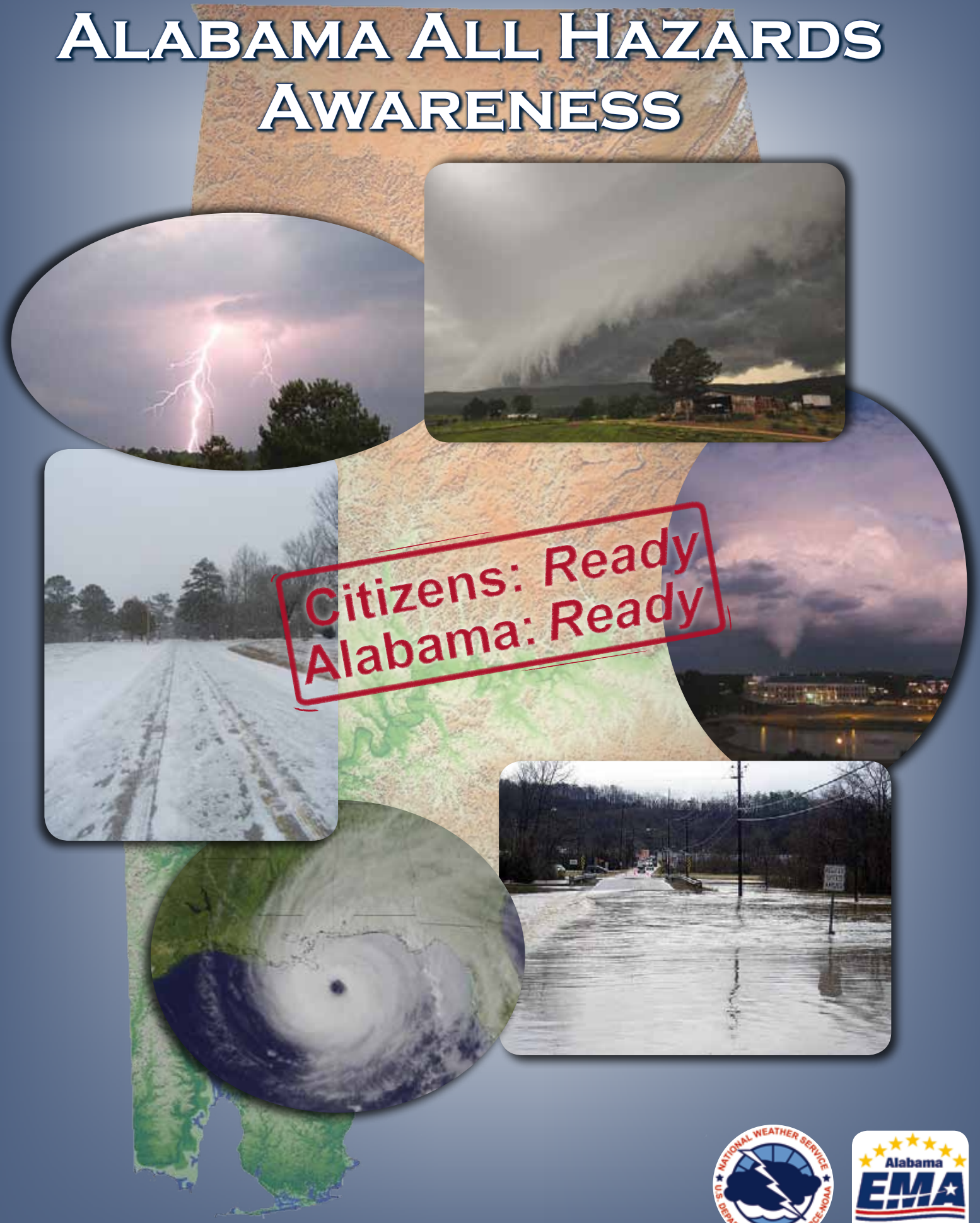
Alabama All Hazards Awareness



National Weather Service
U.S. Department of Commerce-NOAA

Alabama EMA
Emergency Management Agency

A Message to You

Throughout the year, the National Weather Service offices in Alabama partner with the Alabama Emergency Management Agency, the Alabama SKYWARN Foundation, local emergency management agencies, sponsor corporations and volunteer organizations to raise awareness of seasonal weather hazards. The fact is, whether it's a hurricane in July, an earthquake in October, an ice storm in January, or a tornado in April, natural hazards of ALL kinds can happen at ANY time. Any one of these events, which can happen with little to no advance notice, has the potential to be life changing. The decisions YOU make now can be the deciding factor! The National Weather Service offices in Alabama encourage you to use the information in this inaugural "All Hazards" publication to increase awareness and prepare yourself and your families for all types of weather and natural hazards, wherever you may be.

The National Weather Service Offices
of Alabama

The Alabama Emergency Management Agency works with local, state and federal officials to mitigate, prepare and respond to all types of disasters. It is our goal to use all available resources to improve the preparedness level of the state and local communities. However, every resident of Alabama can do their part by taking the time to learn about the risks they face and be prepared for emergencies.

This book is a guide to natural hazards that affect this state. It is an excellent resource for you and your family to use as you prepare for events that may occur. Now is the perfect time to plan what you and your family will do when disaster strikes. You need to make sure you have an adequate family emergency supply kit for the first 72 hours and get an all hazards weather radio and program it. The information in this guide will help you get started.

Please read and share this comprehensive guidebook with your family and friends. Spending time preparing now can be a lifesaver later.

Art Faulkner, Director
Alabama EMA, Clanton

Table of Contents

Partners In Protection

County or city emergency managers and professionals advise and assist public officials with the planning and coordination for mitigation, preparedness, response and recovery from all major emergencies and disasters including natural and man-made hazards. Local emergency managers do not accomplish this alone! For efficiency, they rely on partnerships with other local, state, federal and tribal governmental agencies, private corporations, citizens, the media and many others in their jurisdiction.

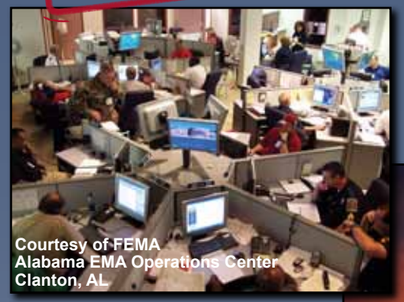
In dealing with hazardous weather events, the National Weather Service (NWS) is the local emergency management agency's most critical partner. The lines of communication between the local emergency management agency (EMA) and the NWS are crucial for transmitting timely warning information to other local partners as well as the public. Emergency managers use the same lines of communication to give real time weather reports to NWS forecasters, who use the information to assess the accuracy of current warnings, and the need for possible future warnings.

Another critical partnership for local emergency managers is the Alabama Emergency Management Agency (AEMA). At times, the magnitude of an event or incident can be so overwhelming that local agencies need additional resources. The local EMA contacts and coordinates with the AEMA for state assistance, which often comes in the form of mutual aid from neighboring EMAs.

Your local emergency management agency, the NWS, and Alabama EMA – partners in protection!

Citizens: Ready
Alabama: Ready

Alabama Assoc. of Emergency Managers



Courtesy of FEMA
Alabama EMA Operations Center
Clanton, AL

Shelby County, Mar 26, 2009
Calera Wind Damage

Courtesy of Kevin McGrath
(mcgrathimages.com)
Madison County, Jan 21, 2010

Courtesy of FEMA
Coffee County, Mar 3, 2007
Enterprise Tornado

Courtesy of FEMA
Mobile County, July 18, 2005
Hurricane Dennis

Awareness and Preparedness

Alabama is susceptible to all types of severe weather and natural disasters, such as earthquakes. Disasters can strike quickly and without warning. They can force you to evacuate your community, or be confined to your home. Basic services and utilities could be cut off; emergency personnel and relief workers might not be able to reach you.


Dekalb County, Apr 24, 2010

Being prepared for such disasters is crucial at home, work, school, and in your community. Before a disaster can strike, you should have an emergency preparedness plan ready. Preparedness plans come in all sizes as dictated by the individual and collective needs of you and your family.

The National Weather Service, Alabama Emergency Management Agency and American Red Cross chapters in Alabama encourage you to take the time to prepare now before the next disaster occurs.

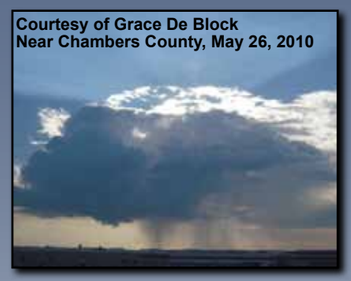
Construct an emergency supply kit with essential supplies for the entire family, including but not limited to the items listed on the next page. The food and bottled water supply should be enough for three days for each person. Ensure your supply kit meets any special requirements for family members. Be aware of neighbors, family and friends who might need help both before and during the event.

Have a thorough knowledge of the safety rules presented in this booklet. Know where the best available protective area is in your home or work place. Make an evacuation plan for the family, including escape routes and a pre-determined meeting place. Include pets in your plan. Learn how to turn off utilities and to use life saving devices such as a fire extinguisher. Practice this plan.

Have reliable methods of communication to receive and exchange information. Remain informed of up to date information from NOAA Weather Radio All Hazards, local television and radio stations, cell phone/text messages, or local warning systems. Have a point of contact outside the disaster area to relay information between other family and friends. Notify this contact of your evacuation plans.

Follow all instructions from local officials and emergency managers.


Clay County, Jun 5, 2010


Courtesy of Grace De Block
Near Chambers County, May 26, 2010


Lee County, Mar 10, 2010

Learn more information about disaster training and emergency supply kits at
www.birminghamredcross.org or **www.redcross.org**.

Personal Emergency Information

Emergency Preparedness Plan

Our protective area is _____

_____

_____ will get the pet(s).

_____ will get the emergency supply kit.

Emergency Supply Kit

- ☐ Flashlight/batteries
- ☐ Portable Radio
- ☐ Medicines
- ☐ First Aid Kit
- ☐ Blankets
- ☐ Food/Water Supply
- ☐ _____
- ☐ _____

Our Kit is located _____

Emergency Phone Numbers

Police _____ Fire _____

Electric _____ Gas _____

Sheriff _____

Evacuation Directions

Outside Contact _____

Meeting Place _____

The Voice of the National Weather Service

NOAA Weather Radio All Hazards (NWR), the voice of the National Weather Service (NWS), provides updated weather information continuously, 24 hours a day, 365 days a year. Watches, warnings, advisories, forecasts, current weather conditions, and climate data are broadcast in three to five minute cycles on NWR stations across the nation.

To listen to NWR broadcasts, a special radio capable of receiving signals in the Very High Frequency (VHF) public service radio band is required. Seven frequencies from 162.400 to 162.550 megahertz (MHz) are used. Weather radios can be purchased at most electronics stores and online. Prices of these radios vary from location to location and depend on the type of radio purchased.

The map to the left shows the names and locations of all NOAA Weather Radio transmitters located in the state of Alabama. Transmitters shown in yellow are maintained by NWS Huntsville, those in red by NWS Birmingham, and those in blue by NWS Mobile. The names of each of the 67 counties have been included on the map, as well as the SAME codes for each county.

For SAME codes for the rest of the United States and marine areas visit:
www.nws.noaa.gov/nwr/indexnw.htm

NOAA Weather Radio All Hazards is useful anytime, but it becomes more important during severe weather. During threatening weather, normal broadcasts are interrupted, and the focus is shifted to the local severe weather threat. Watches and warnings are given the highest priority and are frequently updated.

NWR is a major part of the Emergency Alert System (EAS) that disseminates critical warning information rapidly through commercial broadcast outlets. In an emergency, each NWR station will transmit a warning alarm tone signal followed by information on the emergency situation. This signal is capable of activating specially designed receivers by increasing the volume or producing a visual and/or audible alarm. Though not all weather band receivers have this capability, all weather radios can receive the emergency broadcasts.

The warning alarm device is normally tested each Wednesday between 11 AM and Noon, weather permitting.

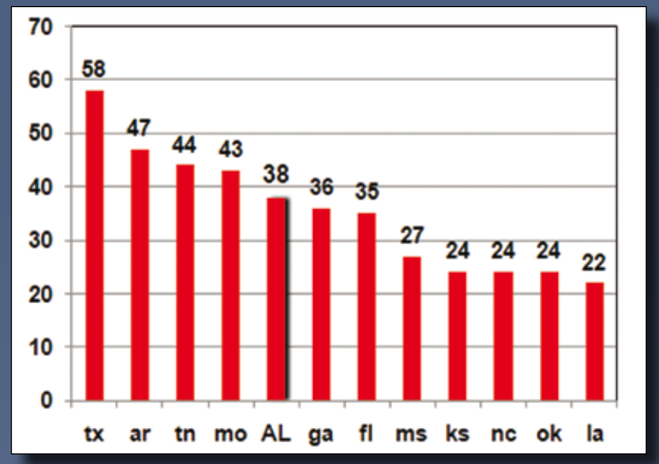
Alabama Tornado Stats

If you think Alabama seems to experience more tornadoes and tornado related fatalities than other states, unfortunately you are correct! A recent study comparing the number of tornadoes over the last 30 years found that the number of confirmed tornadoes in the last decade has doubled compared to the previous 2 decades. Some of the increase in the number of reported and confirmed tornadoes is likely due to several factors, including an increase in population, better technology, trained storm spotters, and better informed citizens.

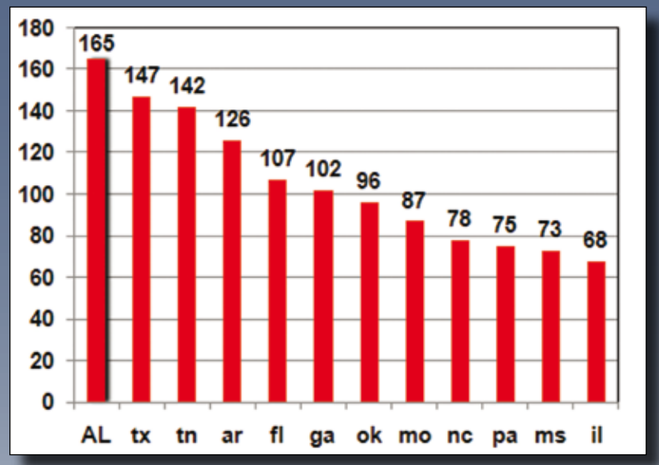
More importantly, as the charts below show, Alabama experiences more tornado related fatalities than any other state, and ranks fifth in the number of "killer tornadoes" when compared to other states. According to Storm Prediction Center records, between 1980 and 2009, Alabama experienced 38 killer tornadoes, which resulted in 165 fatalities.

All the more reason to be prepared and stay informed!

Killer Tornadoes



Tornado Deaths



An EF-4 tornado tore through the Pinhook and Aldridge Grove communities of Lawrence County killing 4 people on February 6, 2008.

Nine people were killed when an EF-4 tornado ripped through the city of Enterprise in Coffee County on March 1, 2007.

A F3 tornado killed 7 people in and around the town of Saragossa in Walker County on November 10, 2002.

Thunderstorms

Thunderstorms are a common occurrence in Alabama, producing damaging winds, heavy rainfall, hail and tornadoes. Severe thunderstorms are more frequent during the active severe weather months of the spring and fall, but can occur anytime of the year, at any time of day. What exactly makes a thunderstorm "severe"? One of several things: a tornado, winds at or above 58 mph, or quarter-size (one inch diameter) hail or larger. Several different types of thunderstorms exist; all are capable of becoming severe.

Single cell thunderstorms usually occur during the summer months when the air is warm, moist, and unstable, and winds are weak. These thunderstorms, also known as pulse or airmass storms, form as individual cells or unorganized clusters of thunderstorms and have little to no movement. They can produce large hail, flash flooding, and microbursts.

Multicell thunderstorms and squall lines are organized complexes of thunderstorms that cover large areas. These storms are more likely to produce severe weather, particularly damaging winds, since they move rapidly across an area. Tornadoes, hail and flash flooding are also possible.

Supercell thunderstorms are the strongest and most dangerous type of thunderstorms. They can produce long-lived tornadoes, winds in excess of 100 mph, and large hail. Fortunately, these storms are not common and usually cover small areas.

Courtesy of Bill Wall
Jefferson County, Mar 15, 2008

The best defense against thunderstorms is to stay inside a substantial building or shelter that will protect you from lightning, wind, hail, tornadoes, and heavy rain. Fortunately, thunderstorms generally pass within an hour. When thunderstorms are expected, stay tuned to your NOAA Weather Radio All Hazards for up to date information. Postpone outdoor activities. Recall your weather safety plan and be ready to take action!

Courtesy of Randall Landers
Clay County, Jun 10, 2010

Lightning

All thunderstorms contain lightning, and although not considered a requirement for a severe thunderstorm, it is very dangerous. From 1995 to 2010 in Alabama, approximately 145 injuries and 25 deaths have been attributed to this underrated killer. Lightning will follow a path of least resistance, typically striking the tallest object in a given area. This could be you, a power pole, or an isolated tree in an open field. Lightning can also travel great distances, striking as far away as 10 miles from the parent thunderstorm. You could be struck well before or after the other effects of a thunderstorm pass your area. You could be struck even if it does not rain!

Courtesy of Bill Wall
Jefferson County, May 15, 2009

Anyone outdoors is particularly vulnerable to lightning. Each person, group or school involved in outdoor activities should have a plan that can be activated quickly when lightning threatens. You should take shelter in a sturdy, enclosed building. Sheds, dugouts, tents and gazebos are not safe. Avoid open spaces, isolated objects, and high ground. Avoid metallic objects such as fences, pipes, power poles, and bikes. Take cover in a hard top automobile, keeping windows up and doors closed. Get out of boats and away from bodies of water.

Once indoors, stay away from windows, doors, and off porches. Avoid contact with any plumbing and electrical items, including TVs and computers. Do not use corded phones, except for emergencies. Do not lie on concrete floors or lean against concrete walls. Remember to bring pets indoors.

Courtesy of Mike Wil
Walker County, May 29, 2010

Remember, if you can hear thunder, you are close enough to a storm to be struck by lightning. For more information on lightning safety, visit **www.lightningsafety.noaa.gov**.

When Thunder Roars, Go Indoors!

Tornadoes

Tornadoes are violently rotating columns of air that descend from thunderstorm clouds and make contact with the ground. All thunderstorms can produce tornadoes, but they are most likely to develop within supercells. Tornadoes come in a variety of sizes and shapes, having wind speeds as weak as 65 mph to over 200 mph. They move with the parent thunderstorm, with forward speeds ranging from nearly stationary to 70 mph. In Alabama, tornadoes are often rain-wrapped and hidden or obscured by terrain. This makes them more dangerous.


Courtesy of Kenny Griffin
Marshall County, Apr 10, 2009

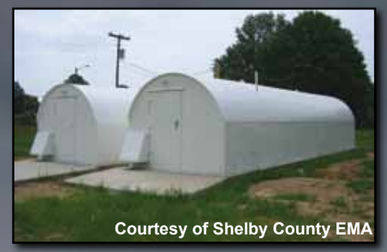
Tornadoes can occur during any time of the year, at any time of day. Most tornadoes develop during two peak severe weather seasons: the spring months of March, April and May; and the fall months of November and early December. Alabamians are encouraged to be prepared when there is any potential for tornadoes.

Tornado Safety

In Homes or Small Buildings:

Go to a pre-determined shelter, such as a basement. Get under something sturdy like a heavy table, if available. Protect yourself from flying debris with pillows, heavy coats, blankets, or quilts. Use bicycle or motorcycle helmets to protect your head.

If an underground shelter is not available, go to a small interior room, such as a closet, bathroom, or interior hallway, on the lowest level. Put as many walls between you and the outside as possible. Stay away from windows and doors.

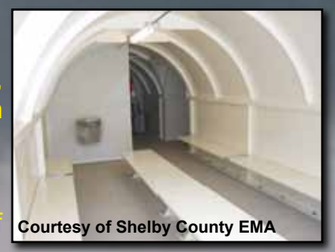

Courtesy of Shelby County EMA

In Mobile Homes:

Leave well in advance of approaching severe weather and go to a strong building. If there is no shelter nearby, get into the nearest ditch, depression, or underground culvert and lie flat with your hands shielding your head.

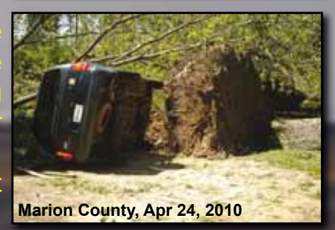
In Public Buildings:

Go to the best available, designated protective area. Basements are best, but interior locations on the lowest level also offer protection. Stay away from windows and other hazards inherent to the building.


Courtesy of Shelby County EMA

In a Vehicle:

If caught in your vehicle during a tornado, you have two options, neither one of them good. The first option is to remain in your car and try to out run the tornado, accurately determining the path and speed of the tornado. You can pull off the road and protect yourself from flying debris and shattering glass, hoping the tornado is not strong enough to pick up your vehicle. The other option, leaving your vehicle and taking shelter in a ditch. Unknown terrain, fencing, and other obstacles could make this difficult. Take cover far enough away from your car, so it and other heavy debris does not wind up on top of you. Remember, do not put yourself in the position to have to choose between these options.

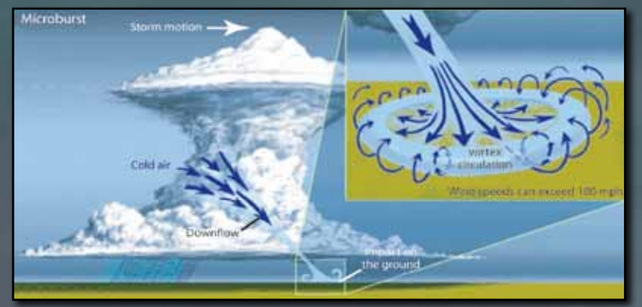

Marion County, Apr 24, 2010

Damaging Wind

Each year in Alabama, damaging wind events occur ten to 20 times more often than tornadoes. Often times, initial reports of significant storm damage are erroneously attributed to tornadoes, when strong, straight-line winds are actually responsible. Straight-line winds are damaging winds from a thunderstorm which are not associated with rotation. These winds can reach speeds above 100 mph with a damage path extending many miles. Trees and power lines can be knocked down. Mobile homes over turned. Well-built structures, such as homes and office buildings, damaged.


Talladega County, Jun 21, 2010


Jackson County, Apr 13, 2009



A downburst is one type of damaging, straight-line wind, which typically occurs during the summer months in single-cell afternoon thunderstorms. Downbursts develop quickly and are very difficult to detect. They can occur with little or no advance notice and can be accompanied by a loud roar. As a result, downbursts are often mistaken as tornadoes. Wind speeds associated with downbursts usually exceed 60 mph and rarely exceed 100 mph. Microbursts, spatially small downbursts, can produce winds stronger than 100 mph.

During any type of severe weather, do not put yourself in a situation where an appropriate shelter is not available. Listen to NOAA Weather Radio All Hazards or another information source for continuous updates. When severe weather is approaching, limit outdoor activities. Remain close to a sturdy shelter.

Hail

Although hail forms in every thunderstorm, it only reaches the ground if atmospheric conditions are favorable. Hail typically has the best chance of falling to the ground in springtime thunderstorms, when the atmosphere is colder, especially at mid and high levels. Hail may take on many different sizes and shapes, such as a thin flat penny or a baseball.

Large hail can be very dangerous. It can cause damage to objects, such as motor vehicles, structures, and trees. Bodily injuries, or even deaths, can result if people are caught outdoors when large hail occurs.


Tallapoosa County, Apr 10, 2009


Dekalb County, Mar 12, 2010

Hurricanes

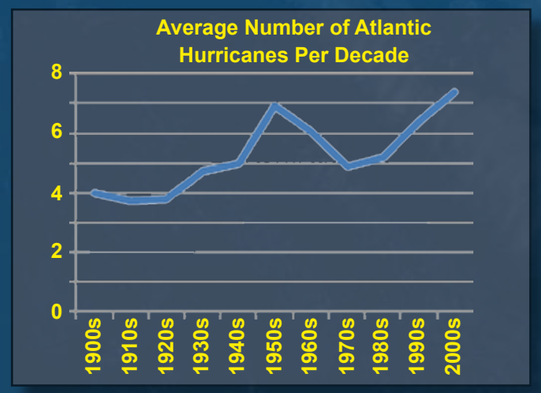
Hurricanes and tropical storms form over warm ocean waters, like those found in the Gulf of Mexico during the summer and fall of each year. On average, 11 tropical storms, 6 of which become hurricanes, develop in the Atlantic basin each hurricane season, which runs from June 1st to November 30th. The peak hurricane threat for the Alabama coast is in August and September, but hurricanes can strike the coast during every month of the hurricane season. Everyone in Alabama needs to be prepared for hurricanes and tropical storms. Even inland areas, well away from the coastline, can experience destructive winds, tornadoes and floods from tropical storms and hurricanes.

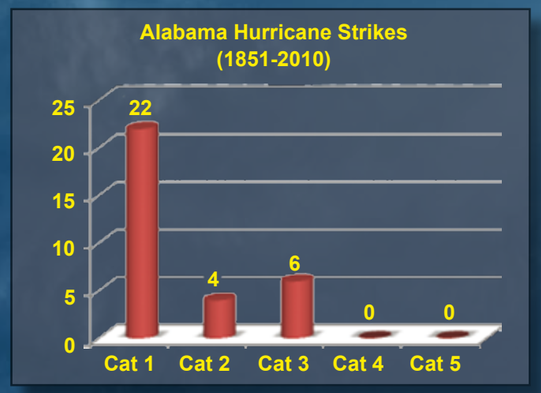
Tropical Cyclone Definitions

- 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 maximum sustained winds of 74 mph or greater.
- Hurricane/Tropical Storm Watch: Hurricane or Tropical Storm conditions are possible in the watch area within 48 hours.
- Hurricane/Tropical Storm Warning: Hurricane or Tropical Storm conditions are expected in the warning area within 36 hours.
- Extreme Wind Warning: Short duration warnings issued by the NWS to provide the public with advance notice of the onset of extreme sustained winds of a major hurricane, usually associated with the eyewall of the hurricane.

Historical Hurricane Info

The Atlantic Basin has, on the whole, seen a very active period of tropical cyclone development since 1995. During this recent period of increased activity, the Alabama coast has been impacted by hurricanes a total of 7 times. The hurricane return period for a major Category 3 hurricane on the Alabama coast is approximately 30 years. Keep in mind that just because Alabama has not historically seen a Category 4 or Category 5 hurricane, the premise that Alabama will not see a storm that strong is misleading. Take measures now to be prepared!



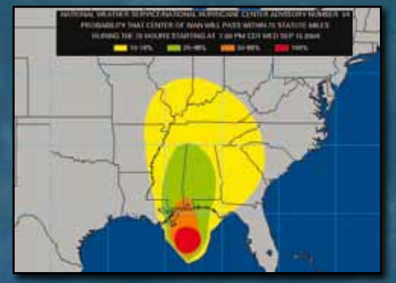


Hurricane Forecasts

The National Hurricane Center (NHC) is the official source for tropical cyclone advisories and forecasts, and is responsible for issuing tropical cyclone watches and warnings for the United States.

Some commonly used Tropical Cyclone Products:

- Public Advisories
- Forecast Advisories
- Forecast Discussions
- Wind Speed Probability Forecasts
- Tropical Weather Outlooks
- Hurricane Local Statements
- Tropical Storm/Hurricane Wind Watches/Warnings
- Extreme Wind Warnings



Examples of NHC Graphics for Hurricane Season *(from top left)*

Tropical Storm Advisory graphic—Cone of Uncertainty

Cumulative Wind History (updated with each advisory)

Wind Speed Probability Forecast

Extreme Wind Warning done for CAT 3-5 Hurricanes—Immediate Warning

Utilizing and Interpreting NHC's Forecast Advisory

- The white uncertainty cone of the forecast advisory represents the 10-year average error. The center of the tropical cyclone will remain in the white error cone only 67% of the time.
- Remember that hurricane conditions can be felt hundreds of miles away from the center of the storm.
- **DO NOT** focus solely on the exact forecast track!
- **DO NOT** wait for a hurricane watch or warning before implementing your initial preparations, as it may be too late to complete them.

Additional Tropical Weather Information:

National Weather Service, Mobile, AL: www.srh.noaa.gov/mob

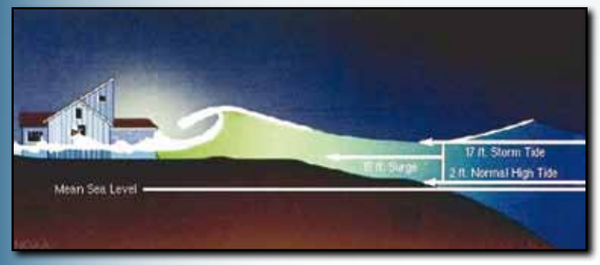
National Weather Service, Tallahassee, FL: www.srh.noaa.gov/tae

National Hurricane Center: www.nhc.noaa.gov

Hurricane Impacts

Most people associate strong winds with hurricanes. While that is true, there are other impacts which are just as hazardous. Storm surge and coastal flooding, inland flooding, and tornadoes are all possible with a landfalling tropical system.

Storm surge, the wall of water that is pushed toward the shoreline as a hurricane moves onshore, is the greatest threat to life and property along the coast. A major hurricane can produce a surge tens of feet higher than normal high tide. The rise in water can cause severe flooding in coastal areas. In addition, pounding of waves associated with the increased water levels can cause significant damage to structures not made to withstand such force. Many buildings can withstand hurricane force winds until their foundations, undermined by erosion, fail.



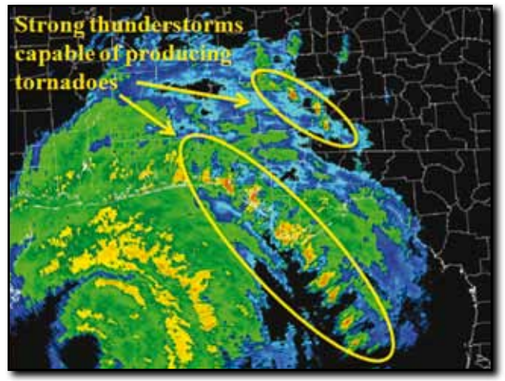
There is always uncertainty about how intense the storm will be when it makes landfall, and where that landfall will occur. Emergency managers and local officials balance that uncertainty with the human and economic risks to their community. Most emergency managers plan for a storm one category higher than what is forecast. This precaution helps minimize the loss of life from hurricanes.

Those living in coastal and near-coastal communities should know the evacuation zone that they live in. When local officials declare an evacuation for your zone, move to the nearest possible evacuation destination outside of the danger zone. Your family can choose to stay with friends or relatives, or you may choose a hotel or motel.

The most deadly hazard produced by tropical systems is inland flooding. Inland flooding has killed more people than any other tropical cyclone related hazard over the past 30 to 40 years. Slow moving storm systems can produce tremendous rainfall amounts in a short period of time. This disastrous flooding is a major threat to communities hundreds of miles from the coast.

Hurricane force winds can destroy buildings and mobile homes, down trees and power lines, and transform signs, roofing, and small items into dangerous flying missiles. Winds associated with a hurricane are most intense near the center of the storm. As a storm moves inland, winds rapidly decrease, but hurricane force winds can be felt as far as 150 miles inland. The stronger and faster the storm is moving, the further inland hurricane force winds will be felt.

Landfalling tropical systems also produce tornadoes, adding to the destructive power of the storm. Tornadoes are most likely to occur in the right front quadrant of the hurricane, in rainbands far away from the center of the storm. However, they are possible near the eyewall. Tornadoes associated with tropical systems are generally less intense than those produced by supercell thunderstorms. When added to the larger area of hurricane-force winds, these tornadoes can still produce substantial damage and be potentially deadly.



Did you know?

Residents in Mobile and Baldwin counties can use the Risk Analysis Tool on the Alabama Emergency Management Agency website to determine their storm surge risk.

Hurricane Preparation

Proper hurricane preparations made ahead of time will not completely protect your property from damage. However, proper planning can reduce the risk of death and injury to you and your family. Careful preparation well ahead of time can reduce stress levels leading up to the hurricane, and following a few simple tips may also greatly reduce the damage to your property.

Before Hurricane Season:

- Prepare an emergency supply kit and create an evacuation plan.
- Know your flood and evacuation zones.
- Check tie-downs on mobile homes.
- Trim back trees and shrubbery near your home.
- Repair broken fences.
- Replace old or damaged roofing shingles.
- Check and/or install hurricane clips to roof trusses and side walls.
- Clear clogged rain gutters and downspouts.
- Reinforce garage doors and double entry doors.
- Inspect existing or install hurricane tested shutters.
  Alternative: Use 5/8" or greater exterior grade plywood secured by 21/2" screws or special clips. Cut wood to size, pre-drill holes, and place anchors on homes.
- Have vehicle regularly serviced and in good working order.
- Make preparations for pets.

Citizens: Ready
Alabama: Ready

Immediately Before the Storm:

- Listen frequently to radio, TV or NOAA All Hazards Radio for updates.
- Double check items in your emergency supply kit. Have enough supplies for at least 72 hours.
- Fuel your vehicle.
- Have plenty of extra cash on hand.
- Store light weight outdoor objects and board up windows.
- Mobile home residents **MUST** evacuate if told to do so!
- Turn refrigerator to maximum cold and open only when necessary.
- Fill bathtub and large containers with water for sanitary purposes.

Final Actions if Leaving:

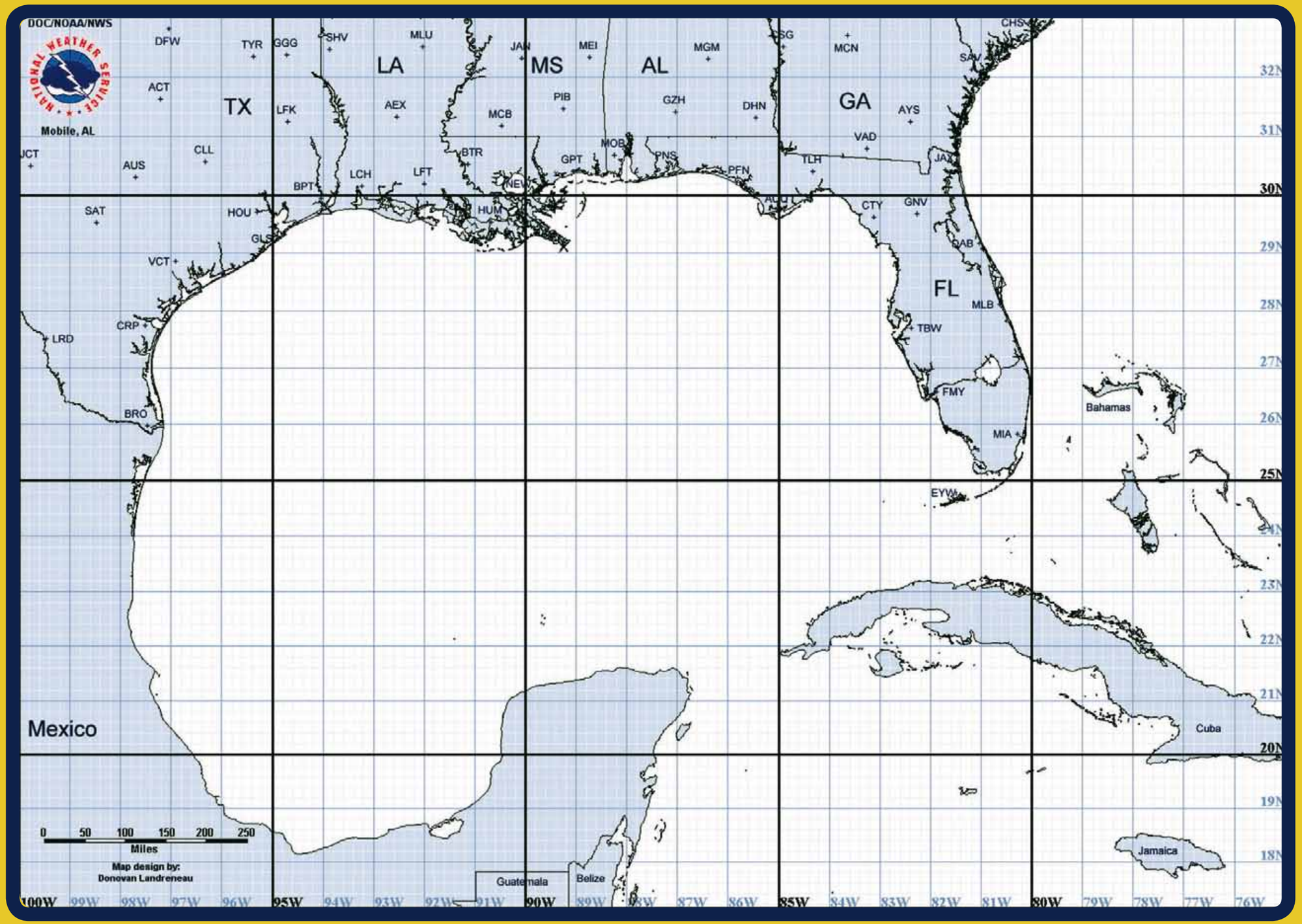
- Evacuate immediately if ordered to do so!
- Unplug small appliances and turn off propane tanks.
- Board up remaining windows, doors and brace garage door.
- Take pets, if possible.
- Notify a point of contact of your evacuation plans.
- Lock home securely.

Final Actions if Staying:

- Close storm shutters. Board up remaining doors, leaving an emergency exit open.
- Open the refrigerator and freezer only if necessary. (Note: 25 pounds of dry ice will keep a 10-cubic foot freezer below freezing for 3-4 days.)
- Remain inside, away from boarded up windows and doors.
- Take refuge in your predetermined safe room.
- Do not venture outside during the eye of the storm. Some of the strongest winds may occur shortly after the eye passes.

Please refer to the other preparation and safety pages within this booklet for more information.

Track Hurricanes! Hurricanes are tracked by the position of the eye of the storm by latitude and longitude. Latitude is the horizontal position (noted on the right side of this map). Longitude is the vertical position (noted at the bottom of this map).



The Saffir-Simpson Hurricane Wind Scale

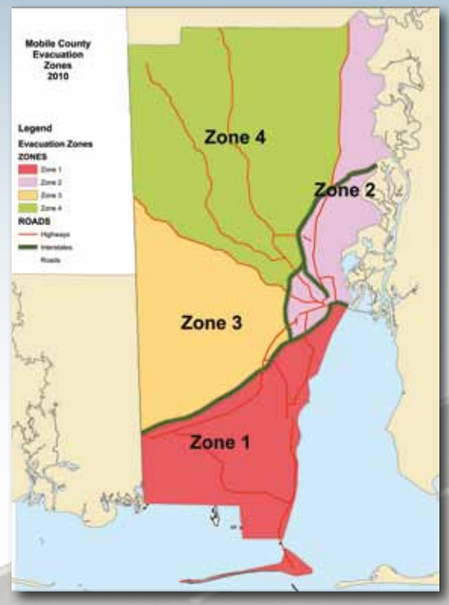
- Category 1—74 to 95 mph
  - *Very dangerous winds will produce some damage*
- Category 2—96 to 110 mph
  - *Extremely dangerous winds will cause extensive damage*
- Category 3—111 to 130 mph
  - *Devastating damage will occur*
- Category 4—131 to 155 mph
  - *Catastrophic damage will occur*
- Category 5—>155 mph
  - *Catastrophic damage will occur*

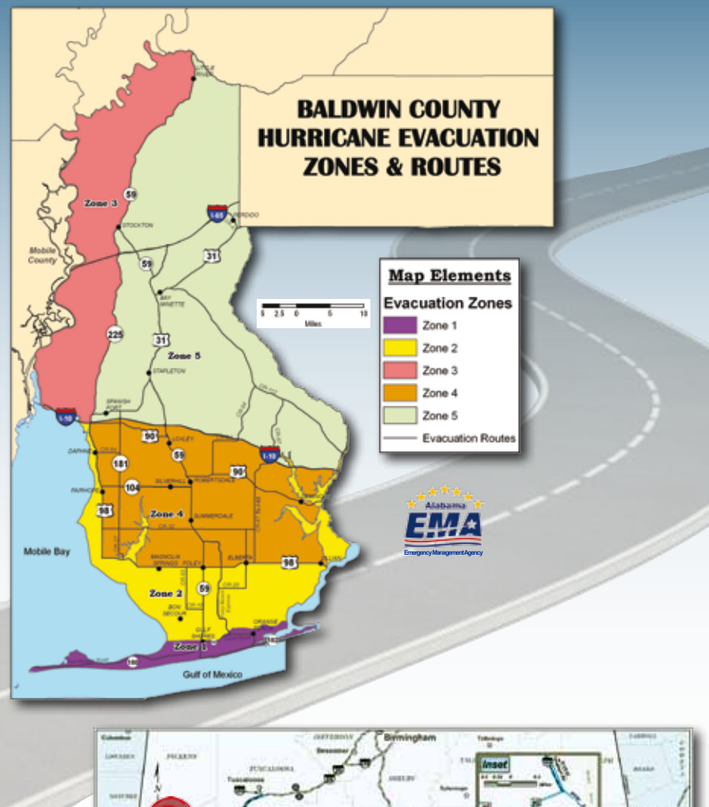
*NOTE: The scale does not address the potential for other hurricane-related impacts, such as storm surge, rainfall-induced floods, and tornadoes.

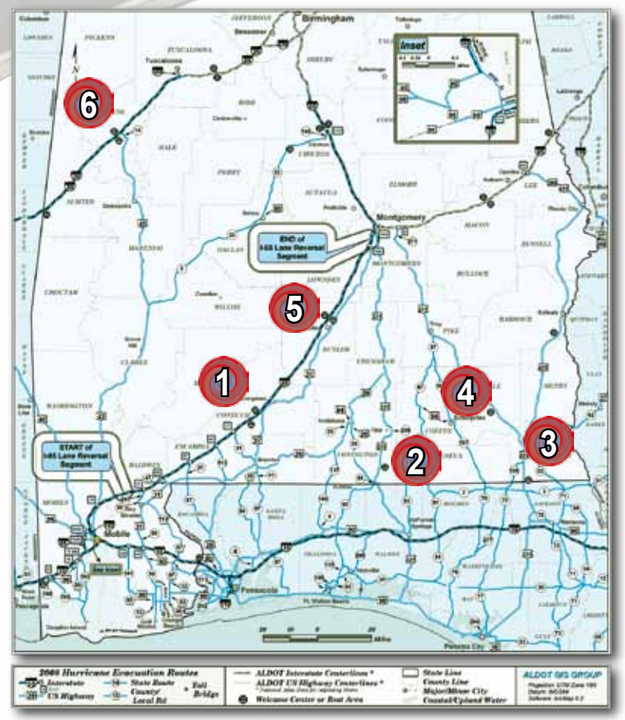
Hurricane Evacuations

Know Your Evacuation Zone!

Listen to local radio and television to determine what route to take as you evacuate!







Rest Areas and Welcome Centers Northbound

1. Rest Area, I-65, milepost 84.5
   If all lanes are flowing north the Rest Area opposite will be open as well.
2. Rest Area, Hwy 331, milepost 8.3
3. Welcome Center, Hwy 231, milepost 0.7
4. Rest Area, Hwy 231, milepost 37.7
5. Rest Area, I-65, milepost 133
   If all lanes are flowing north the Rest Area opposite will be open as well.
6. Rest Area, I-59N/I20E, milepost 38.5

Rip Currents

The beauty of the Gulf Coast, attracts thousands every year. However, that beauty can disguise danger! Rip Currents are likely to be present in the high winds and rough seas that accompany a tropical storm or hurricane, so people should stay out of the water when a storm is approaching their area.

What is a rip current?

A strong current or channel of rapidly flowing water moving AWAY from the shore that develops when excess water is piled against the shore during certain weather patterns. Rip Currents are dangerous because they can pull unprepared swimmers away from shore and into deeper waters. A rip current can become deadly when swimmers panic and struggle against the current while being pulled farther and farther away from the beach.

If you are caught in a rip current:
1. Don't fight the current
2. Swim out of the current, then to shore
3. If you can't escape, float, or tread water
4. If you need help, call or wave for assistance

What are some signs of a rip current?

A channel of churning, choppy water; a narrow channel of discolored or murky water; a line of seaward moving foam are all signs of possible rip currents.

What do you need to know before heading to the beach?

Swim at beaches with life guards, if possible. Ask local life guards or officials about the current rip current risk. Understand the flag system for the beach you are at! If you see a red flag, stay out of the water!

What should you do if caught in a rip current?

Stay Calm and **DO NOT** fight the current. Even strong swimmers cannot swim against these currents. Escape the current by swimming in a direction *parallel* to or along the shore line. When you are free of the current, swim **AT AN ANGLE** to the shore. If you are not able to escape, float or tread water until the current weakens then swim at an angle to the shore.

Beach Warning Flags

5 Flag System

- Water Closed to Public
- High Hazard
  High Surf and/or Strong Currents
- Medium Hazard
  Moderate Surf and/or Strong Currents
- Low Hazard
  Calm Conditions, Exercise Caution
- Dangerous Marine Life

Alabama's public beaches in Baldwin County use the five flag system to alert beachgoers of surf conditions. Flags are posted at all public beach areas within Orange Beach, Gulf Shores and Gulf State Park, where surf conditions are monitored throughout each day. When red flags are flying, conditions are life threatening to anyone entering the surf. Please remember, however, that the absence of red flags does not assure safe conditions. No flag warning system is used in Mobile County along the beaches of Dauphin Island, but dangerous surf hazards can still occasionally exists.

Please note: On some public beaches, it is **ILLEGAL** to swim under a red flag!

Be Safe! • Know how to swim • Never swim alone • If in doubt, don't go out

Flooding

Alabama is susceptible to flooding year-round due to its proximity to the Gulf of Mexico and the nearly unlimited supply of moisture it provides. When storm systems move into the area and combine with this moisture, resulting heavy rainfall can produce flooding. This can occur from large storm systems, decaying tropical systems or slow-moving, summertime thunderstorms, which produce large amounts of rainfall in a short amount of time.

Flash floods often occur within minutes or hours of heavy rainfall or a dam failure. The rapidly rising water can destroy structures and bridges, down trees, create new waterways and trigger catastrophic mudslides. Areas most prone to flash floods are urban areas, small streams and rivers, culverts, and storm drains. Urbanization increases water runoff two to six times over what would occur in natural terrain. This causes streets and parking lots to become swift moving rivers, and basements and building ground floors to quickly fill with water.


Escambia County, Dec 14, 2009


Courtesy of Eric Jones
Shelby County, Mar 10, 2010

Flooding can also occur when the water level of a river, stream, or lake increases. This can happen when spring or winter rains fill the basin with too much water too quickly. Other events occur from slow moving storm systems or decaying tropical systems. Water overflows the river banks into low lying areas and can last for several days or weeks.

Before and after pictures of Walnut Creek in Chilton County. Waters quickly rise above bank full and spread into nearby fields during flood events. Note the roadway in the before picture is now completely under water. Photos provided by John Sirmon.

Flood Safety

Flooding is the most damaging, costly, and deadly severe weather-related phenomena, costing the United States over $5 billion in property damage annually. On average, flooding is responsible for more deaths each year than lightning or tornadoes. How are you going to be ready?

Know what to listen for.

A Flash Flood or Flood Watch means conditions are favorable for sudden short-term (less than 6 hours) flooding or long duration (longer than 6 hours) flooding, respectively. A Flash Flood or Flood Warning means flooding conditions are imminent and you should take action immediately. A River Flood Warning is issued when river, stream or lake levels are expected to rise above bankfull.


Jackson County, Aug 17, 2010

Courtesy of Eric Jones
Shelby County, Mar 10, 2010

Move to higher ground away from low-lying areas, storm drains, and stream beds. Do not return to flooded areas.

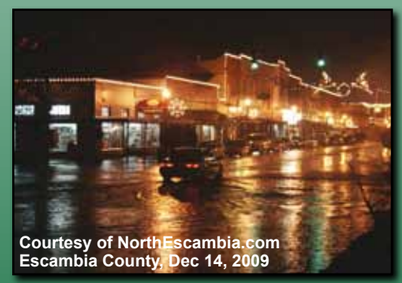
Flood waters carry debris that could cause serious injury or death. Water could be moving very quickly just below the surface. Only 6 inches of fast-moving water can knock an adult over. Children should not be allowed to play or walk near flowing water.


Shelby County, Mar 10, 2010

Never drive across flooded roadways or around barricades.

Flood waters can rise very quickly, covering your vehicle or sweeping it downstream. Just two feet of water can move most vehicles, including trucks and large SUVs. Road surfaces could be washed away or large debris might be located below the surface. If your vehicle is caught in rising water, abandon it immediately and seek higher ground.

Be especially cautious at night, when it is harder to recognize flood dangers.


Courtesy of NorthEscambia.com
Escambia County, Dec 14, 2009


Courtesy of NorthEscambia.com
Escambia County, Dec 14, 2009


Courtesy of NorthEscambia.com
Escambia County, Dec 14, 2009

Winter Weather

While the frequency of extreme winter weather events is relatively small in Alabama, winter weather can cause death, injury, and property damage. With the start of each new season, ***preparation*** is the key to lessening the dangers and hazards associated with winter weather.

Alabama Temperature and Snowfall Extremes:

Lowest Recorded Temperatures

City	Temp (°F)	Date
Huntsville	-11	01/30/1966, 01/21/1985
Muscle Shoals	-13	02/14/1905
Birmingham	-10	02/13/1899
Montgomery	-5	02/13/1899
Mobile	-1	02/13/1899

Limestone County, Feb 9, 2010

Most Snow in 24 Hours

City	Amount (in)	Date
Huntsville	17.1	12/31-01/01, 1964
Muscle Shoals	12	02/11-12, 1910
Birmingham	13	03/12-13, 1993
Montgomery	11	12/05-06, 1886
Mobile	6	02/14-15, 1895

Winter Terminology

Winter Storm/Ice Storm Warning: Issued when a combination of significant accumulations of snow, freezing rain, or sleet is expected. Winter Storm Warnings are usually issued within 24 hours before the event is expected.

Winter Storm Watch: Alerts the public to the potential for winter storm conditions within the next 12 to 36 hours.

Winter Weather Advisory: Issued when accumulations of snow, freezing rain/drizzle, or sleet are expected to cause hazardous driving conditions.

Freezing Rain Advisory: Issued when accumulations of ice from freezing rain are expected to cause hazardous driving conditions.

Sleet: Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects. However, it can accumulate like snow and cause a hazard to motorists and pedestrians.

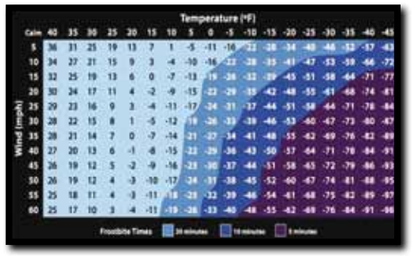
Freezing Rain: Rain that falls onto a surface with a temperature below freezing (32°F). This causes it to freeze to surfaces, such as trees, cars, and roads, forming a coating or glaze of ice. Even small accumulations of ice can cause a significant hazard.

Winter Safety

What is Frostbite and Hypothermia?

Frostbite - injury or destruction of skin and underlying tissue, most often that of the nose, ears, fingers or toes, resulting from prolonged exposure to freezing or subfreezing temperatures.

Hypothermia - an abnormally low body temperature, often caused by prolonged exposure to cold.



Wind Chill

As wind speeds increase during the winter months, they can make the temperature outside feel even colder than it actually reads on a thermometer. This cooling factor is given a name—the wind chill effect.

Safety Tips

Keep ahead of winter weather by listening to the latest weather warnings and bulletins on NOAA Weather Radio, local radio or television. Be alert to changing conditions and avoid unnecessary travel.

In your home...

- Check battery powered equipment, and stock extra batteries for flashlights and a portable television or radio. Also, check emergency cooking facilities.
- Check your food/water supply and stock extra if needed. Your supplies should include food that requires no cooking or refrigeration in case of power failures. Consider high energy foods such as dried fruit or candy. Don't forget prescription medicines, first aid supplies, and other specialty items.
- Check your supply of heating fuel, but prevent fire hazards due to overheated coal or oil-burning stoves, fireplaces, heaters, or furnaces. Emergency responders can be hampered by extreme weather conditions and may not be able to respond quickly—arrange for emergency heat in case of an extended power failure.
- Stay indoors during storms and cold snaps. Elderly persons, children, and those in bad health may be especially susceptible to cold weather. Avoid overexertion, especially if shoveling snow.
- Dress to fit the season. Loose, layered clothing will keep your body warm, and a hat and mittens will protect your extremities.
- Don't forget your pets or livestock. Move animals to sheltered areas. For pets, bring them indoors or provide some form of heat. Provide fresh water since many pets die from dehydration in winter storms.

In your vehicle...

- Be sure your vehicle is winterized by the end of November. Check oil, belts, tires and battery to ensure good working condition.
- Carry a winter storm car kit, especially if you anticipate travel in north Alabama. Items to consider include blankets/sleeping bags, flashlights and batteries, first aid kit, non-perishable foods, extra clothing, ice scraper, water, road maps, small shovel, rope, kitty litter or sand for traction and a cell phone car charger.
- If the storm exceeds or even tests your driving limitations, seek available shelter immediately. Plan your travel and select primary and alternate routes. Check the latest weather information before departing, and drive carefully and defensively. Avoid traveling alone, and be sure someone knows your travel plans and route of travel.

Winter Precipitation

There are several different types of precipitation that can be observed during the winter months. These include sleet, snow and freezing rain. A phenomenon known as freezing fog may also be reported when there is sufficient moisture near the ground and the temperature is at or below 32°F. Each of these wintry precipitation types present different hazards, from deteriorated road conditions to prolonged power outages.

What is the Difference Between Snow, Sleet and Freezing Rain?

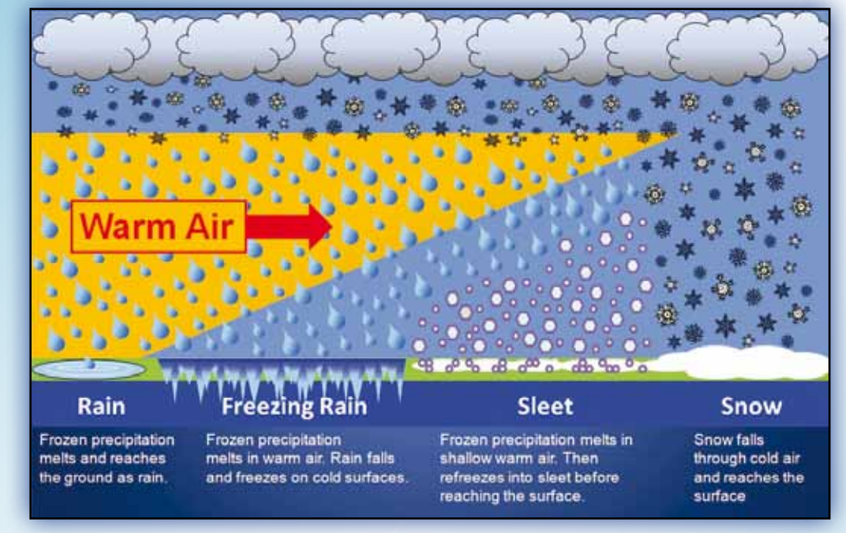
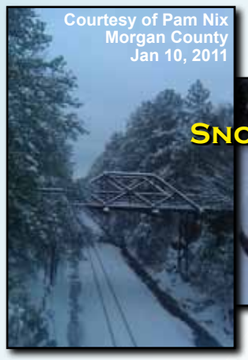


Photo Examples:



Snow

Freezing Rain

Freezing Fog

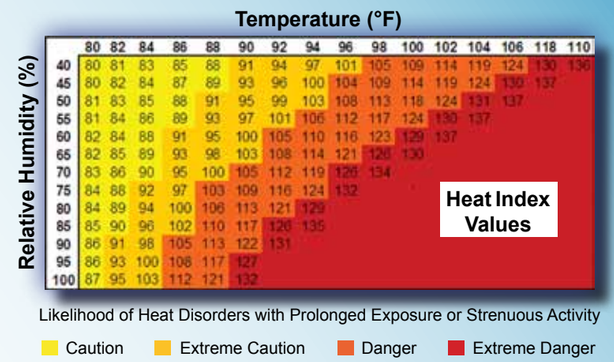
Sleet

Wintry Mix

Extreme Heat

Temperature extremes can affect Alabama during both the summer and winter. Understanding the dangers of such extremes is vital. Heat is the number one weather-related killer in the United States. More deaths are attributed to heat each year than floods, tornadoes, lightning, and hurricanes combined.

What is ***Heat Index***? It is a measure of how hot it really feels outside when the moisture content of the airmass is considered along with the air temperature (or when relative humidity is added to the air temperature). Heat Index values are calculated for shady, light wind conditions. Full exposure to sun can increase values by 15°F or more. Strong winds, especially in a very dry airmass, are also extremely dangerous, because they add more heat to your body.



Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

Heat Disorders

Sunburn - a burn to living tissue, such as skin, which is produced by overexposure to ultraviolet (UV) radiation, commonly the sun's rays.

Heat Cramps - muscle spasms that result from loss of large amount of salt and water through exercise.

Heat Exhaustion - can be a precursor to heat stroke; symptoms include heavy sweating, rapid breathing and a fast, weak pulse.

Heat Stroke - a body temperature of greater than 105.1°F (40.6°C) due to environmental heat exposure with lack of thermoregulation.

Safety Tips

- Dress in lightweight, light-colored clothing that reflects heat and sunlight.
- Reduce or eliminate strenuous activities in the hottest part of the day. Reschedule activities to a cooler time.
- Drink plenty of water, even if you do not feel thirsty. Water keeps your body cool.
- Avoid alcoholic beverages.
- Avoid too much sun exposure. Sunburns make the process of heat dissipation from your body more difficult.
- Make sure seating surfaces and equipment such as safety buckles are not too hot.
- Never leave a child or pet unattended in a vehicle, even with the windows down. Leaving windows open slightly does not significantly decrease the heating rate in a parked car.
- Always lock car doors and trunks, even at home, to prevent a child from locking themselves inside accidently.
- Ensure all child passengers have left the car when you reach your destination.

Drought

Drought is an extended period when an area has a persistent and abnormal deficiency in its water supply. In Alabama, this usually occurs because both moisture and rain-producing weather systems are blocked from entering the area. Once a drought develops, it may "feed" on itself because of very dry soil conditions, etc., and intensify with time.

Drought can occur anywhere, and can persist for months or even years. However, even a short, intense drought can have severe effects. Drought can impact many things, such as agriculture, water supply and quality, energy production and wild fires. Its onset and end are often difficult to discern, making it difficult to monitor its progress or quantify its impact.

Drought can be classified as agricultural (short-term) or hydrological (long-term). An agricultural drought normally occurs due to a deficit of rainfall over a relatively short period of time, and has short-term effects such as crop losses, damaged lawns and shrubbery, etc. A hydrological drought is one that has persisted for a longer period of time, generally many months or even years. This type of drought has long-term effects, such as major drops in reservoir levels, ground water levels and deeper wells, affecting such things as public water supplies.

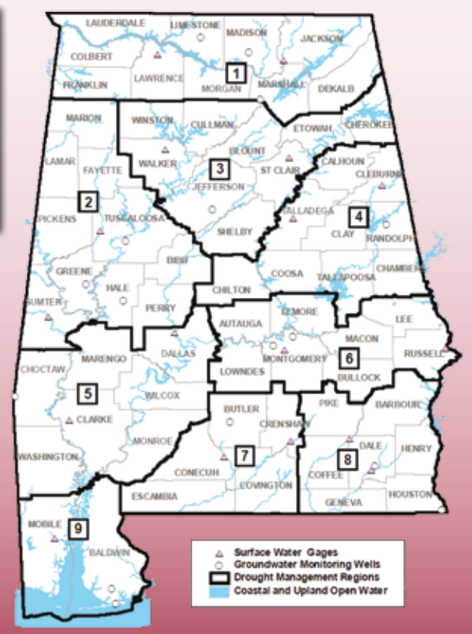

Courtesy of Alabama Forestry Commission

Examples of drought impacts include things such as diminished crop growths or yields, reduced electricity generation by hydro-electric dams, or shortages of water for both industrial use and public consumption. Livestock might be severely impacted due to a shortage of feed, or the public might be prohibited from watering lawns and shrubbery. Even recreational activities can be affected, such as reservoirs becoming too low to support boat traffic. Increases in the number of wildfires can also be a result of drought conditions as soils become too dry and therefore more prone to catching fire.


Courtesy of Tallapoosa Co EMA
Lake Martin, Oct 2007

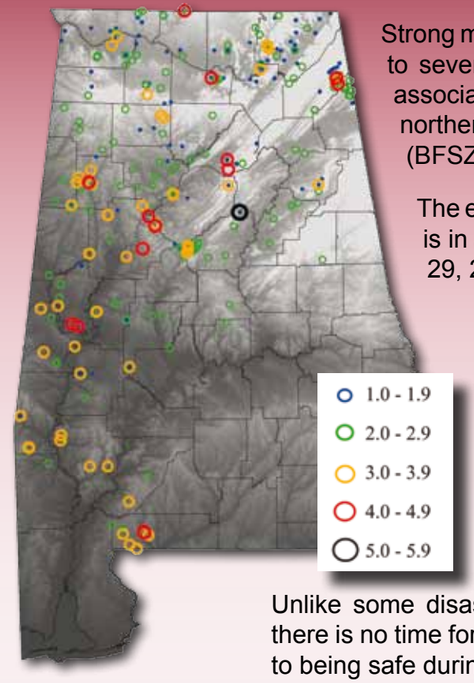

Courtesy of WSFA 12 News
Montgomery, AL

Drought planning and management is accomplished through short-term reductions in vulnerability (called Mitigation) and through long-term structural changes (called Adaptation). Examples of mitigation or short-term reduction are more prudent watering of plants and not washing automobiles. Examples of a long-term change or adaptation might be as simple as planting more drought resistant plants, or developing irrigation systems in areas prone to drought.



The map to the right shows the various Drought Management Regions and Monitoring locations throughout the state. This map is courtesy of the Alabama Department of Economic and Community Affairs, Office of Water Resources

Earthquakes



Strong magnitude earthquakes are possible in Alabama due to its proximity to several active seismic zones. The majority of the earthquakes are associated with the Southern Appalachian Seismic Zone (SASZ in northern and central Alabama) and the Bahamas Fracture Seismic Zone (BFSZ in southern Alabama).

The effects of an earthquake can be felt in Alabama even if the epicenter is in another state. For example, a 4.9 magnitude earthquake on April 29, 2003, centered near Fort Payne, Alabama was felt in 13 states.


Courtesy of Andrea Booker
FEMA News Photo

Unlike some disasters, earthquakes are nearly impossible to forecast. Normally, there is no time for evacuation and you must shelter-in-place. Planning ahead is key to being safe during an earthquake.

Before a quake

- Have potential hazards in your home and/or workplace fixed.
- Create an emergency preparedness plan and supply kit, remembering to include your pets.
- Assist those with disabilities or special needs to make a preparedness plan.

During a quake

- Take cover under a sturdy piece of furniture, holding on and moving with it until the shaking stops.
- Crouch in an interior corner of the building, protecting your head and neck with your arms. Avoid anything that could fall, such as light fixtures or furniture.
- If outdoors, move far away from trees, signs, buildings, and utility wires. Remain in the open area until the shaking stops.
- If driving, safely stop the car in an open area, away from poles, bridges, and buildings. If a power line falls on the vehicle, remain inside until a trained person removes the hazard.

After a quake

- If trapped, cover your mouth and tap on a pipe or wall. Shouting is a last resort.
- Check for injuries, giving first aid when possible. Do not move seriously injured persons unless they are in immediate danger.
- Check for damage and inspect utilities. Clean up spilled medicine, bleach, gasoline or other flammable liquids immediately. Leave the area if you smell gas or fumes from other chemicals.
- Continue to follow your emergency preparedness plan.

You should discuss your emergency preparedness plan with family members, in the event it needs to be put into action. For information on how to create an emergency preparedness plan and supply kit specific to the threat of earthquakes, contact the Alabama Emergency Management Agency.

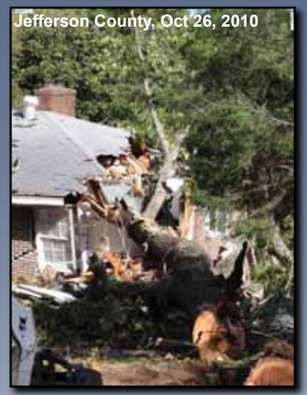
Safety After the Storm

Safety does not stop after the storm has passed. Everyone should be aware of the many dangers that might exist after bad weather has moved out of the area.


Walker County, Mar 10, 2010


Dekalb County, Oct 25, 2010


Dauphin Island
After Hurricane Ivan


Jefferson County, Oct 26, 2010

- If needed, locate your emergency supply kit. Promptly treat any injuries you or your family suffered during the event. Check neighbors for injuries. Call for medical assistance. Do not move seriously injured people, unless they are in immediate danger of further injury.
- Be cautious of downed or weakened trees and structural damage. Do not attempt to move structural supports or large pieces of debris.
- Be cautious of downed power lines or objects in contact with downed power lines. Report electrical hazards to the police and utility company.
- Wear sturdy shoes or boots, long sleeves, and gloves when inspecting your home or business for damage or when handling small debris. Be aware of exposed nails and broken glass.
- Do not use open flames or run generators indoors. If there is damage to your home or business, any of these actions could ignite fires. Use a flashlight or battery powered lantern. Do not connect generators to your home's electrical circuits.
- If there is frayed wiring or sparks, an odor of something burning, or wires were exposed to water, turn off the electrical system at the main circuit breaker.
- If you smell gas or suspect a leak, turn off the main gas valve, open all windows, and leave immediately. Do not do anything that could cause a spark, like using the phone or turning on the lights. Notify the gas company and the police. Do not return to the house until you are told it is safe to do so.
- If you suspect water or sewage lines are damaged, do not use your plumbing.
- Clean up or rope off dangerous areas.
- Remember to care for pets after a disaster has occurred.
- If you evacuated, wait for the all clear from local officials before returning to your home. Be prepared to show proof of residence.

Citizens: Ready
Alabama: Ready


Walker County, Apr 24, 2010


Orange Beach
After Hurricane Ivan

NWS on the Web

The NWS is dedicated to providing the most up to date weather information to each and every community using the latest technology. Forecast offices are staffed around the clock with meteorologists performing a wide range of duties from issuing warnings on the most life threatening storms to the pleasant task of issuing a sunny day forecast. Once a warning or forecast has been issued, it is disseminated through numerous communication networks including weather wires, NWS Weather Radio All Hazards, and the Internet.

www.weather.gov

www.srh.noaa.gov/hun

www.srh.noaa.gov/bmx

www.srh.noaa.gov/mob

www.srh.noaa.gov/tae

The award winning NWS Internet site is highly accessible to the general public. Nowhere else will you find such complete, in-depth coverage of your local weather. For any location in the United States, a network of 122 offices provides all your weather needs in a standardized, easy to navigate website. Whether you are seeking radar, climate, or forecast information, the site provides a one-stop shopping point. In addition to those features, every NWS internet site has a clickable weather status map. This map displays all current watches, warnings, statements, and advisories, quickly alerting you of any weather threats that may be occurring in your area. That's just the front page...

Your National Weather Service offices across Alabama continually work to improve the quality of the products we provide to our community. Using the newest technologies available, the NWS is now creating several new products, including the Multimedia Impact Briefings and Graphicasts. Forecast challenges, uncertainty in a forecast, any upcoming hazardous weather, and significant changes in the latest forecast are all points that may be highlighted in the Graphicasts and Multimedia Impact Briefings. These products are issued multiple times a day and can be found on the front page of each office's webpage. Shown below are examples of the types of graphics featured as part of the Graphicast (left) and Multimedia Impact Briefings (right).

BE YOUR OWN HERO

GET READY FOR EMERGENCIES

COLLECT AND STORE THESE 10 ESSENTIAL ITEMS TO GET READY FOR AN EMERGENCY.

Place your emergency supply kit in waterproof bags.

Store the bags in one or two emergency containers, such as plastic tubs, unused trash cans or duffel bags.

Store your kit where family members can locate it.

Try to have enough food, liquid, batteries and other supplies to last one to four weeks depending on the emergency.

For more information about emergency preparedness, contact:

ADPH, Center for Emergency Preparedness
adph.org

Alabama EMA
ema.alabama.gov

U.S. Department of Homeland Security
ready.gov

Centers for Disease Control and Prevention
cdc.gov

Health and Human Services
pandemicflu.gov

get10

get10@adph.state.al.us

Get10! Get Ready for Emergencies

Alabama Department of Public Health | Call Toll Free:
1-866-264-4073

For TTY call Alabama Department of Rehabilitation Services
1-800-499-1816

1 WATER

2 FOOD

3 CAN OPENER

4 MEDICATIONS

5 FIRST AID

6 FLASHLIGHT

7 RADIO

8 CLOTHING

9 PERSONAL CARE ITEMS

10 IMPORTANT DOCUMENTS

Special Thanks to Our Sponsors

To recognize their commitment to public service and safety, the National Weather Service extends a special thanks to those contributing to this edition of the Alabama All Hazards Awareness Booklet:

Additional thanks to ***Perry County*** and ***Walker County*** for their contribution as well.

Contacts for More Information

Alabama National Weather Service Offices

North Alabama
Huntsville Weather Forecast Office
David Nadler
256-890-8503
320 Sparkman Drive
Huntsville, AL 35805
WWW.SRH.NOAA.GOV/HUN

Central Alabama
Birmingham Weather Forecast Office
John De Block or Jim Stefkovich
205-664-3010
465 Weathervane Rd
Calera, Al 35040
WWW.SRH.NOAA.GOV/BMX

Coastal and Southwest Alabama
Mobile Weather Forecast Office
Jeff Garmon or Jeff Cupo
251-633-6443
8400 Airport Blvd, Bldg 11
Mobile, AL 36608
WWW.SRH.NOAA.GOV/MOB

Southeast Alabama
Tallahassee Weather Forecast Office
Jeff Evans or Paul Duval
850-942-8833
Love Bldg, Florida State University
Tallahassee, FL 32306
WWW.SRH.NOAA.GOV/TAE

For the **Alabama Emergency Management Agency**, contact Yasamie Richardson in Clanton at 205-280-2275.
For the **American Red Cross**, contact your local chapter or Tim Turner in Birmingham at 205-458-8263.
For the **Alabama Department of Education**, contact the Information & Communication Office in Montgomery at 334-242-9950.

Photo Credits

Front Cover : Background - State Relief Map, courtesy of the Cartographic Research Lab at the University of Alabama.
Foreground - Lightning photo taken in Walker County. Shelf cloud photo taken June 2, 2010, in Clay County. Huntsville tornado photo taken Jan 21, 2010, courtesy of Chris Shultz. Alabaster flooding Photo taken Mar 10, 2010, courtesy of Eric Jones. Hurricane Ivan satellite image taken Sept 15, 2004. Snow photo taken Dec 13, 2010, in Cullman County.

Background Photos:
Page 8,9 - Lightning over Gulf Shores, AL, taken by Christopher R. Hudson on June 16, 2007.
Page 10,11 - Wall cloud over Florence, AL, courtesy of WHNT-TV 19 in Huntsville, AL. Taken on April 7, 2006.
Page 12, 13 - Hurricane Katrina. Visible satellite image. Taken on August 29, 2005.

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