

Excursus: Species loss in previously isolated areas

Species Decline

Worldwide, **more than a third of all animal and plant species are threatened by extinction**, many of them in Oceania. A new study shows why this is the case and what role humans play.

The survival of many animal and plant species hangs by a thread. 17,000 of the 45,000 species examined in a recent study are threatened by extinction worldwide. Oceania is suspected of possibly being at the forefront of this development. Habitat destruction and the introduction of non-indigenous species are the main threats to species richness. This is the conclusion of a new large-scale study that summarized and evaluated 24,000 scientific surveys on the state of flora and fauna in the islands of the Pacific Ocean. The team of 14 scientists, who undertook this task, paints a sobering picture: the destruction of the natural habitat of many animal and plant species and the extinction of species are progressing in leaps and bounds.

The term Oceania covers the islands connected by the Pacific Ocean. This area includes countless islands with a total land area of about 1.3 million square kilometers, which are distributed over a sea area of about 70 million square kilometers. A common feature of these land areas grouped under the term Oceania is their great distance from the mainland. This feature is also the reason why Oceania has a largely unique flora and fauna. Long ago, land animals arrived there by sea. Arriving on an oceanic island cut off from the mainland, they adapted to their new environment and developed numerous subspecies, some of them highly curious, that exist nowhere else in the world. For example, on some oceanic islands where there are no large ground-dwelling predators, it is not uncommon to find flightless birds.

Humans endanger species richness

But the species richness of Oceania is in danger. Humans are largely to blame. This region has possibly suffered the greatest species extinction in the world, explains Richard Kingsford, a professor at the University of New South Wales. However, records of animal species in the rest of the world are patchy, making realistic comparisons difficult. If there is no serious change in human behavior toward the environment and organisms, this trend is likely to continue, he said. On the Pacific islands and archipelagos, more than 1200 bird species alone are already considered extinct. Species extinction in itself is not a new phenomenon. What is unknown so far, however, is the speed at which it is progressing worldwide. Overall, the speed has increased at least a thousandfold today compared to the last 60 million years.

In order to have starting points for the fight against species extinction, Kingsford and his colleagues identified the main threats to Oceania's biodiversity when analyzing the 24,000 scientific studies. While climate change is a very important issue, it is by no means the only one, Kingsford explains.

Kingsford.

(FOCUS Online 2015)

The article refers to the article by: Kingsford, R.T., Watson, J.E.M., Lundquist, C.J., Venter, O., Hughes, L., Johnston, E.L., Atherton, J., Gawel, M., Keith, D.A., Mackey, B.G., Morley, C., Possingham, H.P., Raynor, B., Recher, H.F. and Wilson, K.A. (2009), Major conservation policy issues for biodiversity in Oceania. In: Conservation Biology 23: 834-840.

Subject area III
Threat constellations and solutions

Excursus: Species loss in previously isolated areas

Climate change just one problem among many

According to the researchers' findings, this is exacerbated above all by the introduction of alien animal and plant species that, due to a lack of natural enemies, multiply by leaps and bounds and destroy native species. 75 percent of the already extinct terrestrial vertebrates, which include birds, amphibians, reptiles and mammals, owe their fate to newly introduced species. For example, domestic and farm animals introduced from Europe, as well as rats, have now driven many species into a struggle for survival. One example is the fate of the kagu, a flightless bird that naturally lays few eggs due to a lack of natural enemies. However, rats introduced from Europe ate the eggs laid on the ground, causing the kagu population to decline rapidly until the species was acutely threatened by extinction. However, the population of the kagu has now been able to regenerate thanks to the protective measures that have been introduced.



The slightly older [meta-study \(2013\)](#) looks at the situation in Oceania, a "hotspot" of species extinction.

1. In German, describe the **special situation of the ecosystems** in Oceania and Australia.
2. Summarize the argument of Kingsford et al. regarding the **causes of species extinction** or decline in English.

Initial situation

Causes of species decline



Subject area III

Threat constellations and solutions

Excursus: Species loss in previously isolated areas

Climate change just one problem among many

According to the researchers' findings, this is exacerbated above all by the introduction of alien animal and plant species that, due to a lack of natural enemies, multiply by leaps and bounds and destroy native species. 75 percent of the already extinct terrestrial vertebrates, which include birds, amphibians, reptiles and mammals, owe their fate to newly introduced species. For example, domestic and farm animals introduced from Europe, as well as rats, have now driven many species into a struggle for survival. One example is the fate of the kagu, a flightless bird that naturally lays few eggs due to a lack of natural enemies. However, rats introduced from Europe ate the eggs laid on the ground, causing the kagu population to decline rapidly until the species was acutely threatened by extinction. However, the population of the kagu has now been able to regenerate thanks to the protective measures that have been introduced.



The slightly older [meta-study \(2013\)](#) looks at the situation in Oceania, a "hotspot" of species extinction.

1. In German, describe the **special situation of the ecosystems** in Oceania and Australia.
2. Summarize the argument of Kingsford et al. regarding the **causes of species extinction** or decline in English.

Initial situation

Great distance from the mainland, development of its own fauna and flora, colonization from the mainland, adaptation to local conditions, development of subspecies and species, frequent absence of predators.

Causes of species decline

Habitat destruction; in Australia, for example, 50% of forests have been destroyed because of agricultural interests and much of the remaining forest is degraded. Importation of foreign animal and plant species and diseases and pests. Climate change. Exploitation of ecosystems.