

## Bird extinction rates far worse than realised

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Every year another species of bird vanishes forever, new research suggests, an extinction rate four times higher than traditional estimates.

Furthermore, the analysis predicts that by the end of the century the rate will accelerate to 10 extinctions per year, meaning the loss of 12% of all 10,000 known bird species.

The work was carried out by Peter Raven, at the Missouri Botanical Garden in St Louis, US, and colleagues. By the year 2100, Raven adds, “we will see total homogenisation – an end to regional diversity. The same few bird species will be seen everywhere, whether they are native or not”.

The researchers argue that the traditional estimate of extinction rate, of one species every four years, does not take into account several crucial factors. These factors include the continual identification of extinct species from skeletal remains – boosting the number of extinct species – and numerous missing species not yet declared extinct.

Additionally, the team notes that extinction-rate estimates are based on data gathered from 1500 to the present day, and because most bird species were first identified between 1850 and 1900, the extinction estimates for the earlier period are underestimated, skewing the data.

### Human impact

So Raven's team compiled the first comprehensive list of all bird species past and present and recalculated the extinction rates. The list is published in the appendices accompanying their paper in the journal *Proceedings of the National Academy of Sciences*.

Before human activities began to impact on bird survival, the extinction rate would have been about one every 100 years: the natural evolution of at least one bird species per century, Raven says.

But the impact of humans has caused a massive hike in the extinction rate in the islands of the Caribbean, Atlantic, Pacific and Indian oceans. This is mainly due to the destruction of the birds' natural habitats for farmland, but also through hunting and the introduction of alien threats, such as cats and avian malaria.

### Easter Island

Polynesian migration and extensive logging, for example, caused the famous extinctions at Easter Island, and the loss of the flightless dodo. And European exploration over the past five centuries has wiped out many of the native birds of Australia and North America, mainly through the introduction of aggressive, invasive species. Global warming will represent a further threat, the researchers add.

The researchers say their calculation method may also be useful in predicting the extinction rates of other animals.

“It is a very conservative model of the extinction rates for other animals, because birds are the [group] best protected through conservation projects – everyone likes birds,” Raven says. “And birds are generally the animals least affected by human activity, especially compared to other animals at risk, such as frogs.”

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