

ABSTRACTS

Hot and bothered? Species vulnerability to climate change

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The Meeting Rooms, The Zoological Society of London, Regent's Park, London NW1 4RY

Impacts of climate change on birds

James Pearce-Higgins, Director of Science, British Trust for Ornithology

There is much concern about the potential for climate change to redistribute species, reshuffle communities and threaten many species with extinction. What can we learn from studies of the impacts of climate change on biodiversity that have already been conducted, and what does the science say about how bad things could get? Because they are well studied, we can learn a lot from looking at how bird populations and communities have responded to climate change, which is the aim of this talk. Building on long-term monitoring of bird populations in the UK by the BTO, this talk will summarise the ways in which climate change has already impacted the species that we see around us. Some of these impacts have been positive for some species, whose populations and distributions have expanded in response to recent warming, whilst other effects have been more negative. We can learn much from examining why these differences occur to inform our conservation planning. We will then consider the extent to which responses of birds in other parts of the world may be similar or different from those in the UK, before finally concluding with an assessment of the severity of threat that climate change is likely to pose for bird species globally.

Assessing species vulnerability to climate change: how and why?

Jamie Carr, Climate Change Programme Officer, IUCN Global Species Programme

Assessing the climate change vulnerability of species is a rapidly developing field of study, and a number of methods have now been developed that aim to achieve this. The way in which one chooses to assess the vulnerability of one or more species to climate change will depend upon the underlying objectives and the question(s) that they wish to try and answer. This talk provides an introduction to the most commonly applied approaches available for assessing species' vulnerability to climate change, and describes the advantages and disadvantages of each.

Hot species and bothered assessors: climate change assessments and the IUCN Red List

Monika Böhm, Indicators & Assessments Unit, ZSL

Biodiversity is in worldwide decline as has been extensively documented on the IUCN Red List of Threatened Species. Immediate threats of habitat loss, pollution and overexploitation are the most widely cited causes of this decline on the Red List, while emerging and often slower-acting threats such as climate change are currently listed as a threat for a comparatively small number of species. Taking the example of a random representative sample of reptiles, our current estimates suggest that one-fifth of the world's reptiles are threatened with extinction, due to the immediate threats of habitat loss and overexploitation, while only 3.6% were listed as threatened by climate change. In addition to IUCN Red List assessments, we carried out a climate change vulnerability assessment to highlight further, emerging priorities for conservation action.

The immediate recommendation from climate change vulnerability assessments such as this is that findings are integrated into reassessments of species' extinction risk, to monitor both immediate and slow-acting threats to reptiles. Recent research suggests that IUCN Red List criteria already effectively account for climate change threatened species. However, assessors may differ in their attitude to climate change as an extinction risk-promoting threat, due to uncertainty of climate change projections and knowledge gaps about the effects of climate change on species. We present ongoing research to investigate whether assessors may show a tendency to associate certain habitats, geographical areas, biological traits or simultaneously-occurring threats with threats associated with climate change.

How to identify species at risk of extinction due to climate change

Richard Pearson, Centre for Biodiversity and Environment Research, UCL

There is a pressing need to develop effective vulnerability assessments for evaluating the conservation status of species under twenty-first century climate change. Some people have suggested that established assessments, such as the IUCN Red List, need revising or superseding in light of the threat that climate change brings. In this talk I will describe some of the methods that are being developed to estimate extinction risk due to climate change. Using case studies from the Arctic and North America, I will illustrate different methods and discuss some of their pros and cons. I will show how detailed knowledge about well-studied taxa can be used to help understand the risks posed to less well known species. Set against a backdrop of multiple sources of uncertainty, I will argue that new methods provide increasingly robust predictions and I will point to important new directions that researchers are exploring. Somewhat encouragingly, I will show how existing assessment systems may be better able than expected to identify species at risk from climate change. Thus, while climate change brings many new conservation challenges, it might not in fact be very different from other threats in terms of assessing extinction risk.