

# Climate change study warns 1 in 10 species could face extinction by 2100

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One in 10 species could face extinction by the year 2100 if current climate change impacts continue. This is the result of University of Exeter research, examining studies on the effects of recent climate change on plant and animal species and comparing this with predictions of future declines.

Published in leading journal [Proceedings of the National Academy of Sciences](#) (*PNAS*), the study uses the well-established IUCN Red List for linking [population declines](#) to [extinction risk](#). The research examines nearly 200 predictions of the future [effects of climate change](#) from studies conducted around the world, as well as 130 reports of changes which have already occurred.

The research shows that on average the declines that have already happened match predictions in terms of the relative risk to different species across the world.

Many studies have predicted that future climate change will threaten a range of [plants and animals](#) with extinction. Some of these studies have been treated with caution because of uncertainty about how species will respond to climate change. But widely published research showing how animals and plants are already responding to climate change gave the Exeter team the opportunity to check whether the predictions were wide of the mark. By producing the largest review ever of such studies, they show that predictions have, on average, been accurate, or even slightly too cautious.

Lead author Dr Ilya Maclean of the University of Exeter said: "Our study is a wake-up call for action. The many species that are already declining could become extinct if things continue as they are. It is time to stop using the uncertainties as an excuse for not acting. Our research shows that the harmful effects of climate change are already happening and, if anything, exceed predictions."

The study covered a wide range of species in all types of habitat across the globe. The findings confirm that human-induced climate change is now a threat to global biodiversity.

Co-author Dr Robert Wilson, also of the University of Exeter, said: "By looking at such a range of studies from around the world, we found that the impacts of climate change can be felt everywhere, and among all groups of animals and plants. From birds to worms to marine mammals, from high mountain ranges to jungles and to the oceans, scientists seem to have been right that climate change is a real threat to species.

"We need to act now to prevent threatened species from becoming extinct. This means cutting carbon emissions and protecting species from the other threats they face, such as habitat loss and pollution."

Examples of existing responses to climate change:

Decreased ice cover in the Bering Sea reduced the abundance of bivalve molluscs from about 12 to three per square metre over a very short period of time (1999-2001). These shells are the main food source for species higher up the food chain, such as Spectacled Eider.

Climatic warming and droughts are causing severe declines in once-common amphibian species native to Yellowstone National Park in the United States of America. Between 1992-1993 and 2006- 2008, the number of blotched tiger salamander populations fell by nearly half, the

number of spotted frog populations by 68 per cent, and the number of chorus frog populations by 75 per cent.

In Antarctica, few animals exist on land, but one of the most abundant, a nematode worm living in the soil in dry, cold valleys experienced a 65 per cent decline between 1993 and 2005 as a result of climate change.

Examples of predicted responses to climate change:

On Tenerife, an endemic plant, the Cañadas rockrose has a 74 to 83 per cent chance of going extinct in the next 100 years as a result of [climate change](#) related droughts.

In Madagascar, climate warming is predicted to cause endemic reptiles and amphibians, often found in mountain ranges, to retreat towards the summit of the mounts. With a warming of just two degrees Celsius, well within current projections, three species are predicted to lose all of their habitat.

Birds living in northern Boreal Forests in Europe are expected to decline as a result of global warming. Species such as Dotterel are predicted to decline by 97 per cent by 2100 and [species](#) such as Two-barred Crossbill and Pine Grosbeak could lose their entire range within Fenno-Scandia.

Provided by University of Exeter

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