How should we respond to climate change?

The challenges of a warming climate are already being felt – so we need to adapt and prepare. How can we develop solutions that benefit a range of interests?

OVERVIEW

Impacts of our changing climate are already being felt in the UK – by wildlife, as well as people. We can expect our winters to become wetter and summers drier. We're already seeing increased incidence of extreme weather conditions with heavy rainfall in summer, as well as winter, and more periods of drought. We need to plan our responses, so the debate is about how we can best do so for the widest benefit – for people, the countryside and for wildlife.

The floods of winter 2013/14, which generated headline news about the Somerset Levels and inundated homes and farmland, led to some angry responses from those affected. There were simplified and polarised views in the media – suggestions that rivers hadn't been adequately dredged, and even that wetlands created by conservation organisations might have contributed to the flooding.

Wildlife can also suffer during extreme weather events. And with climate change, many species are on the move, within the UK and across continents – Dartford warblers are in Staffordshire, comma butterflies reaching Scotland, little bitterns starting to regularly breed in the UK. The best response to climate change should seek solutions that benefit both people and wildlife to make the countryside work for all. But what does this mean, and how can we achieve such a response? We know the natural environment can contribute to flood control – at RSPB reserves at Hesketh Marsh in Lancashire and Freiston Shore in Lincolnshire for example – but can we extend such approaches of mutual benefit more widely across the countryside and its range of interests?

Words: Paul Bloomfield Photos: Peter Cairns, Andy Hay and Mark Sisson (all rspb-images.com), Mike Lane, Richard Packwood

POINTS OF VIEW ADAPTING...

FOR PEOPLE

Lord John Krebs
Chair, Adaptation Sub-Committee on the Committee for Climate Change

"Climate change will test the resilience of the environment. Many habitats and species are degraded beyond the point where they can naturally adapt. This is bad news for wildlife, but also for the vital goods and services that nature provides people, such as clean water from the uplands and coastal flood protection. More needs to be done to reverse the decline. The government has ambitious targets, but delivery is falling short. We need to increase the pace of restoration and reconnect ecosystems on a landscape scale."

FOR FARMING

John Varley
Estates Director, Clinton Devon Estates

"With changing weather already affecting global food production, farmers will need to adapt as they make informed decisions about land use. Clinton Devon Estates has teamed up with the Met Office to deliver EUPORIAS – a science-based, Europe-wide pilot project to help develop a specialist forecasting prototype, available online, providing farmers with seasonal weather forecasts for up to three months ahead. Farmers need to work with nature, not against it, and new technologies need to be deployed to help them."

FOR NATURE

Olly Watts
RSPB Senior Climate Change Policy Officer

"To adapt to a changing climate, nature needs us to manage things a little differently. This is important not just on nature reserves, but also across the wider countryside. Bringing partners together to discuss climate change in our Futurescape landscape-scale projects has been illuminating. It affects all countryside interests, and how working together brings benefits for rural businesses, rural communities and nature – such as flood control, sustainable farming and places for wildlife." Visit **rspb.org.uk/futurescapes**

£583.6m
Conservative estimate of public costs of 2013/14 winter floods (to repair the railways, pump water, the bill from local authorities, flood defences, grants to affected properties and farmers' grants).

330
Length in days of thermal growing season in central England in 2000. Between 1961 and 1990, the average figure was 252.

17.6 km
average northward movement per decade of species in the northern hemisphere temperate zone – this is almost 5 m every day.

x67
Broadleaved woodland is on average 67 times more effective than improved, grazed grassland at absorbing surface water run-off – informing strategies for managing floods.

65 million cubic metres
Floodwater on Somerset Levels during winter 2013/14

0.85°C
Rise in the average temperature of the planet's surface, between 1880 and 2012.

200,000
more hectares of upland blanket bog in England should be restored to replace degraded habitat, lock up stored carbon and improve drinking water quality.

RSPB VIEW

Get nature in better shape

Strong and healthy wildlife populations will cope better with the growing impacts of climate change than those that are weak and under pressure. Yet only 37% of Britain's best sites are in good condition and around 60% of our species are declining. We must take action to put that right.

How are our nature reserves adapting?

Climate change is now integral to managing our nature reserves. Sometimes this involves major works, for example building flexibility in freshwater management to cope with both wet and dry years. Smaller scale, ongoing changes are also vital to give wildlife the conditions it needs, year-in, year-out. Growing seasons are lengthening, so we adjust our grazing; we can provide cooler conditions through vegetation management as summers get hotter.

How will our wildlife change?

Many birds' ranges are already moving north. Nature reserves provide habitat for species finding new places to live in a warming world, including some new to the UK, such as black-winged stilts and little bitterns.

Can adaptation help both people and wildlife?

"Soft" flood defences are now widely proven in both coastal and river floodplains, with carefully designed washlands to protect people and provide habitat for wildlife. Integrating adaptation for different interests, across landscapes, form the best outcomes for both people and wildlife. Tree planting is a great example.

Data sources: 330 – *Thermal growing season in central England*, summary report, Dept of Energy & Climate Change, April 2013. £583.6m – Analysis cited in parliament.uk/briefing-papers/SN06809.pdf. x67 – Woodland Trust, *The impact of upland land management on flood risk: multi-scale modelling methodology and results from the Pontbren experiment*. 65m m³ – press conference at Downing Street, 11 February 2014. 1°– *Central England and global surface temperature, summary report*, Dept of Energy & Climate Change, 2013. 17.6 km – Institute of Hazard, Risk and Resilience.