

ENVIRONMENT ISSUES: Natural Disasters

A natural disaster is the effect of a naturally occurring hazard (such as an earthquake), caused by the forces of nature and resulting in severe damage to the environment and surrounding areas, and often loss of life.

Earthquakes, hurricanes, tornados and (erupting) volcanoes are all examples of natural hazards which can have devastating consequences within the communities in which they occur. Although experts (such as meteorologists also known as 'weatherman') can sometimes predict them, natural hazards often come 'unannounced' and as a result can cause severe damage to the area and population classifying them as 'disasters'. (See also fact sheet **3.5 Environment Issues – Natural Disasters and Climate Change** for ages 14-16.)

Hurricane

A hurricane is a very severe tropical thunderstorm with strong winds reaching 74mph or more. The hurricane swirls in a circular motion called a 'cyclone' but has a calm centre called the 'eye'. Hurricane season is usually from May 15th to November 30th every year and as hurricanes can only form over water of 80°F (26.6°C) or warmer, they usually occur across the Atlantic or Pacific Ocean.

Hurricanes form when a storm travels over the water causing the warm air from the storm and the surface temperature of the ocean to rise, creating what is called 'low pressure' on the surface of the water. Winds blowing in different directions cause the storm to start spinning (causing the 'cyclone') and the air begins to rise faster in order to fill the low pressure. As the storm moves across the water, it picks up more moisture and warm air, over hours or days the storm can turn into a full hurricane.

Hurricanes will eventually lose power and stop by themselves.



Hurricane Katrina (2005)

This was one of the worst natural disasters to hit the United States of America striking the coasts of Alabama, Mississippi and Louisiana in the summer of 2005. The hurricane formed over the Bahamas before moving over Florida and travelling along the coast and moving inland. It gained a lot of momentum and power as it moved toward Louisiana, which is where it caused the most amount of damage.

New Orleans (Louisiana) was the worst affected as the city could not handle the floods caused by this intense storm that devastated large portions of the city.

More than 1,800 people were killed by the hurricane and many more are still missing and homeless over five years after the event.

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Earthquake

An earthquake is caused by the movement of rocks called 'tectonic plates' under the Earth's surface. The 'fault line' is the gap between each plate and is effected by the movement, causing pressure to build and a 'shock wave' to be sent out. These plates move naturally over time, but earthquakes can also be triggered by other natural elements such as a volcano erupting, or even by humans, for example the collapsing of a man-made underground mine. Most however, occur naturally.

After a quake has occurred and the plates adjust to their new positions 'after-shocks' can occur which feel like a 'mini' earthquake.

Earthquakes are measured on a 'Richter scale' with zero being a minor tremor (shake) and nine being a giant vibration. Most earthquakes rate as a three on the Richter scale and generally cause very little damage. The area where the quake is the strongest is called the 'epicentre'.



Japan earthquake (2011)

On March 11th 2011 an earthquake measuring nine on the Richter scale occurred off the coast of Japan. The quake tremors reached Japan with a number of after-shocks also occurring. The quake caused parts of the country to move by almost eight feet!

What devastated the country more than the quake were the tsunami waves (giant waves of water that hit the country) caused by it, these have destroyed entire areas of the coastline and islands.

At present around 7,000 people have been killed with thousands more still missing.

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 **ENVIRONMENT ISSUES: Natural Disasters** cont'd**Volcanic eruptions**

Deep below the Earth's surface is hot molten rock called 'magma'. This magma builds up pressure over time and as the Earth spins, cracks can form in the rock ('tectonic') plates below the Earth's crust and travel up to the surface. As the pressure builds, magma, ash and gas can burst through to the surface at a very fast rate (this is called 'lava' and 'volcanic ash'). If these eruptions occur regularly a cone can form on the surface which we would commonly call a 'volcano'.


Volcanoes occur across all of the Earth's surface therefore they can happen underwater (called a 'submarine volcano'); these eruptions sometimes cause new islands to be formed.

A 'supervolcano' is the largest and most dangerous type of volcano as lava, ash and sulphur can be released at huge levels into the atmosphere. There are large volcanoes in many countries including Japan and Russia.

Tornado

Tornados occur when warm and cold air meet causing the air to spin around itself in what is called a 'vortex'. This spinning air can reach speeds of 300mph destroying everything in its path.

They will eventually stop once the air supply of the tornado is fully consumed by itself. The United States of America suffers from a lot of tornados and there is a place in the Mid-West known as 'tornado alley'. Scientists believe this area suffers from tornados due to the different temperature of the winds that meet across this flat area of land.

Did you know?

Tropical storms are identified by names decided before the start of each year by weather scientists. The first storm of the year will have an 'A name' (e.g. Hurricane Andrew) and the next a 'B name' and so on.