

Extreme Weather Events

Extreme weather events have always happened, but the frequency and intensity are changing. Although it's not possible to say if a specific event was caused by global warming, there is strong evidence that a warming planet will make extreme events more frequent and/or intense. It's like playing a card game with extra jokers, by increasing global average temperature, you increase the chance of extreme weather events.

What are some examples of extreme weather events?

Heat waves



Thunderstorms



Wildfires



Snowstorms



Ice storms



Hailstorms



Windstorms



Rainstorms



Flooding

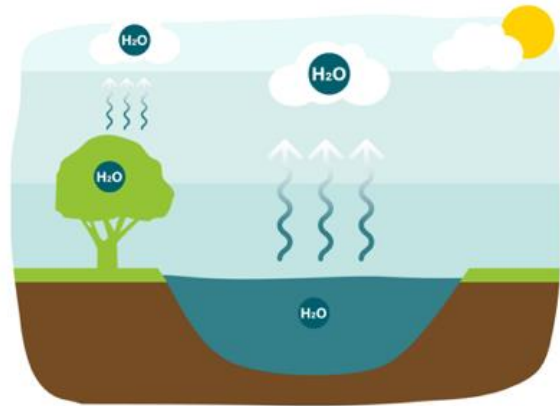


Why can't we directly link extreme weather events to global warming?

Extreme weather events are unusual highs or lows based on the historical records of weather in a particular region. Detecting these trends takes time and is particularly difficult when observational records are rare in certain regions like northern Ontario. Community members, especially Elders, speak of more storms, more rain in the winter, and say that the weather is now more unpredictable. Although scientists can't tie global warming to a specific event, they are getting better at determining whether a warming planet made the event more severe or more likely to happen.

How does global warming make extreme weather events more frequent and/or intense?

Rising temperatures can increase the rate of evapotranspiration, which is the total evaporation of water from soil, plants and water bodies. This can have a direct effect on the frequency and intensity of droughts and make forests and fields more prone to catching fire, plus extend the fire season.



Rising temperatures mean a warmer atmosphere. A warmer atmosphere can hold more water vapour, and water vapour increases the risk of extreme rainfall and snowstorm events.



Rising temperatures change sea-surface temperature which then brings changes in atmospheric circulation and precipitation. This can cause more severe hurricanes and intensify droughts and floods.



Why is this important?

Understanding how global warming impacts extreme weather will help communities and individuals make informed decisions, such as where and how to build, to reduce their vulnerability to climate change. By being prepared for more frequent and intense extreme weather, we can keep our communities safe.

Contact us if you'd like to learn more about extreme weather and global warming.

We can provide access to this report: <https://www.nature.com/articles/nclimate1452>.