

Severe storms in Canada

Thunderstorms, hail, blizzards, ice storms, high winds and heavy rain can develop quickly and threaten life and property. Severe storms occur in all regions of Canada and in all seasons.

Listen to the local radio or television stations for severe weather warnings and advice. Keep a battery-powered or wind-up radio on hand as electricity frequently fails during severe storms.

Types of storms

Blizzards

- A blizzard, in general, is a winter storm with winds exceeding 40 km/h with visibility reduced by falling or blowing snow to less than a kilometre and lasting for at least three hours.
- Blizzards come in on a wave of cold arctic air, bringing snow, bitter cold, high winds and poor visibility in blowing snow. While these conditions must last for at least three hours to be designated a blizzard, they may last for several days.
- Poor visibility, [low temperatures](#) and high winds combine to create a significant hazard.
- In Canada, blizzards with high winds are most common in the Prairies, eastern Arctic and eastern Ontario.
- Heavy [snowfalls](#) are most common in British Columbia, the Atlantic provinces, southern and eastern Quebec and areas around the Great Lakes.
- Freezing rain can occur pretty much anywhere in the country, but is particularly common in Ontario, Quebec and the Atlantic provinces.

Hail

- Hailstorms occur across Canada, though they are most frequent in Alberta, the southern Prairies and in southern Ontario.
- Hailstorms occur mostly from May to October.
- Parts of the Prairies can expect up to 10 hailstorms a year.
- For farmers whose crops are crushed, and for others whose homes and cars are damaged, a hailstorm can be a financial disaster.
- Some hailstones are the size of peas while others can be as big as grapefruits.

Heavy rain

- [Heavy rainfall](#) can result in flooding. This is particularly true when the ground is still frozen or already saturated from previous storms.
- [Floods](#) may also result, especially if heavy rain coincides with the spring thaw.

Ice storms

- Freezing rain is tough, clings to everything it touches and is more slippery than snow.
- A little freezing rain is dangerous, a lot can be catastrophic.

Lightning

- Lightning occurs when the air becomes charged with electricity during a thunderstorm.
- Bolts of lightning travel at about 40,000 kilometres per second.

Thunderstorms

- Thunderstorms are often accompanied by high winds, hail, lightning, heavy rain and tornadoes.
- Thunderstorms are usually over within an hour, although a series of thunderstorms can last for several hours.

Preparing for severe storms

Stock up on heating fuel and ready-to-eat food, as well as battery-powered or wind-up flashlights and radios – and extra batteries. For a complete list of emergency supplies, go to [emergency kits](#). Also, learn what to have in your [car emergency kit](#).

When a severe storm is on the horizon, the [Meteorological Service of Canada](#) issues [watches](#), [warnings](#) and [advisories](#) through radio and television stations, the [WeatherOffice Website](#), automated telephone information lines and [Environment Canada's Weatheradio](#).

Other tips for preparedness

- If a severe storm is forecast, secure everything that might be blown around or torn loose – indoors and outdoors. Flying objects such as garbage cans and lawn furniture can injure people and damage property.
- Trim dead branches and cut down dead trees to reduce the danger of these falling onto your house during a storm.
- If you are indoors, stay away from windows, doors and fireplaces.
- You may want to go to the sheltered area that you and your family chose for your [emergency plan](#).
- If you are advised by officials to evacuate, do so. Take your [emergency kit](#) with you.
- You can use a cellular telephone during a severe storm, but it's not safe to use a land-line telephone.
- Never go out in a boat during a storm. If you are on the water and you see bad weather approaching, head for shore immediately. Always check the marine forecast before leaving for a day of boating and listen to weather reports during your cruise.
- If you are in a car, stop the car away from trees or power lines that might fall on you). Stay there.
- On a farm, generally, the effects of severe storms on livestock are lessened by moving animals to avoid the storm; mitigating the storm's effect if it cannot be avoided; or sheltering the animals, ensuring they have access to food and water. The approach taken would depend upon the type of disaster anticipated.

What to do before and during...

Blizzards

- If a blizzard or heavy blowing snow is forecast, you may want to string a lifeline between your house and any outbuildings to which you may have to go during the storm.
- When a winter storm hits, stay indoors. If you must go outside, dress for the weather. Outer clothing should be tightly woven and water-repellent. The jacket should have a hood. Wear mittens – they are warmer than gloves – and a hat, as most body heat is lost through the head.
- In wide-open areas, visibility can be virtually zero during heavy blowing snow or a blizzard. You can easily lose your way. If a blizzard strikes, do not try to walk to another building unless there is a rope to guide you or something you can follow.
- If you must travel during a winter storm, do so during the day and let someone know your route and arrival time.
- If your car gets stuck in a blizzard or snowstorm, remain calm and stay in your car. Allow fresh air in your car by opening the window slightly on the sheltered side – away from the wind. You can run the car engine about 10 minutes every half-hour if the exhaust system is working well. Beware of exhaust fumes and check the exhaust pipe periodically to make sure it is not blocked with snow. Remember: you can't smell potentially fatal carbon monoxide fumes.
- To keep your hands and feet warm, exercise them periodically. In general, it is a good idea to keep moving to avoid falling asleep. If you do try to shovel the snow from around your car, avoid overexerting yourself.
- Overexertion in the bitter cold can cause death as a result of sweating or a heart attack.
- Keep watch for traffic or searchers.
- If you live on a farm, shelter animals. Generally, if the structure is sound, the animals should be placed indoors. Once they are inside, secure all openings to the outside. The sheltering should be ordered and completed before similar action is taken for humans. Water supplies should be checked for freezing. Many animals have died of thirst during the winter, even with abundant water sources, because they could not drink the water as it was frozen solid.

Hail

- If hail is forecast, you may want to protect your vehicle by putting it in the garage.
- Take cover when hail begins to fall. Do not go out to cover plants, cars or garden furniture or to rescue animals. Hail comes down at great speed, especially when accompanied by high winds. Although no one in Canada has ever been killed by hail, people have been seriously injured by it.
- When a hailstorm hits, stay indoors, and keep yourself and your pets away from windows, glass doors and skylights which can shatter if hit by hailstones. Avoid using the telephone during a storm, and do not touch metal objects like stoves, radiators, metal pipes, and sinks.
- When a hailstorm hits, find shelter and avoid underpasses or any low lying areas that may flood.

Heavy Rain

- Consider checking the drainage around the house to reduce the possibility of basement **flooding** after a heavy rain.

Ice storms

- Ice from freezing rain accumulates on branches, power lines and buildings. If you must go outside when a significant amount of ice has accumulated, pay attention to branches or wires that could break due to the weight of the ice and fall on you. Ice sheets could also do the same.
- Never touch power lines. A hanging power line could be charged (live) and you would run the risk of electrocution. Remember also that ice, branches or power lines can continue to break and fall for several hours after the end of the precipitation.
- When freezing rain is forecast, avoid driving. Even a small amount of freezing rain can make roads extremely slippery. Wait several hours after freezing rain ends so that road maintenance crews have enough time to spread sand or salt on icy roads.
- Rapid onsets of freezing rain combined with the risks of blizzards increase the chances for extreme hypothermia. If you live on a farm, move livestock promptly to shelter where feed is available. Forage is often temporarily inaccessible during and immediately after ice storms. Animal reactions to ice storms are similar to that of blizzards.

Lightning

- Always take shelter during lightning.
- To estimate how far away the lightning is, count the seconds between the flash of lightning and the thunderclap. Each second is about 300 metres. If you count fewer than 30 seconds look for shelter. If you count fewer than 5 seconds take shelter immediately.
- Wait 30 minutes after the last lightning strike in a severe storm before venturing outside again.
- If you are caught in the open, do not lie flat. Crouch down with your feet close together and your head down (the "leap-frog" position). By minimizing your contact with the ground, you reduce the risk of being electrocuted by a ground charge.
- Do not ride bicycles, motorcycles, tractors, golf carts or use metal shovels or golf clubs because they may conduct electricity.

Thunderstorms

- Before a severe thunderstorm, unplug radios and televisions – listen for weather updates on your battery-powered radio.
- During thunderstorms, you should also stay away from items that conduct electricity, such as telephones, appliances, sinks, bathtubs, radiators and metal pipes.
- Do not go out to rescue the laundry on the clothesline because it may conduct electricity.
- If you are outdoors when a thunderstorm hits, take shelter immediately, preferably in a building but, failing this, in a depressed area such as a ditch, culvert or cave. Never go under a tree.