

15 key consequences of climate change for Scotland

These are the 15 key consequences of climate change identified in the Scottish Government's Climate Change Adaptation Programme: Climate Ready Scotland. This programme sets out Scottish Ministers objectives in relation to adaptation to climate change, their proposals and policies for meeting those objectives.

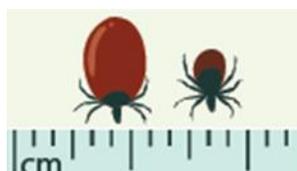
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THE PRODUCTIVITY OF OUR AGRICULTURE & FORESTS

A warming climate has the potential to improve growing conditions in Scotland and increase the productivity of our agriculture and forestry. However, climate change will also pose a number of threats, from more variable and extreme weather to the spread of pests and diseases, which may limit this potential.

2



THE OCCURRENCE OF PESTS AND DISEASE

As our climate changes, it will create new conditions that may allow existing pests and disease to spread and new threats to become established in Scotland. This may impact on the health of our people, animals, plants and ecosystems if risks are not properly managed.

3



THE QUALITY OF OUR SOILS

We rely on soils to sustain biodiversity, support agriculture and forestry, regulate the water cycle and store carbon. Soils also have an historic environment value, as a proxy record of environmental change and for the preservation of archaeological deposits and artefacts. Soils and vegetation may be altered by changes to rainfall patterns and increased temperatures - as well as the way we use the land.

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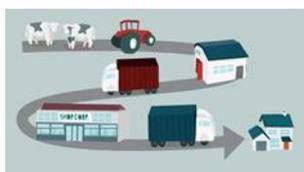
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THE HEALTH OF OUR NATURAL ENVIRONMENT

Climate change may affect the delicate balance of Scotland's ecosystems and transform Scotland's habitats and biodiversity, adding to existing pressures. Some distinctive Scottish species may struggle and could be lost, invasive non-native species may thrive, while a degraded environment may not be able to sustain productive land or water supply.

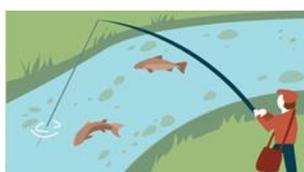
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THE SECURITY OF OUR FOOD SUPPLY

Climate change may have an impact on global food production. Although Scotland may be able to grow more food, this will not offset the impact global disruption has on us. The effects of increased volatility in the global commodity market due to exposure to extreme climatic events has an impact on supply and cost of food.

6



THE AVAILABILITY AND QUALITY OF WATER

As our climate warms and rainfall patterns change, there may be increased competition for water between households, agriculture, industry and the needs of the natural environment. Summer droughts may become more frequent and more severe causing problems for water quality and supply.

7



THE INCREASED RISK OF FLOODING

Flooding can already have a devastating effect on those affected. With climate change likely to alter rainfall patterns and bring more heavy downpours, we expect flood risk to increase in the future. This could impact on properties and infrastructure – with serious consequences for our people, heritage, businesses and communities.

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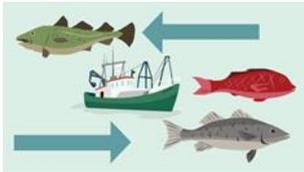
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THE CHANGE AT OUR COAST

Sea level rise is already having a widespread impact on parts of Scotland’s coast. With this set to accelerate over the coming decades, we can expect to see more coastal flooding, erosion and coastline retreat – with consequences for our coastal communities and supporting infrastructure.

9



THE HEALTH OF OUR MARINE ENVIRONMENT

Our marine ecosystems – from plankton through to fish, mammals and seabirds – are already being affected by climate change alongside other pressures, particularly fishing. Changes will continue, with rising temperatures likely to change species and their distributions. The changes will present both threats and opportunities to our commercial fisheries and aquaculture.

10



THE RESILIENCE OF OUR BUSINESSES

Climate change and associated extreme weather may disrupt transport, energy and communication networks in Scotland and around the world. This could impact on markets, affect supply chains and raise insurance costs.

11



THE HEALTH AND WELLBEING OF OUR PEOPLE

A warming climate may provide more opportunity to be outdoors and enjoy a healthy and active lifestyle, while reducing mortality in winter. However, it could affect patterns of disease and other health issues. Climate change and associated extreme weather may disrupt the lives of individuals and communities, limiting access to vital services and impacting on people’s physical and mental health.

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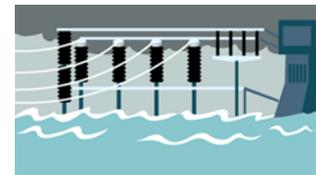
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OUR CULTURAL HERITAGE AND IDENTITY

The changing climate is already altering our unique Scottish landscape and threatening our historic environment through coastal erosion, flooding and wetter, warmer conditions. The increased pace of climate change presents challenges to all those involved in the care, protection and promotion of the historic environment.

13



THE SECURITY AND EFFICIENCY OF OUR ENERGY SUPPLY

Climate change may influence Scotland's capacity to generate weather-dependent renewable energy. For example, varying water availability will affect hydro generation schemes. Climate change can also impact power distribution, with impacts ranging from damage caused by extreme weather events, to reduced transmission efficiency occurring as a result of temperature fluctuations. Impacts on global energy markets may also affect energy supplies in Scotland and consequently our overall energy security.

14



THE PERFORMANCE OF OUR BUILDINGS

Climate change will have an impact on the design, construction, management and use of our buildings and surroundings. Whether retrofitting existing or building new, it is likely that there will be issues with water management (in flood and drought), weather resistance and overheating.

15



INFRASTRUCTURE – NETWORK CONNECTIVITY AND INTERDEPENDENCIES

Our energy, transport, water, and ICT networks support services are vital to our health and wellbeing and economic prosperity. The effect of climate change on these infrastructure systems will be varied. They are likely to be impacted by an increase in disruptive events such as flooding, landslides, drought, and heatwaves. Our infrastructure is closely inter-linked and failure in any area can lead to wider disruption across these networks.