



giving
nature
a home



The nature of climate change

Europe's wildlife at risk



Scotch argus butterfly by Richard Fexels (rspb-images.com)

Understanding climate change

Climate change is one of the greatest long-term threats to the nature we love. Compounded by other pressures on land and at sea, it is putting our wildlife at risk. As such it is a vital area of work for the RSPB, and we have scientists working to understand and develop solutions to the threats that nature faces.

Seven years ago, we posed 20 tough questions about climate change and what it could mean for wildlife. Since then, scientific understanding has progressed significantly, so we now know far more about what a changing climate means for wildlife today and for the future.

- Across Europe, **wildlife is already responding to climate change**. Future projections clearly show us that, overall, **wildlife will face a much tougher environment** as a result of a changing climate.
- There is still a pressing need to sustainably reduce our greenhouse gas emissions in order to avoid climate change seriously affecting wildlife. **Action on climate change must be coupled with measures to reduce other pressures on wildlife on land and at sea.**
- **We can help wildlife cope with climate change.** Larger, more connected and better quality areas for nature will be crucial. Better implementation of

the laws that already protect nature, such as the EU Birds and Habitats Directives, is an essential step in making this happen.

- Helping wildlife and restoring ecosystems **can also benefit people** in numerous ways. We need more partnerships of conservation organisations, government and industry to deliver more of these win-win solutions.

The RSPB has played an important role in improving our understanding of the effects of climate change, and is already implementing measures that will help wildlife to cope in the future.

This leaflet summarises a longer report that RSPB scientists have put together. The full report, "The Nature of Climate Change," on how climate change will affect wildlife can be found here: rspb.org.uk/natureclimate

How is climate change affecting wildlife?



Dartford warbler by Guy Rogers (rspo-images.com)

The evidence that RSPB scientists have reviewed shows that climate change is already affecting wildlife. Climate change poses big challenges for Europe's wildlife: from disruption to ecological food chains, to coping with more frequent extreme events, to climate changes requiring species to shift their range. And many of these effects will become more marked in the future unless we take decisive action now.

- **Species are rapidly colonising new areas,** as we would expect under climate change. Since 1900, at least 120 species have colonised the UK. Small red-eyed damselflies, first recorded in 1999, have spread through much of England; and spectacular birds like black-winged stilts and cattle egrets have bred in the UK.
- **Wildlife is moving northwards and uphill due to climate change.** As the climate changes, wildlife tracks suitable conditions. In Finland, 48 species of butterfly have moved 37 miles (60 km) north between 1992 and 2004. Yet wildlife will only be able to track suitable climate if there is enough suitable habitat available. One third of Europe's bumblebees could lose 80% of their range by 2100.
- **Species are becoming mismatched, in terms of timing, numbers and location.** In the Netherlands between 1988 and 2005, oak leaves emerged 1.7 days earlier per decade, caterpillar abundance peaked 7.5 days earlier per decade, egg hatching of great tits, blue tits, coal tits and pied flycatchers became 3.6–5.0 days earlier. Meanwhile sparrowhawk chicks, which feed on small bird chicks, are not hatching earlier.
- **Better management of existing protected areas** and the creation of new protected areas, alongside measures to make the wider landscape more wildlife-friendly, will play an important role in providing wildlife with suitable habitat.
- **Extreme weather events have already become more frequent and intense due to climate change.** This trend will continue and we know that weather extremes can harm wildlife. For example, wet and windy springs can cause mass deaths of shags, and the survival of capercaillie chicks in Scotland is severely affected by unseasonal heavy rainfall.

Case study – Dartford warblers

Dartford warblers – a bird protected under the EU Birds Directive – have expanded their range in the UK in recent decades, moving northwards and to higher altitudes. But at the southern edge of their range in Iberia, large areas are expected to become unsuitable, outweighing any gains they have made. This reinforces the importance of a co-ordinated, Europe-wide approach to climate change and nature conservation.

Continental shift



Climate change is already affecting wildlife across Europe, and predictions for the future are concerning.

- Under a 3°C rise in average global temperature, the geographical range of a typical European breeding bird is projected to shift around 341 miles (550 km) further north, causing birds to lose 20% of their breeding range through climate change.
- Combined climate change and land use change, could mean that by 2050 up to a quarter of large mammal habitat in Europe is lost.

The body of evidence of how change is affecting wildlife is growing:

- The decline of the UK kittiwake population by 70% has been linked to changes in their food sources driven by warming sea temperatures.
- As summer temperatures have risen, the silver-spotted skipper butterfly has expanded its range in the UK. In protected areas actively managed for conservation, population survival of these butterflies is higher than elsewhere in the countryside.
- In the Czech Republic, higher temperatures have allowed populations of the edible dormouse to increase, leading to increased nest predation of great tits and collared flycatchers.
- In the Spanish Sierra Nevada, dung beetles shifted 321 metres uphill between 1981–82 and 2006–07. This was driven by both their colonising higher elevations, and their loss from lower elevations.

Protecting wildlife and people



RSRB Forshard by Peter Cairns (rsrb-images.com)

For wildlife to be able to thrive under a changed climate, we need to manage more areas of land and sea for nature, in both protected areas and the wider countryside and seas. Management for wildlife should address changing conditions, and this can help people as well.

For example, the drying out of peatlands affects craneflies – a key food source for upland birds, such as golden plovers. Restoring these peatlands not only provides more food for upland breeding birds, but it also has clear benefits for people. It keeps the vast carbon store within the peatlands safely locked away, and improves the quality of public water supply. In this way, healthy peatlands are better able to help wildlife withstand climate change, and benefit people too.

Protected areas are crucial

There is good evidence that protected areas across the EU, such as Special Areas of Conservation and Special Protection Areas, are already helping wildlife to respond to the changing climate. As well as improving the status of threatened species and thus their resilience to climate change, these areas are also helping to enable species to track suitable climate.

Projections show that protected areas will remain important for wildlife in the future and that we will need more of them. Therefore, the laws they rely on, the EU Birds and Habitats Directives, need to be fully implemented. This means designating more areas on land and at sea, and managing them to a high standard for wildlife.



Case study – Bittern

Bitterns, a bird once on the brink of extinction in the UK, are protected by the EU Birds Directive. Once confined to a few coastal reedbeds in England, they have bounced back to a healthy population, thanks to the creation of new sites further inland. These will protect them against any future loss of coastal habitat from rising sea levels and flooding caused by climate change.



Responding to change

Iberian Lynx by Photoshot

We can act to help wildlife by limiting climate change and making sure species can cope with the changes that are inevitable.

To do this, the RSPB believes:

- We need more, bigger, better and joined-up areas for nature on land and at sea that, through good conservation management, help wildlife to be more resilient and adaptable to climate change.
- Making nature more resilient to climate change means reducing other pressures on it, on land and at sea. The Response for Nature reports, that the RSPB contributed to, provide a comprehensive set of measures that we consider necessary to help wildlife.
- The UK's Governments and fellow EU member states can commit to full implementation of the EU Birds and Habitats Directives, and, should oppose any changes to these important laws under the European Commission's "fitness check" process.
- The UK's Governments can act positively in relation to climate change on the international stage; and this can be backed up by robust policies and support for sustainable, low-carbon energy and climate change adaptation at home.
- The UK can meet its climate targets, in particular through support for the low-carbon sector, and through cutting emissions across the economy, to 2020 and well beyond.

To find out more, please email us at:

climate@rspb.org.uk

"Nature is demonstrating that we're already in a world of change. We need to act, and fast, to reduce our greenhouse gas pollution and to face up to the impacts we're already living with. Then we can make better homes for nature, and ourselves."

Dr Mike Clarke, Chief Executive, The RSPB

Without intervention, climate change could contribute to the Iberian lynx going extinct in Spain.

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The RSPB is the country's largest nature conservation charity, inspiring everyone to give nature a home.



The RSPB is a member of BirdLife International, a partnership of conservation organisations working to give nature a home around the world.