

New study reveals widespread risk of infectious diseases to wild bees

March 4 2015



Honeybee (*Apis mellifera*) landing on a milk thistle flower (*Silybum marianum*).
Credit: Fir0002/Flagstaffotos/ Wikipedia/GFDL v1.2

Researchers have discovered a network of viruses, which were previously associated with managed honeybees, may now pose a widespread risk to bumblebees in the wild, according to a new study published today (Wednesday 4 March) in the *Journal of Animal Ecology*.

The study revealed multiple interconnected diseases that are threatening several species of bumblebee and the managed honeybee, which are essential pollinators of many agricultural crops and wild flowers.

Previously research had only identified one virus, deformed wing virus, which had most likely spilled over from managed [honeybees](#) into wild bumblebee populations.

Professor Mark Brown, from the Department of Biological Sciences at Royal Holloway, University of London, said: "Our results confirm a recent review of potential threats to pollinators, indicating that so-called honey bee viruses are widespread in wild bees. It is imperative that we take the next step and identify how these viruses are transmitted among honeybees and [wild bees](#), so that we can manage both to reduce their risk of disease."

The research identified five viruses - black queen cell virus, deformed wing virus, acute bee paralysis virus, slow bee paralysis virus and sacbrood virus (all named for their effects in honeybees) from wild bumblebees and managed honeybees at 26 sites across Great Britain. Some of these infection levels were highest in honeybees and for others they were higher in bumblebees. This suggests that some viruses are predominantly spread by honeybees, whilst others rely on wild bumblebees.

Dr Dino McMahon, from Queen's University, Belfast, said: "Our findings are important because they indicate that many viruses can spread easily between pollinator species and, furthermore, that they can reach very high disease levels in wild bumblebees."

Professor Robert Paxton, from Queen's University, Belfast, added: "Our previous research suggested that a key [virus](#) of the honeybee - [deformed wing virus](#) - spills over to infect bumble bees, probably via contact at

flowers. We now find that other viruses may be doing the same. Yet our new findings also highlight just how little we know of bee parasites and the role they play in the decline of pollinators."

More information: The paper 'A sting in the spit: widespread cross-infection of multiple RNA viruses across wild and managed bees' will be published in the *Journal of Animal Ecology* on Wednesday 4 March, 2015. onlinelibrary.wiley.com/journal/1097-4616/earlyview

Provided by Royal Holloway, University of London

Citation: New study reveals widespread risk of infectious diseases to wild bees (2015, March 4) retrieved 26 April 2024 from <https://phys.org/news/2015-03-reveals-widespread-infectious-diseases-wild.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.