**Stinging insects may be spreading due to climate change**

[Home](https://willjarrettdata.com/) > [Articles](https://willjarrettdata.com/articles/) > Stinging insects may be spreading due to climate change | 11/03/2021

Fifteen years ago, Alaska experienced what locals call a “wasp year.”

The population of yellowjackets reportedly exploded to ten times its usual size. School children were kept indoors to avoid being stung. Before long, the state had recorded its first ever deaths caused by an allergic reaction to insects.

The year was an outlier caused by a perfect storm of factors like food availability, precipitation, and temperature that allowed the wasps to thrive. But a [new research review](https://pubmed.ncbi.nlm.nih.gov/33228875/) suggests that this kind of population growth could become increasingly common as climate change warms the planet, making habitats further from the equator more suitable for yellowjackets and other stinging insects. This growth in territory is likely to push insects into more contact with humans and could lead to a rise in potentially deadly allergic reactions.

Dr. Jeffrey Demain, the review’s author and a specialist in allergies and immunology, first began studying the effect of climate change on stinging insects after the “wasp year” of 2006.

“We started looking for people seeking medical care for an insect sting,” he said. He soon found a pattern in the previous seven years of insect sting data. There was a significant rise in insect stings that grew more pronounced the further north he looked – where winter temperatures had risen the most.

Dr. Demain and his fellow researchers arrived at the tentative conclusion that higher-than-average temperatures had allowed wasp queens to survive the winter better than usual. However, it was difficult to prove with only their medical data that climate change was a driving factor.

Now, his new review has amassed dozens of studies that point to a similar trend in a wide range of stinging insects: as global temperatures rise, they are spreading northwards.

Fire ants, an invasive species responsible for 95% of recorded ant bites in the US, are predicted to expand their range 150km northwards by 2050. Paper wasps have already moved into historically cooler regions, and a European study shows that a majority of butterfly species – some with venomous caterpillar larvae – have been expanding northward as well.

Dr. Demain has seen evidence of this shift in his patients, with cases of caterpillar stings emerging in just the last ten years. “Natives were picking berries out in the fields and they were all getting these terrible rashes,” he said. “Some of them were getting sick. You look at the rash and you can see little railroad spikes – a pattern. I saw that and immediately said, that’s *Lepidoptera* [caterpillars].”

Insects tend to have a set temperature range they can live and breed in most comfortably. As temperatures rise, that comfortable range has been shifting away from the equator. The rising heat may also be altering northern habitats in ways that indirectly benefit the insects. For example, woody plants have started to grow in the tundra where until recently it was too cold, and those plants could supply yellowjackets with the wood pulp they need to build their nests.

Not all species are being impacted in the same way, though. Honeybees and bumblebees both appear to be adversely affected by rising temperatures.

“Bumblebees are not moving north. It’s a bit of a mystery,” said Alaskan entomologist Derek Sikes. “They are disappearing from the south, so their range is getting smaller, but for some reason they are not moving northward.” The inability of bees to move with the changing climate is ecologically troubling because of their key role as pollinators.

Sikes noted that while the evidence in the research review is compelling, more long-term studies would help to prove the role of climate change, as insect populations have significant natural variation year to year even without climate change.

According to environmental health expert Kris Ebi, public education campaigns will be essential to make sure that people are ready to deal with this escalating problem.

“You don’t want children who are allergic to be stung by these insects because they didn’t know they had to pay attention to them,” she said. Having not grown up around the newly arrived insects, she said, parents might be unfamiliar with them and therefore not tell their children to keep away.

“There also needs to be an awareness from our healthcare providers,” she added. “If they don’t know that certain insect stings are a possibility, they may misdiagnose somebody.”

Dr. Demain is hoping to follow up his review with an investigation of the past twenty years of Alaskan sting data to get a more complete picture of changes in the state. In the meantime, he fully expects sting injuries to keep climbing as the world heats up: “This is going to continue to be a problem.”

—

Photo credit [Mansado Louis](https://unsplash.com/photos/u_BCY49ui_w)