

Human environmental effects favor cosmopolitan species over local iconic species

December 4 2018

Human habitat modification is favouring the same species everywhere, while unique species are disappearing, finds a study publishing on December 4 in the open-access journal *PLOS Biology*, led by Tim Newbold at University College London and Andy Purvis at the Natural History Museum in London.

"As humans, we place great value on [animals](#) and plants that are confined to particular locations," says author Tim Newbold. "We travel around the world to see animals like tigers in Asia or rhinoceroses in Africa, and animals and plants are often our national emblems."

But by using data from 81 countries, provided by more than 500 researchers across the world, the authors of the study show that when humans modify a [natural habitat](#)—for farming, or for our towns and cities—animals and plants that are unique to that particular location are lost, and are replaced by others that are common to many places.

The researchers estimated the area inhabited by nearly 20,000 different [species](#) of animals and plants, finding that species occupying a large area tend to increase in places where humans use the land, while those species that occupy a small area are lost. This is important because it means that human actions are favouring the same species everywhere, while the many species that are unique to specific places are disappearing.

"We show around the world that when humans modify habitats, these unique species are consistently lost and are replaced by species that are

found everywhere, such as pigeons in cities and rats in farmland" says Newbold.

The findings are important for efforts to conserve the world's species. They also suggest a disruption to the healthy functioning of ecosystems, which support our natural environment and are critical in our efforts to grow food, since other studies have shown that animals and [plants](#) that occupy small areas also provide distinct and important roles within ecosystems.

In the future, the researchers aim to investigate how climate change may add to the losses of unique species.

More information: Tim Newbold et al, Widespread winners and narrow-ranged losers: Land use homogenizes biodiversity in local assemblages worldwide, *PLOS Biology* (2018). [DOI: 10.1371/journal.pbio.2006841](#)

Provided by Public Library of Science

Citation: Human environmental effects favor cosmopolitan species over local iconic species (2018, December 4) retrieved 23 April 2024 from <https://phys.org/news/2018-12-human-environmental-effects-favor-cosmopolitan.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.