

LANDSCAPE MANAGEMENT CAN FOSTER POLLINATOR RICHNESS IN FRAGMENTED HIGH-VALUE HABITATS

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Background

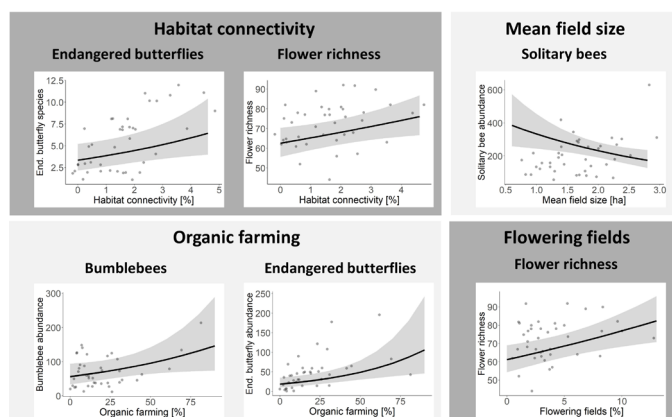
Biodiversity is in global decline, with up to two million species at risk of extinction due to habitat loss, intensive farming, pollution, and climate change. To explore solutions, researchers from Julius-Maximilians-Universität Würzburg studied how landscape and farming practices affect insect diversity in calcareous grasslands of northern Bavaria.

Objective





The objective of the study was to investigate how local habitat quality, agricultural practices, and landscape structure influence the diversity and abundance of wild pollinators in calcareous grasslands. The goal was to identify practical measures to support pollinator conservation in human-altered landscapes.

Results

-  Larger grassland area correlated strongly with greater species richness of solitary bees and butterflies.
-  A 1-hectare increase in the average size of adjacent arable fields reduced bee abundance by one-third.
-  A 10% increase in organic farming of surrounding arable land led to 10% more bumblebees, as well as 20% more endangered butterflies on protected sites.



Key messages

-  Habitat size and quality are crucial for conserving pollinator diversity.
-  Smaller arable fields and organic farming positively affect biodiversity in nearby nature conservation areas.
-  Improving habitat quality and landscape management supports endangered species and boosts flower and nesting site abundance.
-  Urgent action is needed to slow species extinction and secure pollinator diversity in human-altered environments.

Sources

Biegerl, C., Holzschuh, A., Tanner, B., Sponsler, D., Krauss, J., Zhang, J., & Steffan-Dewenter, I. (2025). Landscape management can foster pollinator richness in fragmented high-value habitats. *Proceedings of the Royal Society B: Biological Sciences*, 292(2040), 20242686. <https://doi.org/10.1098/rspb.2024.2686>.

