

A Living Lab approach to enhance local pollinator conservation across urban and agricultural landscapes

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Biodiversity supports essential ecosystem services, with pollination playing a crucial role in both natural ecosystems and agricultural production. However, pollinators are increasingly threatened by multiple factors and are consequently declining, making ecological restoration and habitat management at local and landscape scales widely recognized strategies to support pollinator communities and the services they provide.

To tailor ecological restoration efforts in a densely urbanized region, the Lombardy Living Lab was established as a collaborative network connecting protected and recreational green areas, community allotments, farms and society representatives in and around Milan. Developed within the EU Horizon projects Butterfly and ProPollSoil, the Living Lab provides a unique opportunity to evaluate how management and restoration practices affect pollinators and the ecosystem services they support across urban and agricultural landscapes.

In 2026, to establish a baseline of pollinator and flowering plant diversity in relation to ecosystem services, we conducted surveys in cherry, blueberry and apple orchards. We identified the pollinator assemblages most relevant to crop pollination and yield across different landscapes and farm environments. First results indicate that pollinator communities differ among crop species and are influenced by co-flowering wild plants. Moreover, we investigated the role of pollinators throughout the entire cherry supply chain, confirming its strong dependence on insect pollination and emphasizing the need for targeted pollinator support measures.

To further assess how habitat enhancement actions (reforestation and flower strips) influence pollinator diversity, we investigated flower-visiting and ground-nesting pollinators across the Living Lab. Preliminary findings reveal strong differences between sites with enhanced habitats and those without, underscoring the importance of habitat quality and resource availability for pollinator conservation.

These results provide a baseline for developing actions aimed at reversing pollinator decline while increasing awareness of the fundamental role pollinators play in biodiversity conservation, ecosystem functioning and sustainable food production.