



Severe Weather And Safety

Severe Thunderstorms



Thunderstorms are a common occurrence each spring and summer across the Midwest and Iowa is not immune. Each year, Iowa sees hundreds of severe and non-severe thunderstorms. Thunderstorms can be extremely dangerous storms which may bring deadly tornadoes and lightning, damaging high winds and hail and can lead to flash flooding.

The National Weather Service issues severe thunderstorm warnings for thunderstorms that are producing, or are capable of producing:

- ⚡ Winds of at least 58 mph.
- ⚡ Hail at least 1 inch in diameter.

Oftentimes, severe thunderstorms may be much stronger than the minimum criteria.

WHAT TO LISTEN FOR:

Severe Thunderstorm Watch:

National Weather Service meteorologists have determined that severe thunderstorms are likely to occur in your area. Watch the sky and stay tuned for warnings that may be issued.

Severe Thunderstorm Warning:

National Weather Service meteorologists have determined that a severe thunderstorm is occurring or likely to occur. Warnings indicate imminent danger to life and property to those in the path of the storm.



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THUNDERSTORM DANGERS

LIGHTNING

- ⚡ Lightning causes an average of between 55 and 60 fatalities each year.
- ⚡ Lightning can strike as far as 10 miles away from an area where it is raining. That's about the distance you can hear thunder.
- ⚡ The energy from one lightning flash could light a 100-watt light bulb for more than 3 months.
- ⚡ Many fires in the western United States and Alaska are started by lightning.
- ⚡ The channel of air through which lightning passes can be heated to 50,000°F which is hotter than the surface of the sun.
- ⚡ The rapid heating and cooling of the air near the lightning channel causes a shock wave that results in thunder.



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MYTH: People struck by lightning should not be touched because they carry an electrical charge.

FACT: Lightning-strike victims carry no electrical charge and should be attended to immediately. Call for help and begin CPR immediately if the person is unresponsive and not breathing. Contact your local American Red Cross chapter for information on CPR and first aid classes.

Remember: When Thunder Roars, Go Indoors!

STRAIGHT-LINE WINDS

- ⚡ Straight-line winds are responsible for most thunderstorm wind damage.
- ⚡ Straight-line winds can exceed 125 mph, which can be as strong as a Category 3 hurricane.
- ⚡ Straight-line winds can cause damage equivalent to an EF2 tornado.



A mobile home was rolled off its foundation due to straight-line winds associated with a severe thunderstorm in Alabama.

DID YOU KNOW?

1,800 thunderstorms occur at any moment around the world. That's 16 million storms a year!



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THUNDERSTORM DANGERS

LARGE HAIL

- ⚡ Hail causes more than \$1 billion in damage to property and crops each year.
- ⚡ Large hail stones fall at speeds faster than 100 mph.
- ⚡ The largest hail stone to fall in the United States was 8 inches wide and weighed nearly 2 pounds. It fell in Vivian, SD on July 23, 2010.



Large hail stone from Vivian, SD. July 2010

LARGE HAIL IN IOWA 2009



Hail damage in Eldora, IA.

On August 9, 2009 a large, long-lived severe thunderstorm tracked across Iowa. One of the hardest hit areas was Hardin County, with the town of Eldora receiving significant damage due to large hail and strong winds. Winds topped 100 mph and baseball sized hail fell with hail measuring between 2-3 inches. Damage in the town of



Hail damage in Eldora, IA.

Eldora from the thunderstorm was expected to be more costly than the damage done in the town of Parkersburg, Iowa by the EF5 tornado which struck there in 2008. There were 22 reports of injuries in Hardin County, 11 were serious enough for people to be taken to hospital.

In addition, a 150 square mile area of crops in Hardin County was also damaged. Total crop losses were reported on 45,000 acres, with 60% or greater loss on another 55,000 acres. Hail damage from Otho to Callender and surrounding areas in Webster County was described as the worst seen in 20 years. Estimates of crop damage were over \$175,000,000. Iowa Governor Chet Culver declared Hardin and Webster Counties state disaster areas shortly after the storm.



Crop damage due to hail in Webster County Iowa.

Source: NCDC



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SEVERE THUNDERSTORM SAFETY

What You Can Do!

BEFORE THE STORM:

- ⚡ Know the county in which you live and the names of nearby major cities.
- ⚡ Check the weather forecast before leaving to be outdoors for extended periods.
- ⚡ Watch for signs of approaching storms.
- ⚡ Have a NOAA Weather Radio with a warning alarm tone and battery back-up to receive warnings.
- ⚡ Postpone outdoor activities if thunderstorms are imminent. This is your best way to avoid being caught in a dangerous situation.
- ⚡ Check on those who have trouble taking shelter if severe weather threatens.

WHEN THUNDERSTORMS APPROACH:

- ⚡ Move to a sturdy building or car. Do not take shelter in small sheds, under isolated trees, or in convertible automobiles.
- ⚡ If lightning is occurring and a sturdy shelter is not available, get inside a hard top automobile and keep the windows up.
- ⚡ Get out of boats and away from water.
- ⚡ Telephone lines and metal pipes can conduct electricity. Unplug appliances not necessary for obtaining weather information. Avoid using the telephone or any electrical appliances.
- ⚡ Do not take a bath or shower.

IF CAUGHT OUTDOORS AND NO SHELTER IS NEARBY:

- ⚡ Find a low spot away from trees, fences and poles. Make sure the place you pick is not subject to flooding.
- ⚡ Stay away from metal conductors such as wires or fences. Metal does not attract lightning, but lightning can travel long distances through it.
- ⚡ If you are boating or swimming, get to land and find shelter immediately!



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