

Tornadoes

What is a tornado?

A tornado is a huge spinning tower of air that spins at over 300 miles an hour. They can last from only a few minutes to 2-3 hours.



How do they form?

Tornadoes are often connected to giant thunderstorms known as 'super cells'. As storms are caused by the mix of hot and cold air, you get the hot air trying to rise upwards and the cold air sinking.

The warm air then starts to rotate and spin. This causes a funnel to slowly descend until it hits the ground.

Where do tornadoes occur?

Tornadoes occur almost everywhere in the world. They can happen any day, at any time. America has more tornadoes than any other country. They mainly occur in Central America. More specifically 'Tornado Alley'.

What is Tornado Alley?

Tornado Alley is a large flat piece of land that is in the middle of Central America. The reason so many tornadoes occur is because of the surrounding areas.

Tornado alley is surrounded by the Rocky Mountains. As air rises over the mountains it cools down. As soon as it hits tornado alley it begins to heat rapidly. This is what causes tornadoes.



The yellow is Tornado Alley

How do tornadoes end?

Tornadoes are powered by warm air. As soon as this air cools down the tornado will lose strength and slowly start to die. Thus the amount of time the tornado lasts depends on how slowly the air cools down. If the air cools fast the tornado dies fast, if the air cools slow the tornado dies slow.

If a tornado is connected to a giant mesocyclone it may form a new tornado as another one dies. It may also form multiple smaller tornadoes inside the storm. These usually die quickly.

How do we measure tornadoes?

We measure tornadoes using a scale called the 'Enhanced Fujita Scale'. This measures the amount of damage that occurred after the tornado and allows a rough guess at the wind speed of the tornado.

ORIGINAL FUJITA SCALE		ENHANCED FUJITA SCALE	
F5	261-318 mph	EF5	+200 mph
F4	207-260 mph	EF4	166-200 mph
F3	158-206 mph	EF3	136-165 mph
F2	113-157 mph	EF2	111-135 mph
F1	73-112 mph	EF1	86-110 mph
F0	<73 mph	EF0	65-85 mph

Fujita scale next to the Enhanced Fujita scale

Level	Wind Speed	Possible Damage
F0	40 - 72 mph	Light damage: Tears branches from trees; rips shallow-rooted trees from the ground; can damage sign-posts, traffic signals and chimneys
F1	73 - 112 mph	Moderate damage: Roofing materials and vinyl siding can be displaced; mobile homes are highly vulnerable and can easily be knocked from the foundation or toppled; motorists can be sent careening off road and possibly flipped over
F2	113 - 157 mph	Considerable damage: Well established trees are easily uprooted; mobile homes are demolished; entire roofs can be ripped off houses; train cars and trucking hauls are knocked over; small objects become dangerous missiles
F3	158 - 206 mph	Severe damage: Forests are destroyed as a majority of trees are ripped from the ground; entire trains are derailed and knocked over; walls and roofs are torn from houses
F4	207 - 260 mph	Devastating damage: Houses and other small structures can be razed entirely; automobiles are propelled through the air.
F5	261 - 318 mph	Incredible damage: Cars become projectiles as they are hurled through the air; entire houses are completely destroyed after being ripped from the foundation and sent tumbling into the distance; steel-reinforced concrete structures can be seriously damaged.

Source: NOAA

Damage a segment table that is used

What should you do in a Tornado?

If you ever hear that a tornado warning has been issued you should immediately seek underground shelter like a basement. If there is no nearby underground areas stay in your home close all windows and doors and hide in a doorway or under a bed.

If you are out hiking or camping look for a cave or a dugout area. Worst case scenario hide in a ditch.

If you are on the road get out of your car and head for a basement. If you are no were near any towns or houses abandon your vehicle and lie on your stomach in a ditch.

If you live in tornado prone areas you should always have a bag packed with a weeks worth of supplies to last each member of the family. Even if you don't live in tornado prone area it's still a good idea to have at least 3 days supplies ready. In case of any other disasters that may occur.

Bibliography

<http://www.weatherwizkids.com/weather-tornado.htm>

<http://www.nssl.noaa.gov/education/svrwx101/tornadoes/>

<http://www.australiasevereweather.com/tornado.htm>

<http://www.popularmechanics.com/science/environment/natural-disasters/4219866>

http://library.thinkquest.org/26568/tri-state_tornado.htm

<http://www.history.com/this-day-in-history/the-tri-state-tornado>

<http://www.universetoday.com/75695/how-do-tornadoes-form/>

<http://www.eo.ucar.edu/kids/dangerwx/tornado3.htm>

<http://www.theweatherprediction.com/habyhints2/417/>

http://www.wunderground.com/resources/severe/tornado_regions.asp

http://www.weather.com/outlook/weather-news/news/articles/what-where-is-tornado-alley-forbes_2011-04-14

<http://www.msichicago.org/whats-here/omnimax-3d-theater/tornado-alley/>