

The big picture

Long-term monitoring programmes like ECN help us to piece together the bigger picture about climate change, and they play a key role in informing policymakers, decision-makers and society about its impacts. They can also help us to shape appropriate responses. ECN's own contribution to three key aspects of climate change are shown here, with links to relevant articles in this publication and on our website

Key climate change issues and questions

Understanding impacts

How will biodiversity be affected? Will we lose or gain protected and/or valuable species?

Might the effects of pressures such as land use change or pollution be exacerbated by climate change?

What is the impact on species and habitats of extreme events, such as drought or flash floods?

What are the consequences for ecosystem services, i.e. the benefits we derive from the natural environment?

What are the consequences for UK semi-natural habitats?

Which species make suitable indicators of climate change impacts?

Capacity building & knowledge transfer

How can indicators be used to support policy- and decision-making?

How do we develop networks to provide early warnings of change at regional and global scales?

How can we best provide data and information to support ecosystem managers and policymakers?

How can awareness be raised and individual behaviour be influenced?

Mitigation & adaptation

What are the carbon dynamics of peats, other soils & forests? Can more carbon be stored in these systems?

Can the resistance of habitats and species to climate change be influenced?

How can we manage the recovery of degraded ecosystems in a changing climate?

What can ECN offer?

Long-term, species level biological datasets

Co-located physical, chemical and biological measurements

Frequent, long-term monitoring picks up extreme events

Range of terrestrial and freshwater measurements, coupled with opportunities for site-based research

Detailed soil and vegetation survey data collected

ECN monitors plant and animal communities at sites spanning a range of climatic conditions

Data relevant to some existing indicators collected. Additional indicators being developed

Prominent participation in and development of European and global monitoring systems

Easy access to raw, summarised and interpreted data

Active public engagement programme; Lead science partner in the *Climate Change Explorer* (CCE) project

Long-term soil measurements. Carbon dynamics studied in peatland and forest systems

Sites and facilities for experimental research into ecosystem responses

ECN can tell us about interactions between climate change and other pressures on ecosystems

Read more ...

Butterflies p8 • Atlantic salmon p16

Lakes: climate change and water quality p18

Drought impacts on invertebrates p10

Water quality in lakes p18 and reservoirs p19

Resistance of vegetation to climate change p14

Beetles as indicators p6 • Frog phenological responses p12

See 'indicators' on website (www.ecn.ac.uk)

European and global monitoring networks p21 • Monitoring UK protected areas p23

Salmon fisheries p16 • Upland management p19 • Accessing ECN data p22 • Biodiversity in protected areas p23

CCE project: www.climatechangeexplorer.org.uk

Carbon in peatlands p19

Resistance of vegetation to change p14

Restoration of lake water quality p18 • Recovery of peatlands from acid deposition p19