
v	в	R	W	(E	G	R	U	S	М	R	0	Т	S	E
(H	С	Т	Α	W)	G	Т	U	G	Η	S	K	K	E	N
U	0	G	Т	Μ	(E	V	Α	С	U	Α	т	E)	v	A
G	в	в	ĸ	Y	в	Н	W	Z	Y	L	т	Т	W	
G	0	S	Р	I	R	Α	L	В	Α	N	D)	R	в	I
S	к	I	J	Y	в	W	0	D	С	U	D	D/	D	R
I	Ε	(E	Y	Е	W	Α	L	L)	U	М	I	N	в	R
E	G	F	Ν	W)	Α	R	Ν	I	Ν	G	Ţ	°C	Ρ	ש
L	0	W	U	A	Ι	W	Y	Q	D	W	J	т	Μ	Ш
U	х	Е	I	T	0	R	N	Α	D	$\overline{0}$	D	н	Х	L
C	0	Α	S	Т	Α	L	F	L	0	0	D	Ι	N	G)
J	Α	(T	R	0	Р	I	С	Α	L	S	т	0	R	M)
$\mathbf{Z}$	N	L	I	K	0	R	U	H	K	S	Е	K	в	Q

**Crossword Solution** 



19

#### Social Media

MEMA is now using Social Media as another tool to reach residents interested in learning about the agency, disaster preparedness and emergency information. The most widely used MEMA social media tools are FaceBook, Twitter and You Tube not to mention the our website www.msema.org. By joining one or all of our online communities you will receive direct emergency information through news releases, video or even short text messages via Twitter.

#### Facebook

Our FaceBook community of fans grows nearly every day. Here fans can follow updates within the organization, discuss emergency preparedness topics and receive news releases with various updates on events or emergency information. To become a fan go to msema.org and click the link at the top of the page.

## Twitter

If you're not familiar with Twitter it is an application where you can send and receive short messages, called "Tweets", and links to more information and pictures. MEMA uses Twitter to let followers know of upcoming events, news and emergency information. To follow MEMA on Twitter go to twitter.com/msema.



#### YouTube

MEMA is always looking for new ways to reach people with important information and that includes using video. MEMA videos are posted on our MEMA You Tube page. Here users will find preparedness messages from various well know figures as well as video updates on developing situations in an ongoing disaster. Please visit our MEMA YouTube page at www.youtube.com/user/MSEMAorg.

Links to all of these tools may be found on our website at www.msema.org. Please take time to visit our site where we post news releases, emergency preparedness information and free downloads of some MEMA disaster preparedness publications.

## PERSONAL EMERGENCY CONTACT LIST



21

0	Fire Department
	Police Department
	Family Physician
	Veterinarian
ö	Local Emergency Manager
Ť	Family Check-In Contact
7	Phone Number
Ť	Family Meeting Place
	Other



#### www.msema.org

© Mississippi Emergency Management Agency 2010 All rights reserved. Unauthorised copying or reproduction without consent prohibited.