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# HAIL

## Background information

### Hail facts and figures

Hail and hail storms can occur on any continent, although some parts of the world are more prone than others: China, Australia and 'Hail Alley' in the United States (where Nebraska, Colorado and Wyoming meet) all suffer frequent hail storms.

Hailstones form in the top of thunderstorm clouds when supercooled water droplets freeze onto ice crystals. The stone grows because updrafts of air keep it aloft within the storm, but eventually will fall when it moves out of the updraft, or when it is too large to be supported by the updraft.

A large hailstone is defined as being more than 2 centimetres in diameter. Reports of large hailstones cannot always be verified because witnesses usually estimate, rather than measure, the size of the hailstones. Hailstones as large as 12 centimetres in diameter were recorded in Queensland, Australia

in 2015,<sup>1</sup> and the largest-ever recorded hailstone in US history was about the size of a soccer ball at more than 20 centimetres in diameter.<sup>2</sup>

Severe thunderstorms - defined as involving large hailstones, damaging winds, flash flooding or tornadoes, in any combination - like all thunderstorms, have a tendency to develop in the warmer spring and summer months, when there is an increase in energy from the sun, and later in the afternoon, when the temperature of the earth's surface is at its maximum for the day. In most parts of the United States, March is the beginning of the severe thunderstorms season, while in Australia, the season is from September to March.

### Predicting hail storms

Scientists use satellite imaging and weather radar imagery to predict hail storms. Large stones naturally cause the greatest damage, but their downward velocity can be slowed by heavy rain and wind resistance.

Dual Polarization Doppler Radar can estimate the size of hail from the characteristics of energy scattered back to the radar from within a thunderstorm. Although not 100 percent accurate, new radar algorithms are currently being developed and improved upon to increase accuracy.

Severe thunderstorms can be localised and can develop very quickly; their location is therefore difficult to accurately predict. As a result, advance warning of a severe hail storm or thunderstorm may have a lead time of no more than an hour.

### Understand your hail risk

While last-minute preparation of your property is important, it is advisable to consider your hail risk in terms of the likelihood of hail storms in your area. Ask your neighbours about the frequency of hail storms and in Australia, visit [www.bom.gov.au](http://www.bom.gov.au) to learn more about your area's hail history.

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If your area has experienced serious hail storms in the last decade, consider what you could do to limit the damage from future storms. (Refer to the LIU document [Hail action plan](#) for more information.)

## Want more information?

<sup>1</sup> <http://www.abc.net.au/news/2015-03-22/massive-hailstones-out-of-nowhere-pummel-chinchilla-qld/6338756>

<sup>2</sup> [http://disastersafety.org/wp-content/uploads/Hail-Facts\\_IBHS.pdf](http://disastersafety.org/wp-content/uploads/Hail-Facts_IBHS.pdf)

<http://education.nationalgeographic.org/encyclopedia/hail/>

<http://www.bom.gov.au/climate/storms/overview.shtml>