

Wild bee diversity buffering impacts of climate change on the delivery of crop pollination services?



Background

Wild bees are an important component of agro-ecosystems' biodiversity and provide vital pollination services to wild plants. Together with honeybees and other managed bees, they also play an important role as pollinators of many crops. Many wild bee species are not only considered to be more efficient pollinators of some crops, moreover crop pollination may also benefit from the broader climatic niches of wild bees, visiting crop flowers also under weather conditions not suitable for honeybees, for example. Overall, more diverse pollinator communities are expected to cover a broader climatic niche and thereby may provide critical insurance functions under projected climate change scenarios. However, there is scarce empirical evidence for this hypothesis.

Possible research questions

- What is the contribution of wild bees and other wild pollinators to crop pollination services under variable climatic conditions?
- Do diverse pollinator communities stabilize crop pollination services?
- Which are the key wild pollinator species providing such insurance functions, and under which conditions?

Scientific fields

Biodiversity and ecosystem functioning, climate change, ecosystem services, community ecology, agro-ecology, wild bee ecology

Methods

- Field work measuring foraging activities and crop flower visitation of wild and managed bees and other crop pollinators under variable weather conditions; potentially assess consequences on pollination services and crop yield
- Data analysis using R
- Writing thesis

Time:

Starting date: winter 2017 or winter/spring 2018

Duration: flexible, ideally 6-12 month

Contact:

Dr. Matthias Albrecht matthias.albrecht@agroscope.admin.ch

Dr. Louis Sutter louis.sutter@agroscope.admin.ch

Tel.: +41 (0)58 468 74 13;

Tel.: +41 (0)58 468 74 73