

# Safe Work Practice

## SWP #3

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### Lightning Safety during Field Work

<b>Hazards Identified</b>	Lightning strike to person/equipment, electrocution and burns
<b>Hazard-Specific Personal Protective Equipment</b>	None specified
<b>Hazard-Specific Training</b>	Familiarity with this safe work practice

### Safe Work Practice

Every year in Canada, lightning can cause as many as 10 deaths and 164 injuries. Direct strikes are responsible for only 5% of lightning-related deaths and injuries. Two other types of hazardous phenomena are caused by lightning. Ground current and side flash account for 60 to 80% of lightning-related injuries and deaths. A ground current is set up when lightning hits the ground, spreads out and sends a current through a victim. Side flash occurs when lightning hits a tall object, travels partly down the object and then jumps to a nearby victim.

- **Check the weather forecast.** If thunderstorms are forecast, avoid being outdoors at that time or make an alternate plan. Identify safe places and determine how long it will take you to reach them. Environment Canada maintains a website that will show where lightning is most likely to strike in the next 10 minutes in Atlantic Canada. [https://www.weather.gc.ca/lightning/index\\_e.html?id=ATL](https://www.weather.gc.ca/lightning/index_e.html?id=ATL) The website also contains information for other Canadian provinces.
- Information on lightning, for field work to be conducted in the US and other countries, may be found on the following websites:  
<https://map.blitzortung.org/#1.99/51.79/-9.35>  
<https://www.iweather.net.com/lightning/latest-lightning-strikes-on-google-maps>
- **Watch the skies for developing thunderstorms and listen for thunder.** If you can hear thunder, you are in danger of being hit by lightning. Quickly get to a **safe place**. More people are struck before and after a thunderstorm than during one.
- **A safe place** is a fully enclosed building with wiring and plumbing. Sheds, picnic shelters, tents or covered porches do **NOT** protect you from lightning. If a sturdy building is not close by, get into a metal-roofed vehicle and close all the windows. **Do NOT** lie on concrete floors during a thunderstorm. Also, avoid leaning on concrete walls. Lightning can travel through any metal wires or bars in concrete walls or flooring.
- **If you are in your vehicle** during lightning, do not park under tall objects that could topple, and do not get out if there are downed power lines nearby.

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- **If you are caught outside**, don't stand near tall objects (anything taller than you) or anything made of metal, and avoid open water or open areas, such as fields. Crouch down in a ball-like position (feet and knees together) with your head tucked and hands over your ears so that you are down low with minimal contact with the ground. Never lie flat on the ground. **In a forest**, seek shelter in a low-lying area under a thick growth of small trees or bushes. If you are in the mountains, stay away from ridges, summits, single trees, power lines, and ski lifts.
- Large caves and valleys are **protective**. Small caves, overhangs, and wet stream beds are likely to be more dangerous than open areas because water conducts electricity and electricity can jump gaps between rocks.
- **Separate** from other members of the group to reduce the number of people injured by ground currents and side flashes between persons.
- Even when indoors, **do not handle** electrical conductors or electrical equipment. Do not use the telephone. Stay out of the shower and away from sinks. Lightning can pass through landlines, metal pipes and faucets. Cell phones may be used safely.
- **Avoid or do not carry metal**. Avoid metal objects. You are more likely to be burned if you are in contact with metal when you are struck by lightning. Do not carry any metal objects if possible (e.g., skis, ski-poles, antennas, ice-axes). Metal does not attract electricity, but it is a good conductor. Your chances of a direct hit are higher when you are carrying a conductor above shoulder level. If you have metal objects with you during lightning strikes, place them somewhere out of reach.
- **If on water**, get to shore as quickly as possible. The high waves and strong gusts of wind associated with sudden fast-moving storms can make it difficult for boaters to reach shore safely. Lightning that hits water travels well beyond its point of contact. Small boats without a cabin provide less protection than boats with enclosed cabins. Boats with cabins offer a safer environment, but it's still not ideal.
- **Do not** resume research activities until at least 30 minutes after the last rumble of thunder is heard.

### First aid for lightning victims

- **Always make sure** you are safe from lightning strike before attempting to help others.
- **Lightning victims do not carry an electrical charge and can be safely handled.**
- **Call for help.** Victims may be suffering from burns or shock and should receive medical attention immediately. Call 911.
- **Give first aid.** If breathing has stopped, administer cardio-pulmonary resuscitation (CPR). Use an automatic external defibrillator if one is available.

#### Regulations, Standards and References

Environment Canada <https://www.canada.ca/en/environment-climate-change/services/lightning.html>