

# How climate change affects animal behavior

October 19 2021

---



The ruddy turnstone (*Arenaria interpres*) is a marine wader bird, here pictured

on a seashore occupied by human settlement at Whitby, UK. Credit: Petri Niemelä

Humans are shaping environments at an accelerating rate. Indeed, one of the most important current topics of research is the capacity of animals to adapt to human-induced environmental change and how that change affects the expression of animal traits.

With the help of data collected on a little over one hundred [animal species](#), researchers from the University of Helsinki and Lancaster University studied which behavioral traits are the most sensitive to human-induced [environmental change](#), and to which human-induced changes in the environment animals respond the most sensitively. From the largest to the smallest, the groups of organisms included in the study were fish, birds, crustaceans and mammals. In addition, insects, amphibians and lizards were represented.

All the behavioral traits included in the study—aggression, activity, boldness, sociability and exploration of their environment—changed markedly due to environmental change brought about by humans.

"The biggest change was seen in the animals' activity in exploring their environment. Animals have a strong response to all forms of environmental change, but climate change engendered the greatest change in animal behavior," says Postdoctoral Researcher Petri Niemelä from the Faculty of Biological and Environmental Sciences, University of Helsinki.

In addition to climate change, the other forms of human-induced environmental change included in the modeling were changes in carbon dioxide concentration and nutrient levels, [alien species](#) and other biotic

changes caused by humans, as well as direct human impact through, for example, urbanization or other human disturbances.

Changes in activity or other behavior can often be the initial change in animals instigated by [climate change](#).

"Behavioral change can serve as a buffer with which animals avoid the immediate negative effects of environmental change. For instance, such change can compensate for low reproductive success or increased mortality caused by environmental change. By changing their behavior, animals can also gain more information on the altered environment."

The study was published as an open-access publication in the international *OIKOS* journal series in September 2021.

**More information:** Rachel L. Gunn et al, Understanding behavioural responses to human-induced rapid environmental change: a meta-analysis, *Oikos* (2021). [DOI: 10.1111/oik.08366](https://doi.org/10.1111/oik.08366)

Provided by University of Helsinki

Citation: How climate change affects animal behavior (2021, October 19) retrieved 26 April 2024 from <https://phys.org/news/2021-10-climate-affects-animal-behavior.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.