Mitigating and adapting to climate change: Research at SCRI for northern Britain

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Over the next 75 years, if gaseous emissions continue unabated, the climate of northern Britain is likely to become up to:

- 3.5°C warmer in summer
- 50% drier in summer
- 40% wetter in winter
- 90% less snow
- 4 weeks earlier spring
- more extreme temperature and rainfall events
- 90% higher CO₂ levels
- higher UV-B and reduced ozone

This will affect the crops that can be grown, their yields and quality, and their susceptibility to pests and diseases. The efficiency with which plants acquire water, nutrients and radiation may change too.

**Background**

SCRI has a strong track record in responding to climate and environmental change, particularly in the development of appropriate management practices and the deployment of genetic resources to combat current and emerging pest and disease problems and abiotic stresses such as drought and frost tolerance.

SCRI’s research is now focussing more sharply on opportunities to mitigate and adapt to climate change.

**Mitigation research**

Mitigation research includes:

- the use of plants to transfer carbon to soils
- modifying carbon and nitrogen cycling in soil/plant systems
- improving nutrient use efficiency to reduce gaseous and leaching losses

**Adaptation research**

Adaptation research includes:

- identifying mechanisms and sources of durable resistance/resilience to diseases and abiotic stresses
- genetic enhancement to cope with variable growing conditions
- the development of new crops

SCRI is developing partnerships with universities to enhance knowledge that can inform mitigation policies and practices, and with commercial bodies to ensure that knowledge and innovation, that can benefit adaptation, finds its way to market expeditiously.

SCRI is involved in many international projects enabling us to identify and access germplasm that may have traits which enable crops to adapt to predicted climate change scenarios for Scotland.