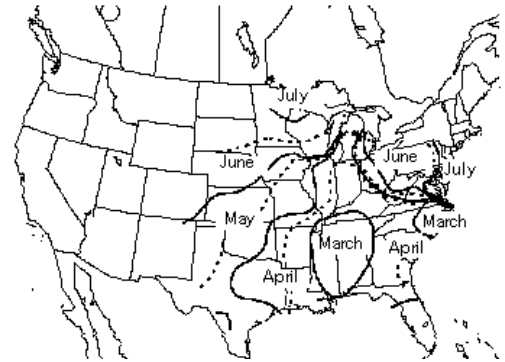




### TIME FOR TORNADES?

The frequency of tornadoes in the United States is closely tied with the development of warm conditions. Although tornadoes can occur any time of year, the winter months are typically the least active. In 2007, 87 U.S. tornadoes (three were killer tornadoes) occurred in February, while 214 (10 were killer tornadoes) occurred in March.<sup>1</sup>

There is no official national tornado season. However, there are times throughout the year when each region of the U.S. has the most tornadic potential. The bulk of late winter and early spring tornadoes usually occur in the lower Southeast and South Central regions. The Gulf States, such as Mississippi and Louisiana, are most active from February to April. Tornadic activity tends to move further north into states such as Kansas, Nebraska, and Tennessee in late spring. Tornado Alley is most active in spring to early summer. The northern plains, the Midwest, and Ohio Valley regions have tornadic potential from mid-spring to late summer, with their strongest tornadoes often occurring in early summer.<sup>4</sup> The pattern shifts southward again in fall. Visit <http://www.nssl.noaa.gov/hazard/tanim/torw8099.html> for an animated graphic of U.S. tornado probability through the calendar year.<sup>3</sup>



*Progression of maximum threat of significant tornado during the year. Date based on mean of 75-year sample. Solid lines indicate first day of month, dashed lines 16th day of month. NOAA*

***The strong tornadoes that occurred in the South and Midwest on February 5, 2008, hit about one month earlier than their typical season would predict, and were among the deadliest ever in the U.S.***

### IN PREPARATION

If you live in a tornado-prone area, be sure to know your community's warning signal and readiness plan, and discuss a disaster plan with your family.<sup>4</sup>

- Prepare a disaster supply kit.
- Pick a safe room at home – a basement, a ground-level room with no windows or doors, or a ground-level shower or closet — to go in if a tornado occurs. Your safe room should be on the lowest floor possible, and should put as many walls as possible between you and the tornado.
- Consider reinforcing your safe room to protect it from damaging winds. For tips on creating a “wind safe” room, visit <http://www.fema.gov/mit/saferoom/>.
- In a tall office building, chose a safe room that is in a hallway in the center of the building or in the stairwell.
- If you don't already have one, encourage your mobile home or apartment community to build a designated tornado shelter.

### THUNDERSTORMS: TEMPTATION FOR TORNADES

While only about 10 percent of the 100,000 thunderstorms occurring in the U.S. each year are classified as severe, it is important to be prepared for the heavy rains, high winds, and hail that can be associated with severe thunderstorms. Straight-line winds and downbursts that accompany some thunderstorms can result in winds of 100 to 150 miles per hour, which are strong enough to flip cars and trucks, and can do the same amount of damage as most tornadoes.<sup>5</sup>

- If a thunderstorm is imminent, secure or bring outdoor items inside that may be damaged or become dangerous if they blow away - children's toys, gardening tools, lawn furniture, firewood, and other items.
- If you keep animals on your property, make sure that corrals, pastures, and shelters are protected, and try to bring livestock and horses into a barn. Bring pets inside, close doors to your home securely, and draw blinds and shades over windows to protect yourself in the event that glass breaks.



With powerful winds, large hail, blinding rain, and the threat of tornadoes, severe thunderstorms should be considered hazards to the public's health and they should know how to prepare appropriately. Also, it is important for the public to understand that mesoscale thunderstorms contain the building blocks for tornadoes. Since there is uncertainty in tornado forecasting, and tornadoes can occur without warning, there are warning signs for the public to watch for, should they miss official warning signals.<sup>6</sup>

## TORNADO WARNING SIGNS

- Strong, persistent rotation in the cloud base, or a funnel cloud.
- Whirling dust or debris on the ground under a cloud base – tornadoes sometimes have no funnel!
- Hail or heavy rain followed by either dead calm or a fast, intense wind shift. Many tornadoes are wrapped in heavy precipitation and can't be seen.
- Day – Dark, greenish clouds.
- Day or night – A wall cloud, or isolated lowering of the base of a tornado that may or may not be rotating.
- Day or night – Loud, continuous roar or rumble that lasts longer than a few seconds, unlike thunder.
- Night – Small, bright, blue-green to white flashes at ground level near a thunderstorm (as opposed to silvery lightning up in the clouds). These mean power lines are being snapped by very strong wind – possibly a tornado.
- Night– *Persistent* lowering from the cloud base, illuminated or silhouetted by lightning, especially if it is on the ground or there is a blue-green-white power flash underneath.

## WHICH IS WHICH? WATCHES AND WARNINGS

It is important that the public understand the difference between a tornado *watch* and *warning*, though safety measures should be enacted for both.<sup>7,8</sup>

A **tornado *watch*** indicates tornadoes or severe weather are possible within a certain area, but may not be looming.

- Be on guard and prepare to go to shelter if a tornado should occur or a warning is issued. Pay close attention to local radio and TV stations, listen to a NOAA Weather Radio, and alert family and friends.

A **tornado *warning*** means that a tornado has been spotted, or that Doppler radar indicates a thunderstorm circulation which can spawn a tornado.

- Listen to a battery-powered NOAA Weather Radio or local TV or radio station.
- If you are inside, go to your designated safe room; take your pets with you if you can. Get under a sturdy piece of furniture, such as a heavy table, and hold onto it with one hand. Should tornado wind enter the room, use your other hand to protect your head and neck from flying objects. Stay away from windows; opening windows actually allows damaging winds to enter your home; leaving windows closed does not cause the room to explode due to changing air pressure.
- If you are outside in a vehicle or in a mobile home, go immediately to the basement of a nearby sturdy building or to your community's tornado shelter. If there is no building nearby, get out of the vehicle or mobile home, far away from roads and possible debris, and lie flat in a low-lying spot, using your hands to protect your head and neck. Avoid sheltering in places with wide-span roofs, such as shopping malls or auditoriums.

## CLEANING UP<sup>9</sup>

Violent tornadoes comprise only two percent of all tornadoes, but are responsible for about 70 percent of tornado-related deaths. Once the storms are over, home and business owners face additional health and safety risks as they assess damage to structures and begin clean-up activities. Keep these tips in mind to stay safe after tornado damage has occurred.



- Listen to your local media or NOAA Weather Radio for updates and information about storm impacts, road closures, and safety instructions.
- Help yourself, then others.
- If you left your home, listen to instructions from local authorities. Only return when they say it is safe.
- Watch for fallen power lines or broken gas lines - don't touch them, and report them to your local utility immediately.
- Stay away from damaged buildings, which may not be safe.
- When performing clean-up activities, wear long sleeves and pants, and sturdy shoes. One of the most common injuries after a disaster is cut feet.
- Check walls, floors, staircases, doors, and windows for damage to make sure your home or building is not in danger of collapsing. Use a flashlight to inspect your home, never use candles.
- Check for fire hazards (damage to electrical systems, spilled flammable liquids) and gas leaks.

Learn more about tornadoes, preparedness, and clean-up in the National Disaster Education Coalition's "Talking About Disaster" Guide: <http://www.redcross.org/images/pdfs/code/tornadoes.pdf>.

Learn more about disaster preparedness and services from your local Red Cross website: <http://www.redcross.org/where/chapts.asp>.

- 
- <sup>1</sup> National Weather Service Storm Prediction Center, 2008. "Monthly Tornado Statistics." <http://www.spc.noaa.gov/climo/torn/monthlytornstats.html>.
- <sup>2</sup> National Climatic Data Center, 2006. "Tornado Climatology." <http://www.ncdc.noaa.gov/oa/climate/severeweather/tornadoes.html#timing>. NOAA National Severe Storms Laboratory. "Tornado Climatology." [http://www.nssl.noaa.gov/primer/tornado/tor\\_climatology.html#](http://www.nssl.noaa.gov/primer/tornado/tor_climatology.html#).
- <sup>3</sup> NOAA National Severe Storms Laboratory. "Severe Thunderstorms Climatology." <http://www.nssl.noaa.gov/hazard/>.
- <sup>4</sup> National Disaster Education Coalition, Washington, DC. 2004. "Talking About Disaster: Guide for Standard Messages." [www.disastereducation.org](http://www.disastereducation.org)
- <sup>5</sup> National Disaster Education Coalition, Washington, DC. 2004. "Talking About Disaster: Guide for Standard Messages." [www.disastereducation.org](http://www.disastereducation.org).
- <sup>6</sup> Edwards, Roger. National Weather Service Storm Prediction Center "Tornado Safety." NOAA Storm Prediction Center; Norman, Oklahoma. <http://www.spc.noaa.gov/faq/tornado/safety.html>.
- <sup>7</sup> Edwards, Roger. National Weather Service Storm Prediction Center. "Tornado FAQ." <http://www.spc.noaa.gov/faq/tornado/#mesocyclone1>.
- <sup>8</sup> National Disaster Education Coalition, Washington, DC. 2004. "Talking About Disaster: Guide for Standard Messages." [www.disastereducation.org](http://www.disastereducation.org)
- <sup>9</sup> National Disaster Education Coalition, Washington, DC. 2004. "Talking About Disaster: Guide for Standard Messages." [www.disastereducation.org](http://www.disastereducation.org).