

Fact Sheet: Thunder and Lightning

Thunderstorms

Thunderstorms are rain showers accompanied by lightning and thunder. Thunder is caused by the heat in lightning leading the surrounding air to increase in pressure and explode outwards.



Thunder can be used to estimate how far away lightning is.

- Count the number of seconds between the flash of lightning and the sound of thunder. Divide by 5 to get the distance in miles.

The life cycle of a thunderstorm has three stages.

- **Developing Stage:** A cumulus cloud is pushed upward by a rising column of air.
- **Mature Stage:** The updraft continues to feed the storm and rain begins. This is the most likely stage for hail, heavy rain, lightning, and/or strong wind.

- **Dissipating Stage:** The updraft is overcome by the downdraft.

Moisture, instability and lift are needed to generate thunderstorms. While thunderstorms are not as common in the Western areas of the United States, dry thunderstorms and dry lightning are becoming more common.

Dry Thunderstorms

In a dry thunderstorm, precipitation evaporates before making it to the ground. This leads to the appearance there is no ground rainfall accompanying the thunderstorm.

A thunderstorm may be referred to as a dry thunderstorm if there is ground rainfall, but not an amount that will wet fuels enough to lessen the likelihood of ignition.

Lightning

Lightning is the occurrence of a natural discharge of electricity in the atmosphere between clouds, the air, or the ground.

Lightning strikes occur more frequently with warmer temperatures.

- For each degree Celsius the global average air temperature increases, the number of lightning strikes is expected to increase by about 12%.

Dry Lightning

Dry lightning is becoming more common in Central and Northern California. Dry lightning is lightning that occurs with less than 2.5 mm of rainfall. This is a major source of wildfire ignition.

Lightning Strikes In the event a person being struck by lightning, the person struck by lightning **does not** carry an electrical charge and should be given immediate medical attention.

1. **Call for Help:** Immediately call 911, noting how many people were struck and where. Avoid using a landline phone during a storm.
2. **Assess the Situation:** Determine if it is safe to move the victim.
3. **Respond:** Check the victim for a heartbeat and to see if they are breathing.
4. **Resuscitate:** If no pulse is found, begin CPR immediately.

Lightning-Caused Fires

Energy from a lightning strike briefly heats the air to around 50,000 degrees Fahrenheit, making a fire much more likely to start.

- In 2020, there were over 5,000 lightning fires in the United States.
- Lightning related fires are more common in June through August, typically occurring in the late afternoon and evening.

Lightning-caused fires are more common in Northern California.

- In 2020, 430 lightning-caused fires occurred in Northern California, burning 1,549,012 acres.
- Southern California had 124 lightning-caused fires in 2020, burning 216,492 acres.
- About 10 percent of lightning-caused fires in 2020 occurred in California, but over 40% of the acres burned by lightning-caused fires nationally were burned in California.

During a Storm

Avoid Water: Try not to use running water.

Go Indoors: When lightning becomes a threat, one should seek shelter immediately if they are outside.

- If you can hear thunder, there is a danger of being struck by lightning.

Stay Inside: Outside activities should also be stopped and not resumed for at least 30 minutes after the storm has occurred.

References

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