



WAAY 31
STORMTRACKER

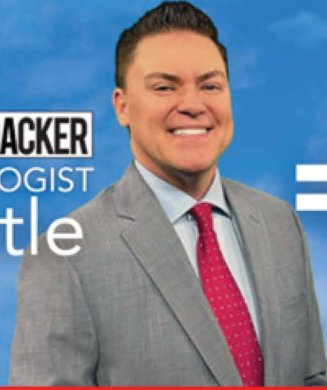
**WEATHER
SAFETY GUIDE**



3 Live
Doppler
Radars



WAAY 31 STORMTRACKER
CHIEF METEOROLOGIST
Jeff Castle



COVERAGE
YOU CAN COUNT ON

Letter from Jeff Castle

I am so excited for the opportunity to come home to North Alabama and be the next Chief Meteorologist of the WAAY 31 StormTracker Weather Team in Huntsville! The 12 years that I previously spent in the area was a transformative time in my career and personal life. I met my spouse and lifelong friends during my time here. I also covered a devastating generational tornado outbreak that showed me what a huge responsibility I have to provide critical weather information to the people I am serving. Severe weather can happen in North Alabama at anytime of the day or night. It only takes one storm to be a life changing event for you. Having the power of the WAAY 31 Triple Doppler Network will give me the ability to track storms in real time so that you can have more time to get to safety when seconds count! I am looking forward to providing you with weather coverage you can count on for calm days and impactful ones while rekindling my relationship with those that know me and building new ones with those that don't.

WAAY 31 StormTracker



THE WAAY 31 STORMTRACKER, POWERED BY LYNN LAYTON CHEVROLET, is our weather forecasting vehicle equipped with cutting edge technology that takes you inside storms. With four cameras and multiple broadcasting tools, our weather team and reporters can broadcast live from the StormTracker at the push of a button. Be on the lookout for the WAAY 31 StormTracker at community events and schools across North Alabama too!

To request a visit from the WAAY 31 StormTracker at your next event, go to waaytv.com.

The WAAY 31 SkyCam Network offers live views of North Alabama weather conditions 24/7. Cameras are located at our studio atop Monte Sano, Alabama A&M University, Calhoun Community College, Toyota Field, Decatur, Muscle Shoals, Guntersville, and the Sand Mountain Amphitheater.

Additional cameras are coming soon! Check out our camera views anytime on waaytv.com or by downloading the WAAY 31 News and Weather Apps.



Beyond the Forecast

Tornado Basics
Thunder and Lightning
.....
Hurricanes
Winter Weather



What are Tornadoes?

A **TORNADO IS A VIOLENTLY ROTATING COLUMN OF AIR THAT EXTENDS FROM A THUNDERSTORM TO THE GROUND.** Tornadoes can be one of the most violent weather phenomena we experience.

Changes in wind speed and wind direction in the atmosphere cause air to begin rotating horizontally.

Warm air rises through the updraft of a thunderstorm and hits cooler air aloft (high in the sky). This rotating air is now spinning vertically inside the storm, creating a mesocyclone.

As the rotating mesocyclone picks up speed, more warm air continues to be drawn up into the thunderstorm. A funnel cloud develops and begins to drop. Once the funnel hits the ground, a tornado has formed.

Tornado Fun Facts

An average of **62** tornadoes touch down in **Alabama** annually.

Tornadoes can happen **any** month of the year, and anytime day or night!

The highest probability of a tornado is between 12pm and 8pm.

A record **145** tornadoes touched down in Alabama in 2011.

Peak tornado season in Alabama is March, April, and May.

62 tornadoes touched down on April 27th, 2011 alone.

Around **73%** of tornadoes in Alabama are considered weak on the Enhanced Fujita scale.

A **secondary** tornado season runs from November through February.

ALL tornadoes are dangerous no matter how weak, so it's important to have a plan of action!

The Enhanced Fujita Scale

THE ENHANCED FUJITA SCALE (OR EF SCALE) IS USED TO RATE THE ESTIMATED WIND SPEEDS OF A TORNADO BASED ON THE DAMAGE CAUSED BY THE STORM. Tornadoes are rated on a 0 to 5 scale. **EF-0** tornadoes are the weakest, while **EF-5** tornadoes are the most violent.

0

65 - 85 MPH

MINOR

Shingles blown off, parts of roofs peeled off, damage to gutters/siding, branches broken off trees.

1

86 - 110 MPH

MODERATE

More obvious roof damage, broken windows, exterior doors damaged, mobile homes overturned or badly damaged.

2

111 - 134 MPH

CONSIDERABLE

Roofs torn off, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.

3

136 - 165 MPH

SEVERE

Entire stories of homes destroyed, significant damage to large buildings, trees begin to lose their bark.

4

166 - 200 MPH

EXTREME

Well-constructed homes are leveled, cars are thrown long distances.

5

Over 200 MPH

INCREDIBLE

Well-built homes swept away, steel-reinforced concrete structures critically damaged, trees completely snapped.

Parts of a Storm

Thunder

THUNDERSTORMS CAN PRODUCE heavy rain, flash flooding, hail, thunder, lightning, and even tornadoes.

- When thunder roars, go indoors!
- Stay away from windows!
- If you are in a swimming pool, lake, river or any body of water, get out immediately and seek shelter indoors.
- Stay away from metal objects.
- Do not use household appliances.

DID YOU KNOW?

If we could harness the power of one thunderstorm, we could power multiple single family homes for over 6 months!

Lightning

LIGHTNING OCCURS WHEN A LINE OF NEGATIVELY CHARGED PARTICLES AT THE BOTTOM OF A CLOUD stretches towards the ground and makes contact with a line of positively charged particles above the earth's surface. When the charges touch, they carve a path through the sky that results in a flash of electricity known as lightning.

- 90% of all lightning strikes are cloud-to-cloud lightning.
- Thunder is a sonic boom through the sky as a result of lightning.
- Lightning is 5 times hotter than the surface of the sun and strikes last less than one second.
- There are roughly 100 lightning related deaths per year.



What are Hurricanes?

HURRICANES ARE POWERFUL STORMS. Though North Alabama may be hundreds of miles from the coastline, impacts such as flooding from heavy rainfall as well as damaging winds are still possible. Hurricanes can even generate tornado outbreaks as their tropical rainbands pass over North Alabama.

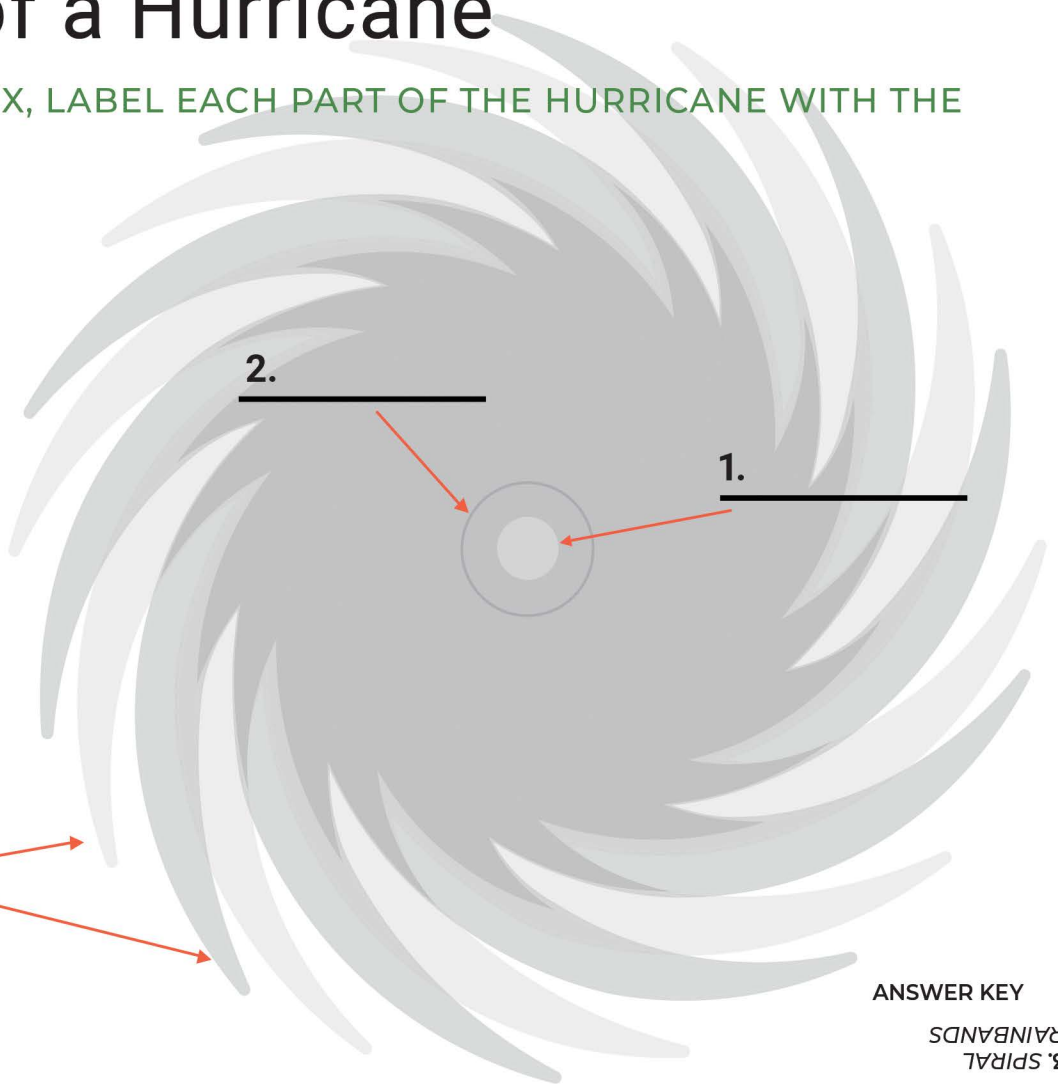
DID YOU KNOW?

Hurricanes can be as wide as 500 miles across, and have super strong winds that blow faster than 74 miles per hour.

Anatomy of a Hurricane

USING THE WORD BOX, LABEL EACH PART OF THE HURRICANE WITH THE CORRECT NAME.

- Eye**
- Eye-wall**
- Spiral**
- Rainbands**
- Clouds**



- ANSWER KEY**
- 1. EYE
 - 2. EYE-WALL
 - 3. SPIRAL RAINBANDS

Winter Weather and Snow

DURING THE WINTER, MOST PRECIPITATION IN CLOUDS STARTS OUT AS ICE. HOWEVER, IT DOES NOT ALWAYS REMAIN FROZEN BY THE TIME IT REACHES THE GROUND. Many times, the temperatures fluctuate from the top of the cloud to the surface of the earth. Those fluctuations determine the final form of the precipitation once it reaches the ground.

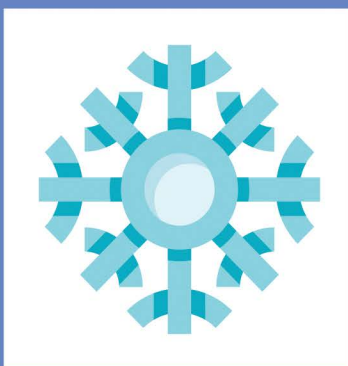
Snow occurs when the temperature stays at or below freezing (32°F or 0°C) from the top of the cloud down to the ground.

Sleet occurs when ice falls through a shallow layer of warmer air and melts, then encounters a deeper layer of sub-freezing air near the earth's surface. This causes the melted snowflake to refreeze, forming an ice pellet.

Freezing Rain falls to the surface as rain. A thin layer of sub-freezing air at the surface causes the rain to freeze upon contact to anything that is at or below freezing (32°F or 0°C). As this process continues, ice can accumulate on trees, power lines, and other surfaces. This can cause downed trees and power outages.

DID YOU KNOW?

No two snowflakes are alike. They form in different ways and all have unique shapes and patterns.



Different temperature and humidity levels create different growth rates and patterns in snowflakes.

Some grow slow and steady, while some grow fast and complex.



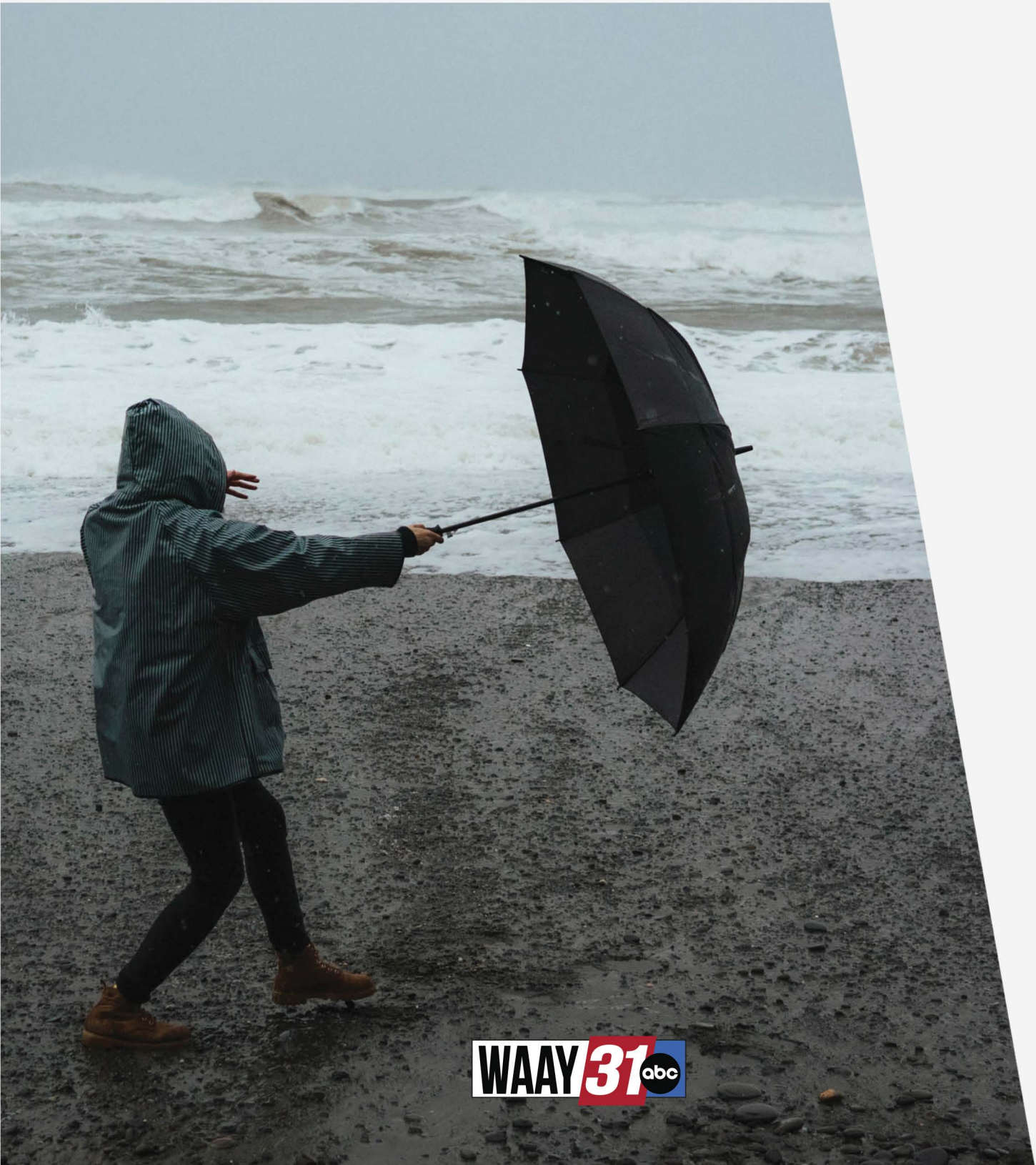
Make Sure You
Pay Attention to
the Weather!



Watches vs. Warnings
Find Your County

.....
Storm Safety
Shelter Search

Facing the Storm



Let's TACO-bout It

The National Weather Service (**NWS**) issues watches and warnings when tracking severe storms across the United States. But what is the difference between a **WATCH** and a **WARNING**?

A WATCH

A taco watch means you have all the ingredients to make tacos, but you have not actually made the tacos yet.

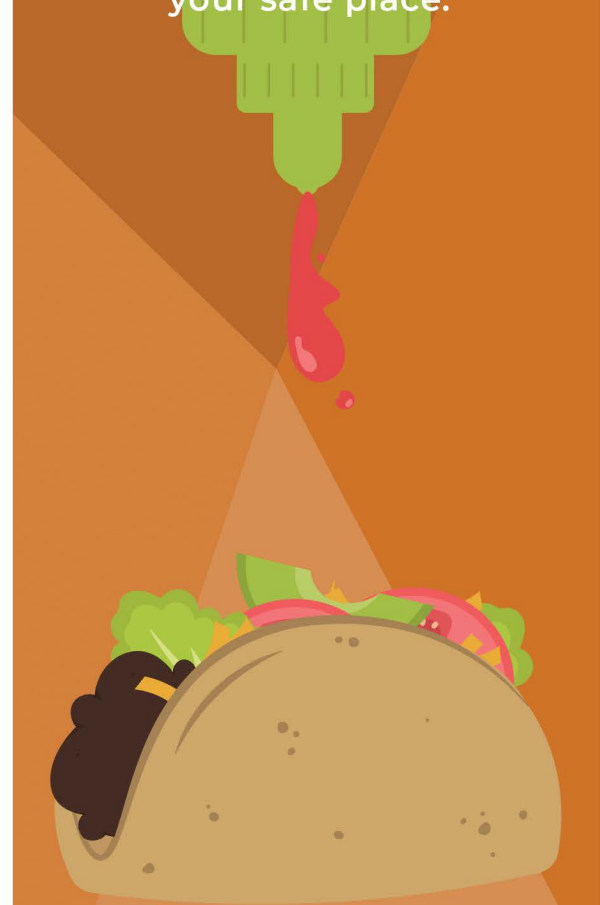
With a tornado watch, all the ingredients in the atmosphere are ready to make tornadoes, but no tornadoes are happening yet.



A WARNING

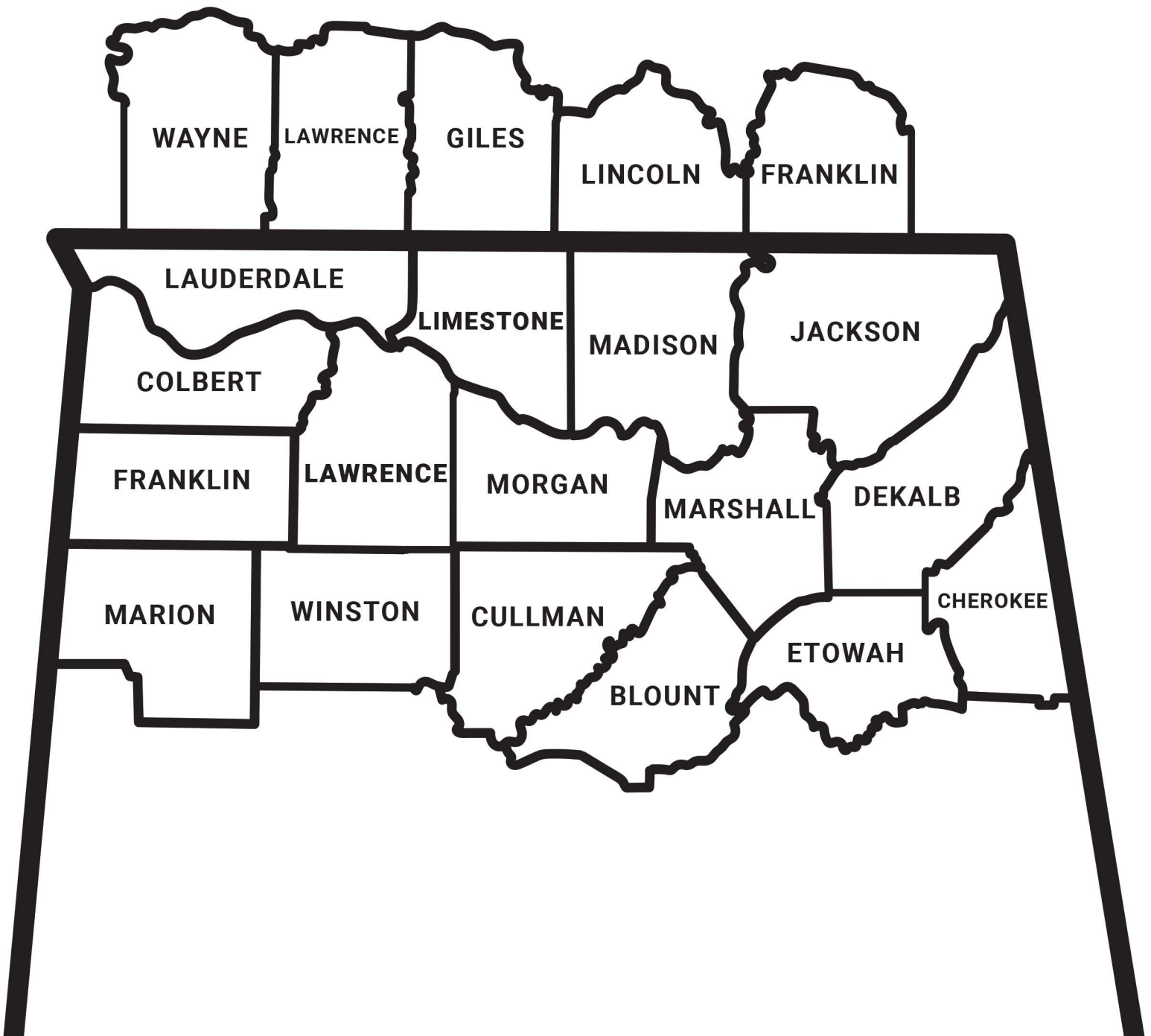
A taco warning means that the taco ingredients have been put together and it's time to eat!

With a tornado warning, tornadoes are happening and it's time to take cover in your safe place.



Color your County

GO THROUGH THE COUNTIES OF NORTH ALABAMA AND A PORTION OF SOUTHERN TENNESSEE. COLOR IN EACH COUNTY BUT COLOR YOURS GREEN.

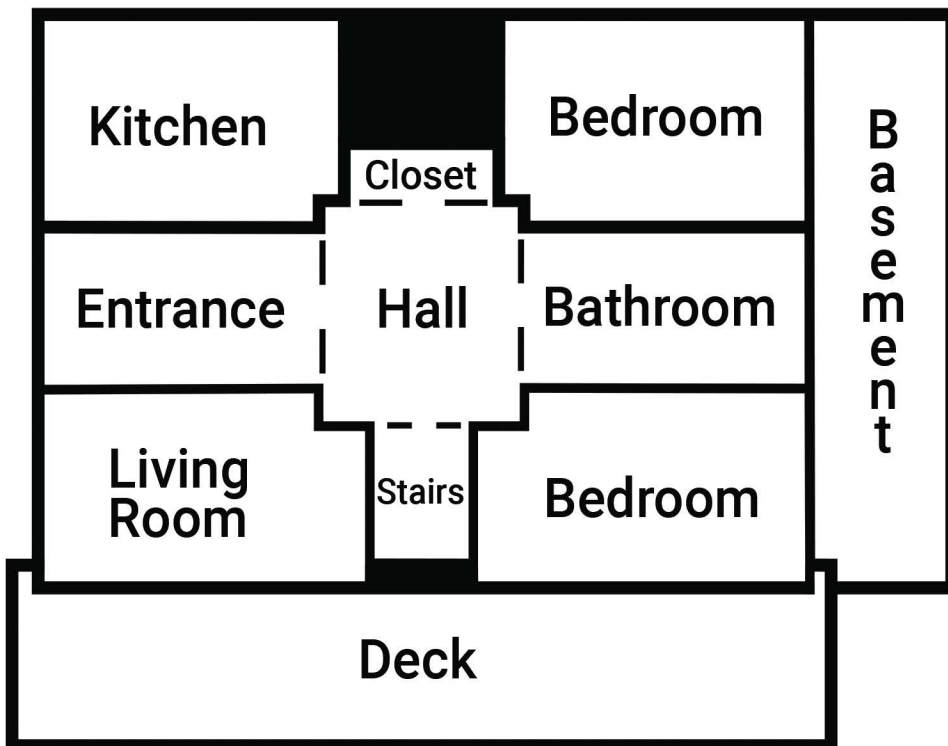


Storm Safety Tips

- Check the Forecast Regularly.
- Create an Emergency Kit and Safety Plan!
- Have a Second WAAY to get alerts and updates, like the WAAY 31 StormTracker Weather App.
- If a warning is issued for your location, go to your safe place immediately.
- Stay away from windows and doors leading to the outside.
- Keep watching WAAY 31 News for updates and new warnings.
- Stay updated on the latest watches and warnings before you leave your safe space.
- Wait until a meteorologist gives your area an “all clear.”
- Check on family, friends, and neighbors to make sure they are safe.
- After the severe weather threat is over, check for damage and call for help if needed.

Find the Safest Spot

COLOR THE PARTS OF A HOME THAT ARE LEAST SAFE TO SAFEST FROM A STORM.



COLOR KEY

Color the rooms using this guide, flip me upside down to see if you are correct.

- NOT SAFE
- MAYBE SAFE
- VERY SAFE

VERY SAFE: CLOSET, BASEMENT
 STAIRS
 MAYBE SAFE: HALL, BEDROOM,
 BATHROOM
 NOT SAFE: DECK, ENTRANCE,
 KITCHEN, LIVING ROOM

Helpful Safety Resources



The National Weather Service (NWS) is an agency of the United States Government. There are 122 NWS Forecast Offices in the United States! Meteorologists are at each office 24 hours a day, 7 days a week, providing daily forecasts and issuing watches and warnings during severe weather.

Our National Weather Service office is located in Huntsville and covers 14 counties across North Alabama and Southern Tennessee. When the National Weather Service in Huntsville issues watches and warnings for your

area, tune in to WAAY 31 on-air and online as we track severe storms. To learn more about the National Weather Service, visit weather.gov.

Locate a Nearby Shelter

REMEMBER: THE TIME TO GO TO A STORM SHELTER IS BEFORE ANY TORNADO WARNINGS ARE ISSUED FOR YOUR LOCATION. If there is a Tornado Warning, it is safer to stay where you are!

Most communities have storm shelters so residents can take cover during severe weather. These shelters are designed to withstand the force of high winds and tornadoes. Storm shelters usually open when an area has been placed under a Tornado Watch and will stay open until the severe weather threat is over.

Scan this QR Code to find a storm shelter near you.





thisTV
NETWORK

ROCKET CITY
TRASH PANDAS

**CATCH ALL
HOME GAMES ON**

WAAY 31.6



ANELLO
Answers It

**Ask WAAY 31 Meteorologist
Grace Anello!**

**Wednesday on WAAY 31 news
at 11:30 AM and 4:30 PM**

You might just get a shout out!

Submit your question on this page or to ganello@waaytv.com and yours might be the next question answered live, on-air, on Anello Answers It!

School _____

Teacher Name _____

Student Name _____

Your Weather Question



ACCESS THE **WAAY 31** STORMTRACKER

24/7

DOWNLOAD THE WAAY 31 STORMTRACKER
WEATHER APP



WHATABURGER.

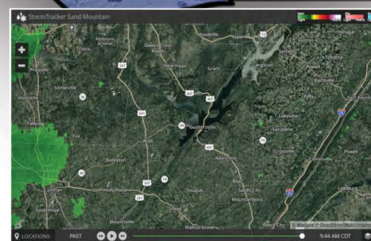
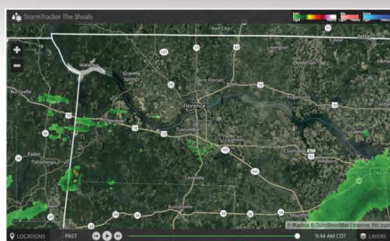
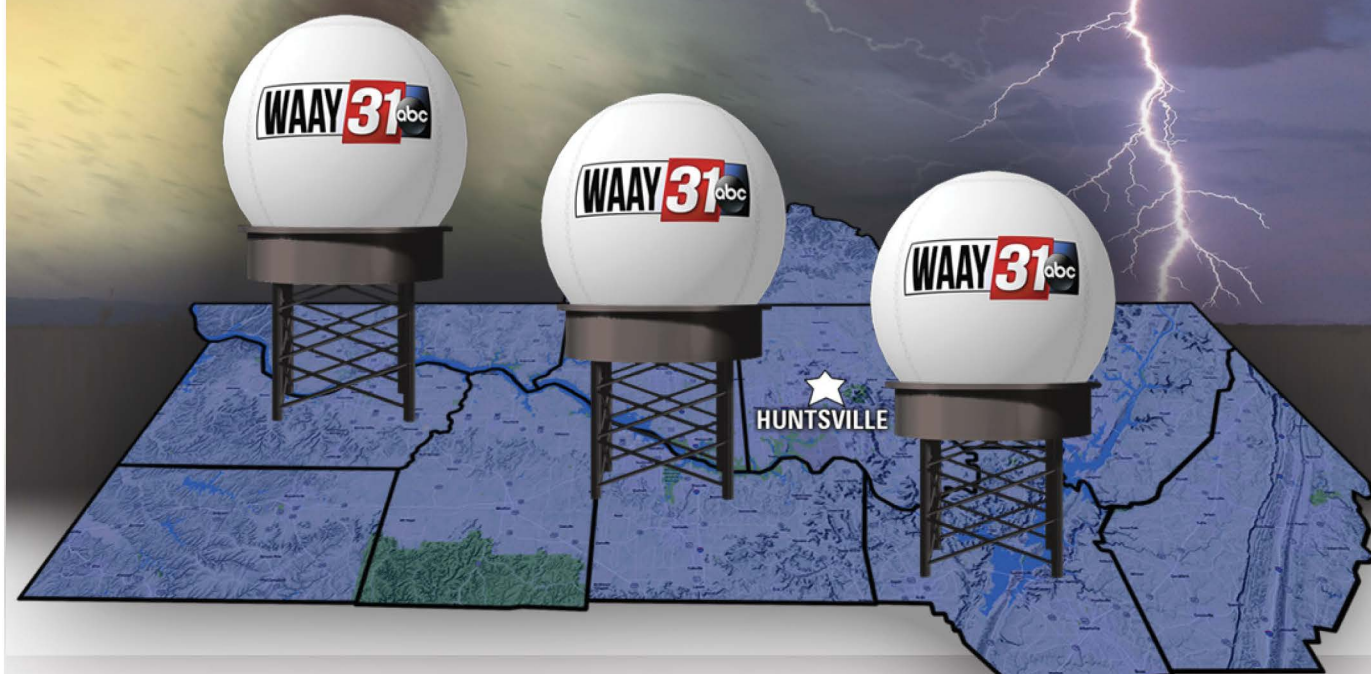


ORDER ONLINE FOR
**CURBSIDE
PICKUP**
or
DELIVERY



◀ ORDER ONLINE AT
WHATABURGER.COM
or USE OUR APP

31 TRIPLE DOPPLER

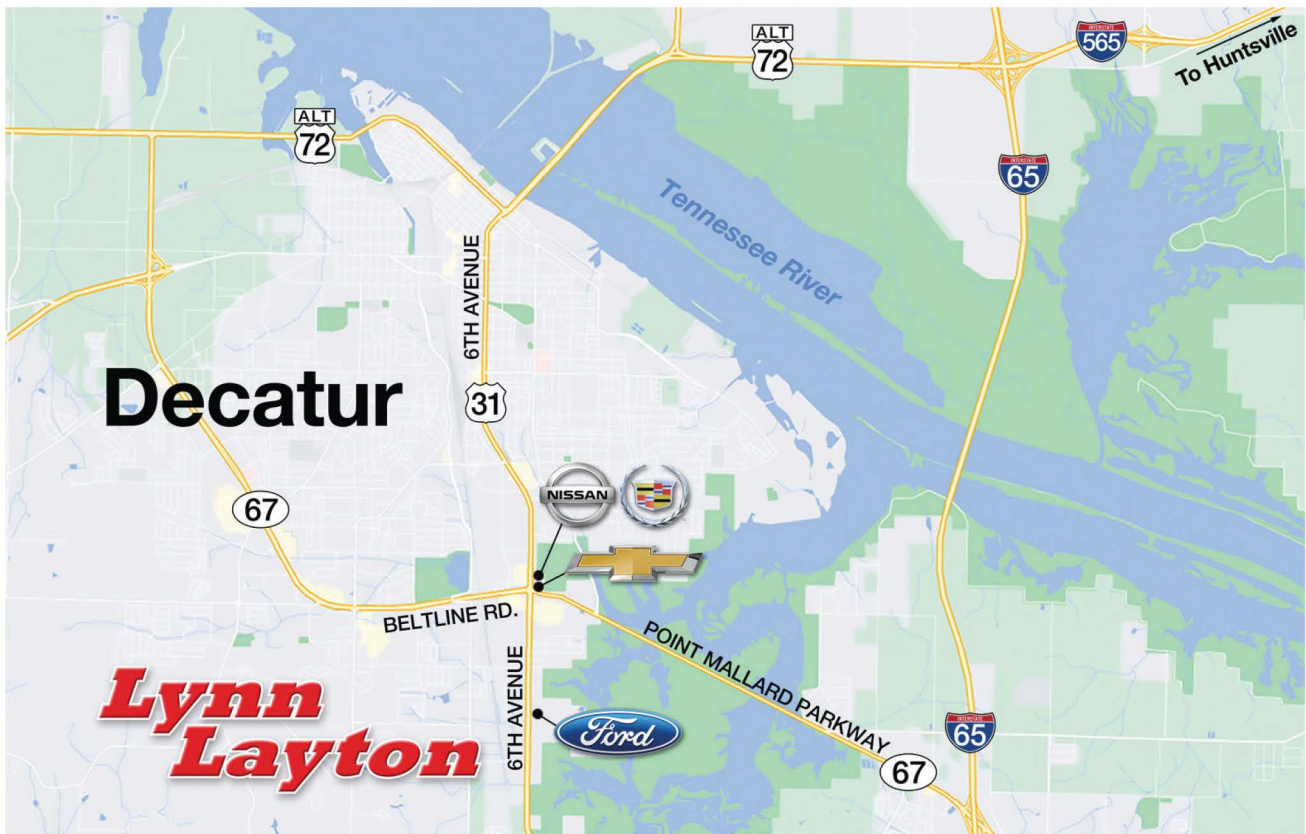


31 Triple Doppler is the nation's largest privately owned radar network. Our three radars in Muscle Shoals, Decatur, and Guntersville have been strategically positioned to provide the most accurate and real-time radar data to all of North Alabama. This faster and clearer radar data allows our team of meteorologists to give your family a 3 to 5 minute faster warning than any other radar during severe weather.

WAAY 31 STORMTRACKER

POWERED BY

Lynn Layton



Chevrolet - 2416 US Hwy. 31 - (256) 274-6493

Cadillac - 2402 US Hwy. 31 - (256) 274-6477

Nissan - 2402 US Hwy. 31 - (256) 353-8150

Ford - 3300 6th Avenue - (256) 350-2120

WHATABURGER.

ORDER ONLINE FOR
**CURBSIDE
PICKUP**
or **DELIVERY**



◀ ORDER ONLINE AT
WHATABURGER.COM
or USE OUR APP