

Scientists stunned by vast insect migration

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Tens of millions of migratory insects cross at least 100 km of open sea to reach Cyprus on the way to mainland Europe, new research shows.

In just over one month, scientists recorded 39 million migratory [insects](#) arriving at the tip of the Karpaz peninsula in north-east Cyprus.

"I had never seen anything like it," said lead researcher Will Hawkes, a Ph.D. student from the Center of Ecology and Conservation on University of Exeter's Penryn Campus in Cornwall.

"The sky was dark with insects and we were being pelted by migratory flies, to the extent that we had to shelter behind the car door."

Dr. Karl Wotton, also from the University of Exeter, added that they "had a hunch that this would be an important site for insect migration but we were blown away by the intensity of the movement, which reached a rate of nearly 6,000 insects per meter per minute."

The researchers also examined [satellite imagery](#) to assess the amount of winter vegetation growth and identified the potential origins for the insects in Syria, Iraq and Saudi Arabia.

"For me, it's not just the numbers that were impressive, but the sheer diversity of insects migrating," said Hawkes.

These included huge numbers of Vagrant Emperor dragonflies and Painted Lady butterflies, but the vast majority (86%) were types of flies.

"Knowing what insects are migrating is really important," said Hawkes.

"Without this information, we cannot begin to understand what effects their movements have on the planet."

The arrival in Cyprus (Europe) of hoverflies carrying orchid pollen from Asia is evidence of "cross-continental pollination" Hawkes added.

This long-distance transfer of genes by migrant insects allows plants to maintain a diverse gene pool and potentially to mitigate changes in [environmental conditions](#).

"These migratory insects are really important at a local ecological level too," said Hawkes.

"We saw ants eating Painted Lady butterflies, and even migratory locusts and butterflies being eaten by turtles."

However, insects globally are under threat.

"Migratory insects are vulnerable to [habitat loss](#) beyond the boundaries of one country," Hawkes said.

"Human activity and climate breakdown could affect the [migration routes](#) and ranges of these insect species, so we need to take a more global, holistic view of conservation.

"If we all take an interest in these remarkable little creatures, we can protect them and reap the rewards for doing so."

The research was published in *Ecography*.

More information: Will L. S. Hawkes et al, Huge spring migrations of insects from the Middle East to Europe: quantifying the migratory assemblage and ecosystem services, *Ecography* (2022). [DOI: 10.1111/ecog.06288](#)

Provided by University of Exeter

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