VOODOO
Viral eco-evolutionary dynamics of wild and domestic pollinators under global change

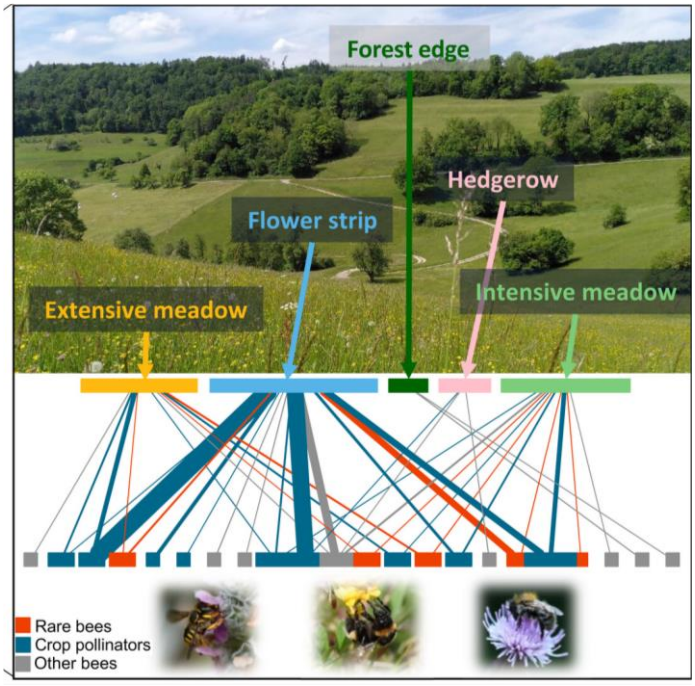
https://voodoo-project.eu/

Wild bee communities are sustained by a diversity of semi-natural habitat in agricultural landscapes

INTRODUCTION: Pollinators face multiple threats, including from land-uses such as conventional intensive agriculture that reduce the diversity of semi-natural habitat and pollen and nectar sources in the landscape supporting their populations and communities. Restoring different semi-natural habitat types to agricultural landscapes is one potential conservation and management option to reduce this pressure on pollinators. In 25 landscapes in Switzerland, we analysed bee species richness and species-habitat networks to examine the relative contribution of semi-natural habitats (meadows, flower strips, hedgerows and forest edges) to wild bee communities in agricultural landscapes.

KEY RESULTS:

- Habitat types varied in their importance for wild bees throughout the season.
- Extensively managed meadows supported the most bee species, including rare (red-listed) species and habitat specialists. Sown flower strips were most important to bee richness later in the season (July).
- Crop pollinating bees benefited from both extensively managed meadows and flower strips.
- Each of the five habitat types harboured a relatively unique wild bee community.
- A high local flower diversity in the habitats was more important than the surrounding landscape for high wild bee diversity and abundance.



IMPLICATIONS AND MANAGEMENT RECOMMENDATIONS:

- Maintaining or increasing habitats diversity in agricultural landscapes to provide diverse and complementary flower resources over the season is essential for conserving diverse wild bee communities.
- Extensification of meadow management (e.g., no fertilizer, late cutting) can help to safeguard pollinators, including rare and specialist species.
- Increasing the number and connectivity of habitats in arable-cropped landscapes may improve bee species exchanges and community resilience.

Maurer, C., Sutter, L., Martínez-Núñez, C., Pellissier, L., & Albrecht, M. (2022). Different types of semi-natural habitat are required to sustain diverse wild bee communities across agricultural landscapes. *Journal of Applied Ecology*, 59, 2604–2615. https://doi.org/10.1111/1365-2664.14260

Blog post: https://appliedecologistsblog.com/2023/04/12/corina-maurer-different-types-of-semi-natural-habitat-are-required-to-sustain-diverse-wild-bee-communities-across-agricultural-landscapes/

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