

Global map shows new patterns of extinction risk

November 1 2006

The most detailed world map of mammals, birds and amphibians ever produced shows that endangered species from these groups do not inhabit the same geographical areas, says new research published today.

Contrary to conservationists' previous assumptions, the map shows conclusively that geographical areas with a high concentration of endangered species from one group, do not necessarily have high numbers from the others. This new finding has far-reaching implications for conservation planning by governments and NGOs, and their decisions about where to focus conservation spending. These decisions have typically been based on the assumption that investing in an area known to have a high concentration of endangered birds, for example, will mean that large numbers of endangered mammal and amphibian species will also be protected. The new study shows that basing conservation decisions on just one type of animal can be very misleading.

The study, out in today's issue of *Nature*, is the culmination of many decades of work by field biologists and analysts, during which the planet was divided up into 100km x 100km grids, and all mammal, bird and amphibian species within each grid square were counted, using a variety of pre-existing, but never-before combined, records. The result is a comprehensive worldwide map of all species in these groups, on a finer scale than ever before.

Professor Ian Owens, one of the paper's authors from Imperial College

London's Division of Biology, and the Natural Environment Research Council's Centre for Population Biology, said: "For the first time ever this global mapping has divided the planet up into small grid squares to obtain a really detailed picture of biodiversity. By looking at the numbers of endangered mammals, birds and amphibians in these squares, we have been able to see how this real picture varies from assumptions that have previously been made about global biodiversity of endangered species."

Professor Owens adds that this geographical discrepancy in hotspots of endangered species from different groups can be explained by the different factors that threaten mammals, birds and amphibians: "Endangered bird species are often at risk because their habitats are being destroyed. However, different factors entirely may affect mammals such as tigers which are under threat from poachers, and amphibians which are being diminished by diseases brought into their habitat by non-native fish.

"This means that even if a mountainous area has a real problem with endangered amphibians in its creeks and rivers, mammal and bird species in the same area might be flourishing. It's really important not to assume that there are simply a number of hotspots across the globe where everything living there is endangered – the picture is far more complicated, with mammal, bird and amphibian numbers being threatened by different things, in different locations."

Examples of geographical locations in which the distribution of endangered species is different include:

- New Zealand is a hot spot for threatened birds because of the danger posed by introduced rats and cats.
- Mammals are highly threatened across eastern Africa due to hunting and the bush meat trade

- The tropical, rainforest-clad mountains of northern Australia are home to many declining frog species, although the precise causes of these declines often remain enigmatic.

Citation: “The global distribution and conservation of rare and threatened vertebrates,” *Nature*, 2 November, 2006.

Source: Imperial College London

Citation: Global map shows new patterns of extinction risk (2006, November 1) retrieved 23 April 2024 from <https://phys.org/news/2006-11-global-patterns-extinction.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.