

Climate

The world's climate is changing at an unprecedented rate.

Scotland has cool summers, mild winters and rainfall spread over the course of the year. There are regional differences in climate as well as differences between seasons.

State

Over the last century, Scotland's climate has become warmer, while changes in rainfall patterns have led to drier summers and wetter winters. We have also seen more frequent heavy rainfall events.

Since the late 1800s the world's atmosphere and oceans have warmed, amounts of snow and ice have diminished, the sea level has risen, and concentrations of greenhouse gases in the atmosphere have increased. Concentrations of carbon dioxide have increased by 40% since pre-industrial times, primarily from burning fossil fuels.

Challenges

The way we live is causing this rapid change in our climate. The industries and processes we rely on are the main source of greenhouse-gas emissions, which are causing an increase in the Earth's temperature, and consequent alterations in weather patterns.

Greenhouse gases already emitted into the atmosphere mean that further climate change is unavoidable, regardless of future emissions. However, we need to reduce our greenhouse-gas emissions to prevent even more climate change.

We also need to prepare for the climate change that we cannot avoid because of our previous emissions, which have set us on course for a changing climate.

Response

The Climate Change (Scotland) Act 2009 makes a commitment to cut greenhouse-gas emissions in Scotland by 80% of 1990 levels by 2050. The Act provides a framework for action in Scotland to mitigate emissions and adapt to a changing climate.

Reducing our emissions and adapting to a changing climate will require adjustments for everyone – our industries as well as ourselves. Some of these will need to be big; for example, changing the way our electricity is generated, whereas others will be small, such as being more careful in using energy in our homes or the decisions we make about transport.

What is it?

[Climate](#) - Scotland generally has cool summers, mild winters and rain falls throughout the year. Over the last century it has become warmer, with drier summers, wetter winters and more frequent heavy rainfall.

Benefits and uses

[Aquaculture](#) - Aquaculture is a growing and increasingly important industry in Scotland. It helps to underpin sustainable economic growth in rural and coastal communities, particularly in the Highlands and Islands, with many depending on the employment and revenue it provides.

Wildlife

[Estuaries and coastal](#) - Scottish coastal and estuarine habitats are full of rich, diverse and fragile sea life that is under considerable pressure and shows signs of damage, but may be recovered through sustainable management.

[Rivers and lochs](#) - Scotland's freshwaters provide a range of habitats for plants and animals. Overall, freshwater habitats and species are in good condition. However, while some individual habitats and species are improving, others are still under pressure.