Historical wildlife trends reliable for predicting species at risk

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Some of the methods used to predict at risk species are trend-based - an indicator of what happens gradually over time - while others are trait based, which uses signs of climate change in the current environment.

Mix these methods together, however, and you get an unreliable set of results, scientist have found.

The researchers are calling for guidelines produced by the International Union for Conservation of Nature (IUCN) Red List, the world's main authority on species that are at risk of extinction, to be updated to include cautionary messages on some methodologies of climate change risk assessment.

Christopher Wheatley, PhD student at the University's Department of Biology, said: "We looked at 12 methods of assessing the potential risk of climate change on British birds and butterflies. These methods tend to be used interchangeably to come to an agreement on how much risk is posed by climate change."

Researchers tested the 12 methods by running the assessment as though the data was being collected in the 1970s. They then looked at whether the results matched the reality of the British bird and butterfly population today.

Professor Chris Thomas, also at the University's Department of Biology, said: "We found that methods relying on historical climate change trends

from the 1970s to today identified high risk species that have consistently declining populations over time.

"Those methods that relied on species trait information showed very little pattern, and therefore it was difficult to use this data to explain the populations that we see today."

In some cases, at risk populations live in environments that are remote and as a result it is expensive to collect data over a sustained period of time. In these circumstances historical data will be missing and environmentalists have no choice but to fall back on methods that look at traits not trends.

Richard Bradbury, from the Royal Society for the Protection of Birds (RSPB), said: "Although we appreciate historical data is not always available, mixing these methods to come to firm conclusions about a species' chance of survival, provides a false picture of what is really happening and we would advise caution when looking at this information.

"We also hope that this research will highlight the importance of long term monitoring of environments in accurately assessing species extinction risk."

The team is now investigating the risk from climate change to bird and butterfly populations across Europe and how existing assessments may have underestimated their chances of survival against a changing climate.

The research is published in the journal *Global Change Biology*.

More information: Christopher J. Wheatley et al, Climate change vulnerability for species-Assessing the assessments, *Global Change*

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