

# First global bird map provides new clues to future extinctions

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The first global survey of bird diversity could play a key role in identifying species most vulnerable to extinction, researchers report today in the journal *PLoS Biology*.

The study reveals a direct link, previously theorised but never proven on a global scale, between the size of the geographical range that a species inhabits and regional variations in extinction risk and biodiversity. The international team hopes this new ability to plot patterns on a global scale will enable conservationists to predict and even slow or reverse future extinctions.

The new data provides the first strong evidence that species' range areas are smallest in the tropics and larger in temperate and polar regions. A smaller range area means that many different types of creature can be accommodated in the same space, explaining why regions such as the Amazon Basin contain such a rich variety of species. Conversely, temperate areas contain a smaller number of different species since large range areas mean fewer species can co-exist.

This in turn has important implications for extinction risks. The team has shown that species with a smaller range size are at a greater risk of extinction, probably due to their increased vulnerability to events that could change or destroy their habitat. A larger range size, on the other hand, means fewer species but larger populations of those that exist, making it less likely that the whole population can be wiped out by events such as tornados. Lead researcher Professor Ian Owens of

Imperial College London's Division of Biology says:

“There are marked variations in biodiversity and extinction rates in different parts of the world, and why this should be has been a big area of research and debate. Theories have pretty much all rested on the core assumption that range size is the key, but until now tests have proved inconclusive due to a lack of global data. This is really a huge step forward in understanding ecology on a world-wide level and hopefully will allow real results in protecting species that we are in danger of losing.”

Researchers have previously thought that range size varied on a latitudinal basis, declining from the largest in the northern hemisphere to the smallest in the southern. The team’s work has revealed a much more complex situation, says Professor Owens, with different patterns emerging globally. He adds:

“We’ve found that the patterns seen in the well-studied northern regions can’t be assumed to apply to the rest of the world - a global perspective is needed. This means that conservation can’t be planned on a one-size-fits-all basis and we will have to properly understand how different micro-ecologies work in order to really make a difference. Our next task is to test whether our findings in birds are replicated in other types of organism.”

Source: Imperial College London

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