Keep Scotland Beautiful

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Climate Change: Dangers vs. human Effects

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What is Climate Change?

Most of us will have probably heard of Climate Change by now. Over the years we have continuously been affected (and we still are) by the problem of increasing greenhouse gases. Greenhouse gases have a very important job. This is also known as the 'greenhouse effect'. Greenhouse effect involves the way the sun's energy is trapped in the Earth's atmosphere. The gases allow through the sun's energy which heats up the Earth's surface. This heat will then try radiate out of the surface but instead the gases will hold the heat in, warm enough to support life.

What is wrong though?

In recent years there has been evidence that indicates that human activity is increasing this greenhouse effect. This is causing more heat to remain trapped and that it is warming the Earth's atmosphere. There are several gases that are very good at holding the heat in the atmosphere including: carbon dioxide, water vapour, methane and nitrous oxide.

Human Activity

Human activity is directly increasing the amount of greenhouse gases in the Earth's atmosphere. Evidence that shows this is from NASA. The level of carbon dioxide (of course there have been ups and downs) has never passed 300 (parts per million) until recent years. For over 200 million years the levels have stayed around about the same through the process called the carbon cycle. Large amount of water in the sea will absorb the carbon dioxide as soon as it is made and will let go when there is not much in the air. But not it is increasing a lot especially in 1950 and after. The carbon dioxide level was 310 but today the carbon dioxide level in 400 (parts per million)! Some of the human activities that have significantly increased levels include: Air travel, coal, oil or gas-fuelled power station and petrol and diesel powered vehicles. Personally surprised by this human activity that affects the greenhouse gases are the increasing number of cattle being raised. More and more cattle are being raised for different uses. Cows release around about 70 and 120 kg of methane per year. The negative effect on the climate because of methane is 23 times higher than the effect of CO2 (carbon dioxide).

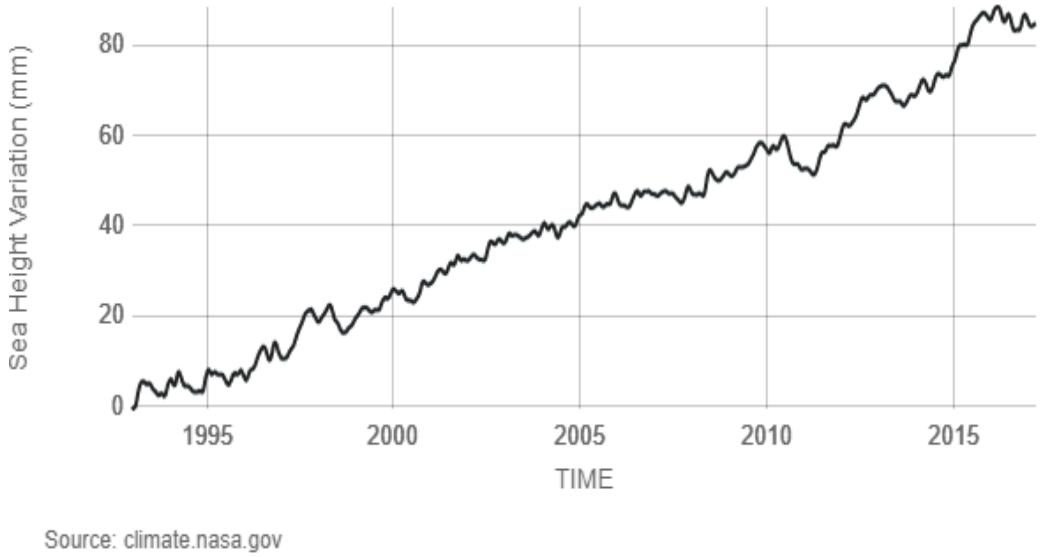
Extreme Weather

Hurricanes are getting more frequent, but they are also getting stronger. In parts of the world such as Australia and California, USA there have been severe droughts. There have also been numerous wildfires and stormy weather conditions, causing flooding and damage to crops. Many scientists believe there is a link between the recent increase in extreme weather and the warming of the Earth's atmosphere.

Changing oceans and Melting Icecaps

The greatest effects of climate change have been in the Arctic. Climate change is causing the melting of the Greenland Ice Cap (the second largest ice body in the world!). Lately a giant iceberg broke away from the Antarctic, one of the biggest recorded. This iceberg was roughly 6000 sq. km. This means that more fresh water in entering the Atlantic Ocean which could eventually alter the path of important current including the North Atlantic Drift. Ice caps and glacier will eventually melt if the Earth's atmosphere continues to heat up. When this water reaches the sea the sea level will rise. This could result to low-lying area around the world such as South Florida in the USA and the Netherlands in Europe likely to get flooded. If storms become more frequent, the sea will rise up onto land, forcing people to leave. This could happen to islands such as Tuvalu in the South Pacific. They are already a few meters above sea level. Global sea level has already risen about 8 inches in the last century.

Image: Republic of Maldives: Vulnerable to sea level rise



Source: climate.nasa.gov

Damaging the Environment

When we add things into the environment that harm ourselves and other living organisms we cause pollution. Chemical factories, power stations and vehicle

engines all release polluting chemicals in the air including: carbon monoxide gas, sulphur dioxide, gaseous oxide of nitrogen and particulates in the air. Sulphur dioxide and gaseous oxide of nitrogen are very dangerous because they will dissolve in the water clouds and then fall as acid rain which will harm organisms on both sea and land. The carbon monoxide gas will reduce the amount of oxygen the blood can carry and particulates like dust can carry tiny amounts of poisonous chemicals that will damage lungs and other parts of the body.

What can we do/solution?

There are numerous ways we can as individuals and as a community help reduce the greenhouse gases being emitted in the atmosphere. Examples of what we can do are:

1. Recycle paper, metal, plastics and glass (the 3Rs).
2. Walk or cycle instead of using a car (you can also use public transport).
3. Turn down the central heating thermostat (well insulated home).

Governments and different organisations are also working hard to minimise the effects of global warming. Scottish government has a target for 'renewable sources to generate the equivalent of 100 per cent of Scotland's gross annual electricity consumption by 2020' and also for renewable sources to provide 11 per cent of Scotland's heat demand by 2020. WWF are working with government 'to bring forward policies to reduce UK emissions in line with International targets'. Stephen Cornelius
Chief adviser for climate changes in WWF says 'Climate change is one of the biggest threats faced by our natural world and also a tough social and economic issue. It is something we can't leave to future generations to clean up.'

The smallest thing like throwing your objects can make a big difference to help reduce the greenhouse gases. Together everyone can make the world better again.

Sources

https://climate.nasa.gov/