

New research uncovers hidden long-term declines in UK earthworms

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A Robin eating an earthworm. Credit: Liz Cutting

British Trust of Ornithology researchers call for better monitoring of soil invertebrates after new research, collating 100 years of data, suggests

significant and previously undetected declines in UK earthworm abundance could have occurred.

These preliminary results will be presented at the British Ecological Society's annual meeting in Edinburgh on Monday 19th December by Professor James Pearce-Higgins, Director of Science at the British Trust of Ornithology (BTO).

Despite the importance of earthworms and other [soil](#) invertebrates for healthy ecosystems and fertile soils, there has historically been a lack of [monitoring](#) of their numbers. To overcome this, BTO researchers collated almost 100 years of scientific studies on soil invertebrate abundance and found evidence consistent with [earthworm](#) populations having declined.

Dr. Ailidh Barnes of the BTO, who led this research, said "Changes in the UK countryside over the last century, such as extensive drainage, [pesticide use](#) and inorganic fertilizer application, are likely to have negatively affected earthworm populations".

Professor Pearce-Higgins said, "Any large-scale decline in soil biodiversity—particularly the loss of earthworms—would sit alongside concerns about 'insectagedon' and the wider biodiversity crisis.

"We need to be concerned about what is happening to biodiversity below the ground in order to protect the biodiversity that we see above ground. We need to look after earthworms."

Professor Pearce-Higgins added: "Thrushes, starlings and many waders that rely on soil invertebrates are in long-term decline, which may partly be linked to long-term changes in their food. These declines are greatest in south-east England where hotter, drier summers may also reduce the availability of earthworms to foraging birds."

To explore changes in earthworm abundance in the absence of long-term monitoring data, the researchers collated data from over 100 historical studies across the UK, spanning almost 100 years. Accounting for variations in methods and study designs, the researchers used these data to see if through time, there was any evidence for changes in earthworm abundance.

Professor Pearce-Higgins said, "Whilst these data do not come from a proper monitoring scheme, our hope is that publishing this work will stimulate others to investigate what is happening to our soil invertebrates and establish proper monitoring. Given their importance, we need to monitor changes in the status of our soil [invertebrates](#) better than we have in the past."

Professor Pearce-Higgins will present the work at the British Ecological Society [annual meeting](#), which will bring together over 1200 ecologists to discuss the latest breakthroughs in ecology. This work is currently unpublished.

Provided by British Ecological Society

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