

Extreme Event Cards

Blizzards



What is a blizzard?

A blizzard is a severe snowstorm. A blizzard occurs in cold weather and includes falling and blowing snow with winds higher than 35 miles per hour. Blowing snow causes reduced visibility.

What conditions lead to blizzards?

Cold temperatures, snowfall, and wind combine to cause blizzards.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Eric Druxman. NOAA Weather in Focus Photo Contest 2015.

Thunderstorms



What is a thunderstorm?

A thunderstorm is a severe rainstorm. Thunderstorms include thunder and lightning, heavy rain and sometimes hail, high winds or tornadoes.

What conditions lead to thunderstorms?

Thunderstorms happen when moisture in the air forms clouds and rain as warm air rises forming towering cumulonimbus clouds. This sometimes occurs when warm, moist air is forced up over mountains or as heat builds during a hot summer day.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Bob Larson. NOAA Weather in Focus Photo Contest 2015.

Lightning



What is lightning?

Ice crystals within storm clouds collide causing electrical charges to build up. The ground below the cloud becomes oppositely electrically charged and electricity jumps between the cloud and ground as a lightning bolt.

What conditions lead to lightning?

Lightning is usually associated with thunderstorms.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Warren Brandely. NOAA Weather in Focus Photo Contest 2015.

Urban Floods



What is an urban flood?

Urban floods are floods that occur in cities and towns. They can be made worse by surfaces like roads and parking lots that don't allow water to soak in.

What conditions lead to urban floods?

Urban floods occur when water backs up due to heavy rain (rainy weather) or snowmelt (warm temperatures following snowy weather). They are often caused by hurricanes.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Yaakov Wilson. NOAA Weather in Focus Photo Contest 2015.

Hailstorms



What is a hailstorm?

A hailstorm occurs when frozen ice pellets fall from the sky instead of liquid rain or frozen snowflakes. Hail pellets may grow large enough to cause damage.

What conditions lead to hailstorms?

Hailstorms are often associated with severe thunderstorms.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. NOAA Photo Library, NOAA Central Library; OAR/ERL/National Severe Storms Laboratory (NSSL).

Flash Flood



What is a flash flood?

A flash flood is a flood that happens suddenly. Flash floods often occur due to large quantities of water flowing from another location where there was too much water to soak in to the ground, or surfaces didn't allow it to soak in, like deserts.

What conditions lead to flash floods?

Rain storms, thunderstorms, rapid snowmelt, or water trapped behind ice dams that break could all lead to flash floods.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. NOAA/NOAA News, March 14, 2011.

River Floods



What is a river flood?

A river flood happens when there is too much water flowing in a river to stay within its banks. Land on either side of the river may become flooded.

What conditions lead to river floods?

River floods are often caused by snowmelt increasing river flows but can also be caused by rain or river blockages.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Captain Albert E. Theberge, NOAA Corps (ret.).

Hurricanes



What is a hurricane?

A hurricane is a very large swirling storm that forms over the ocean and may cause damage if it reaches shore. Hurricanes include heavy winds and rain, and often lead to flooding.

What conditions lead to hurricanes?

Warm, moist air from the ocean forms clouds and winds that increase in strength as they build and move towards land.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Doug Helton, NOAA, NOS, ORR.

Tornadoes



What is a tornado?

A tornado is a violent rotating column of air extending from a thunderstorm to the ground.

They can destroy large buildings, uproot trees, and throw vehicles hundreds of yards. Tornadoes happen more frequently in America than in any other part of the world. The states with the most tornadoes are called Tornado Alley, but tornadoes have occurred in all 50 states and even in Yellowstone National Park.

What conditions lead to tornadoes?

To make a tornado you need warm, moist air to meet up with cool, dry air. When they meet, they can create changes in wind direction and speed that cause a spinning effect. Most tornadoes form in the afternoon during May and June.

Make your own tornado

You will need

- Water
- A clear plastic bottle with a cap (that won't leak)
- Glitter
- Dish washing liquid

Directions

1. Fill the plastic bottle with water until it is about three quarters full.
2. Add a few drops of dishwashing liquid.
3. Sprinkle in a few pinches of glitter (this will make your tornado easier to see).
4. Put the cap on tightly.
5. Turn the bottle upside down and hold it by the neck. Quickly spin the bottle in a circular motion for a few seconds, stop and look inside to see if you can see a mini tornado forming in the water. You might need to try it a few times before you get it working properly.

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<http://eu.montana.edu/pdf/outreach/msuscizone21.pdf>

Cold Snap



What is a cold snap?

A cold snap is when temperatures drop very low relative to what is normal. A cold snap may or may not include snow. This may also happen quickly or without warning.

What conditions lead to cold snaps?

Cold snaps are often caused by a shift in the jet stream bringing in arctic air.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Ann McHale. NOAA Weather in Focus Photo Contest 2015.

Heat Waves



What is a heat wave?

Heat waves are periods of hotter than normal temperatures.

What conditions lead to heat waves?

Heat waves can be caused by shifts in the jet stream bringing in hotter air than normal. When combined with humidity, heat waves can be very uncomfortable for humans. Dry air and humidity can lead to forest fires.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce.

Drought



What is a drought?

Droughts are periods of very dry weather. They can mean not enough water for plants, causing them to dry out or even die.

What conditions lead to droughts?

Hot weather, heat waves, and long periods with little or no precipitation often lead to droughts.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Tim Benson. NOAA OAR 2014 Photo Contest.

Heavy Downpours



What is a heavy downpour?

When it rains much harder than it usually does, we call it a heavy downpour. Lots of water falling fast can wash away soil or lead to flooding.

What conditions lead to heavy downpours?

Heavy downpours may come as part of thunderstorms or may just be severe rainstorms.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. Jared Rackley. NOAA Weather in Focus Photo Contest 2015.

Dust Storms



What is a dust storm?

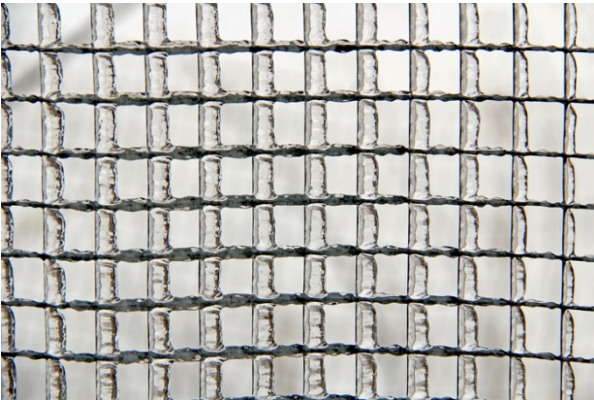
A dust storm is a huge cloud of dust that moves across the landscape engulfing everything in its path.

What conditions lead to dust storms?

Winds in areas where there is loose soil, sand or dust (sometimes made worse by dry weather) can lead to dust storms.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce. NOAA Legacy Photo, ERL WPL.

Ice Storms



What is an ice storm?

Ice storms happen when frozen precipitation, like snow, falls through a layer of air warm enough to melt it, and then enters a colder layer underneath where it refreezes. This is also called freezing rain. Freezing water coats everything as it falls, trapping it inside ice.

What conditions lead to ice storms?

Cold, snowy weather and a layer of warm air sandwiched between two cold layers lead to ice storms. Areas with high humidity where the air is moist experience these most often.

National Oceanic and Atmospheric Administration/Department of Commerce. Tracy Belle. NOAA Weather in Focus Photo Contest 2015.

Wildfire



What is wildfire?

Wildfire is fire that burns out of control through natural areas. Wildfires and wildfire danger can be influenced by weather and climate conditions.

What conditions lead to wildfire?

Drought, hot, dry conditions, and high winds can all lead to wildfire danger and worsen burning fires. Cool temperatures, low winds, and precipitation like rain or snow can help keep wildfires under control and put them out.

Photo: National Interagency Fire Center, Bugwood.org

Coastal Floods



What is a coastal flood?

A coastal flood happens when ocean water floods the nearby land.

What conditions lead to coastal floods?

Hurricanes often cause storm surges which mean the ocean water is pushed toward shore by the strong hurricane winds.

Photo: National Oceanic and Atmospheric Administration/Department of Commerce.