## What is Acid Rain?

Acid rain is a result of air pollution. When any type of fuel is burnt, lots of different chemicals are produced. The smoke that comes from a fire or the fumes that come out of a car exhaust don't just contain the sooty grey particles that you can see - they also contains lots of invisible gases that can be even more harmful to our environment.

Power stations, factories and cars all burn fuels and therefore they all produce polluting gases. Some of these gases (especially nitrogen oxides and sulphur dioxide) react with the tiny droplets of water in clouds to form sulphuric and nitric acids. The rain from these clouds then falls as very weak acid - which is why it is known as "acid rain".

How acidic is acid rain?

Acidity is measured using a scale called the pH scale. This scale goes from 0 to 14. 0 is the most acidic and 14 is the most alkaline (opposite of acidic). Something with a pH value of 7, we call neutral, this means that it is neither acidic nor alkaline. Very strong acids will burn if they touch your skin and can even destroy metals. Acid rain is much, much weaker than this, never acidic enough to burn your skin. Rain is always slightly acidic because it mixes with naturally occurring oxides in the air. Unpolluted rain would have a pH value of between 5 and 6. When the air becomes more polluted with nitrogen oxides and sulphur dioxide the acidity can increase to a pH value of 4. Some rain

has even been recorded as being pH2. Vinegar has a pH value of 2.2 and lemon juice has a value of pH2.3. Even the strongest recorded acid rain is only about as acidic as lemon juice or vinegar and we know that these don't harm us - so why do we worry about acid rain?
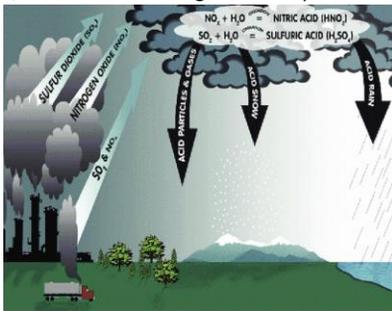
Causes of Acid Rain
Both natural and man-made sources are known to play a role in the formation of acid rain. But, it is mainly caused by combustion of fossil fuels which results in emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x).
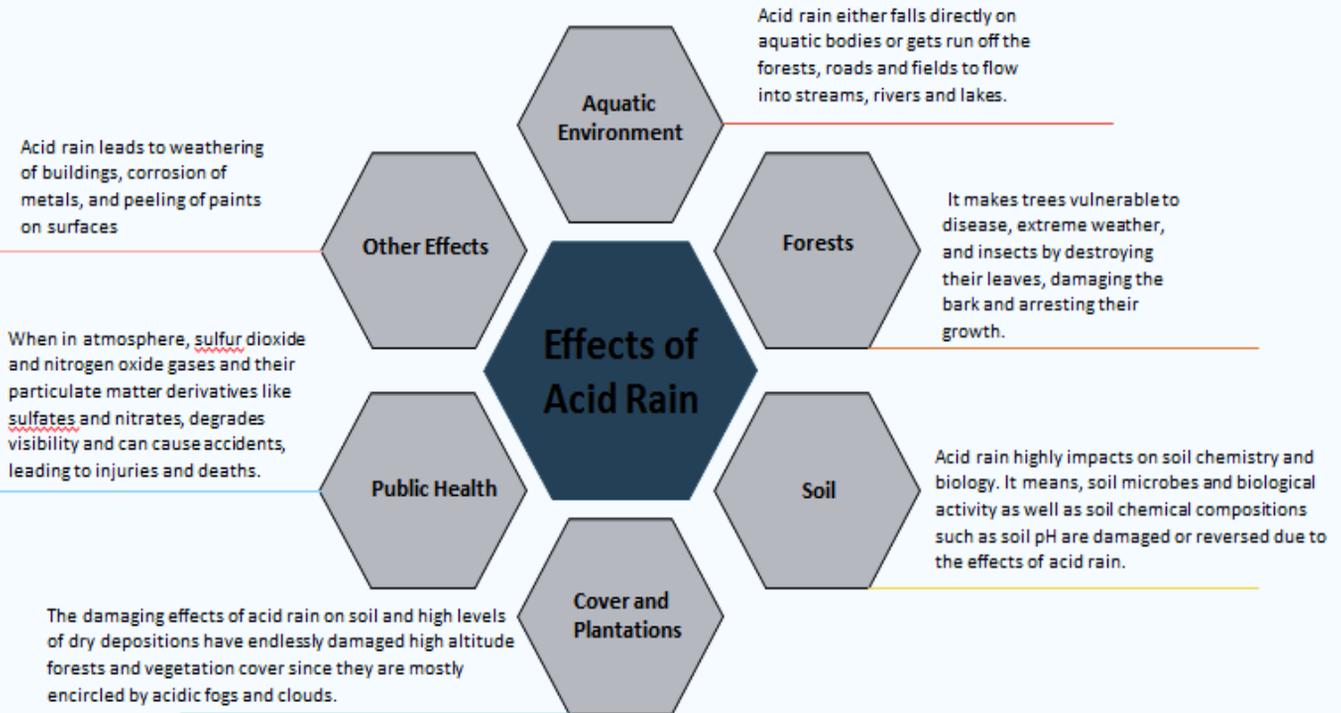
1. Natural Sources
The major natural causal agent for acid rain is volcanic emissions. Volcanoes emit acid producing gases to create higher than normal amounts of acid rain or any other form of precipitation such as fog and snow to an extent of affecting vegetation cover and health of residents within the surrounding.

2. Man-made sources
Human activities leading to chemical gas emissions such as sulfur and nitrogen are the primary contributors to acid rain. The activities include air pollution sources emitting sulfur and nitrogen gases like factories, power generations facilities, and automobiles. In particular, use of coal for electrical power generation is the biggest contributor to gaseous emissions leading to acid rain. Automobiles and factories also release high scores of gaseous emissions on daily basis into the air, especially in highly industrialized areas and urban regions with large numbers of car traffic.

The existing winds blow these acidic compounds over large areas across borders and they fall back to the ground in the form of acid rain or other forms of precipitation. Upon reaching the earth, it flows across the surface, absorbs into the soil and enters into lakes and rivers and finally gets mixed up with sea water.

Effects of Acid Rain

Aquatic Environment

Acid rain either falls directly on aquatic bodies or gets run off the forests, roads and fields to flow into streams, rivers and lakes.

Other Effects

Acid rain leads to weathering of buildings, corrosion of metals, and peeling of paints on surfaces

Forests

It makes trees vulnerable to disease, extreme weather, and insects by destroying their leaves, damaging the bark and arresting their growth.

Public Health

When in atmosphere, sulfur dioxide and nitrogen oxide gases and their particulate matter derivatives like sulfates and nitrates, degrades visibility and can cause accidents, leading to injuries and deaths.

Soil

Acid rain highly impacts on soil chemistry and biology. It means, soil microbes and biological activity as well as soil chemical compositions such as soil pH are damaged or reversed due to the effects of acid rain.

Cover and Plantations

The damaging effects of acid rain on soil and high levels of dry depositions have endlessly damaged high altitude forests and vegetation cover since they are mostly encircled by acidic fogs and clouds.

Source: Livescience.com

Refreshing Tips
Exercises for Tired Computer Users

1. Palming

Start this exercise in a comfortable position. First, rub your palms together to create a bit of heat. Next, form your hands into cup shapes. Now, take your hands and press them over your (closed) eyes. Put your left hand on your left eye and right hand on your right eye. Let the heat warm your eyes and relax for a few minutes like this.

2. Blinking

You may have to train yourself to blink normally while computing. Aim for a blink every four seconds to keep your eyes nicely lubricated and happy.

3. Eye Rolling

Just as neck rolling can do wonders for stiff necks, eye rolling can really do wonders for your eye muscles

4. Visual Scanning

After so many hours staring at up-close objects on a screen, help your eyes adjust between objects both near and far. For example, start with a television and then move on to the DVD player next to it and then move on the window behind it.

5. Focusing

Take a visual break and focus on something else every now and then. It's important to take your eyes off the computer screen and look away at something else for several seconds or a minute.

Source: rebuildyourvision.com

Take a break
Catch up memories☺