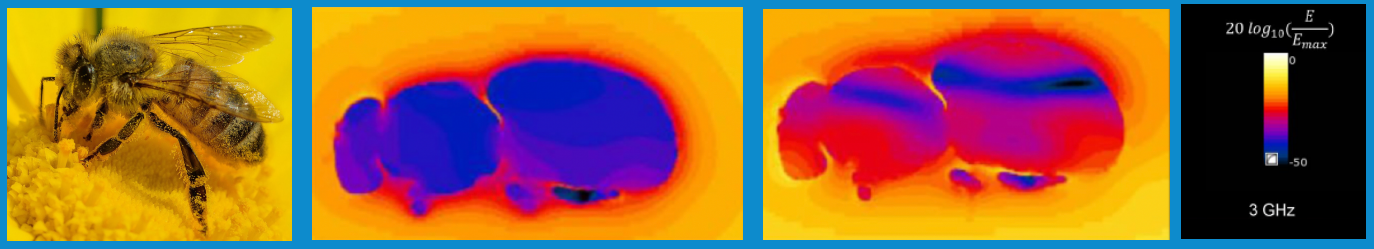
# BEES AND INSECTS ARE UNIQUELY VULNERABLE

## Research Finds Higher Exposures into Insects From 5G's Higher Wireless Frequencies Even When the Power Remains The Same




Honeybee | Exposure at 2 GHz | Exposure at 24 GHz (5G)

Lighter colors represent higher exposures. Images are from wireless frequency exposure simulations in the published study *"Exposure of Insects to Radio-Frequency Electromagnetic Fields from 2 to 120 GHz"* published in Scientific Reports by Thielens et al. (2018).

### Higher Frequency = Higher Exposures to Insects

New technologies such as 5G will run on higher frequencies from 24 to 40 GHz. Published studies have found that exposure to the higher frequencies of 5G and new networks will result in significantly higher RF absorption into the bodies of bees and insects. The higher frequency EMF waves resonate with the smaller size of the insect to increase exposures, even when the power levels are the same.

### A Regulatory Gap

Despite research reviews finding the majority of studies show effects to insects, environmental agencies have no research evaluation, EMF monitoring, wildlife impact surveillance, or risk-assessment process in place to ensure current or future wireless radiation and EMF levels are safe for pollinators and wildlife.

### Impacts To Habitat

Numerous studies have found effects to plants from non-ionizing EMF, including adverse biochemical changes and direct damage to tree canopy. The impacts to both the physical health of the insect as well as their habitat add to the numerous environmental stressors faced by bees and pollinators.

***"Our study provides conclusive evidence of detrimental impacts of EMF on honeybee's pollination behavior, leading to negative effects on plant community."***

— Molina-Montenegro et al. in the study "Electromagnetic fields disrupt the pollination service by honeybees" published in *Science Advances* (2023)

# RESEARCH ON INSECTS, WIRELESS AND EMFS

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## Approaches and Recommendations


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