

Lorenzo Corsi, Simone Meacci, Nicola Butani, Matteo Pacella, Lara Lucchetti, Simona Casavecchia, Paola Riolo

Nunzio Isidoro, Sara Ruschioni

Department of Agricultural, Food and Environmental Sciences, Polytechnic University of Marche, via Brecce Bianche, 60131 Ancona, Italy.

Pollinators, particularly wild bees (Apoidea), play a crucial role in maintaining biodiversity and ensuring ecosystem resilience. However, their populations are under threat due to habitat fragmentation, intensive agriculture, and climate change. The research aims to investigate the relationship between native flora and Apoidea fauna in the Monte Conero Regional Natural Park (Ancona, Italy), a biodiversity hotspot with a diverse range of habitats. Despite their ecological importance, wild bee populations are declining due to habitat loss and changes in land use. Understanding how different habitat characteristics influence wild bee diversity and abundance is essential for developing effective conservation strategies. This study focuses on how habitat variability, including vegetation type, solar exposure, and proximity to the sea, affects Apoidea diversity in the Monte Conero area. Standardized entomological sampling techniques, such as pan traps, were used to monitor wild bee diversity and abundance across seven different sites within the park. Each site varies in solar exposure, distance from the sea, and vegetation composition. Additionally, floral resource availability and its attractiveness to pollinators were assessed. The study identified 35 different wild bee species across the seven monitored sites. The diversity of wild bees was influenced by habitat characteristics, with variations in solar exposure and vegetation type playing a significant role. These results highlight the importance of maintaining floral diversity and habitat heterogeneity for wild bee conservation. The findings provide essential data for developing targeted conservation strategies, such as promoting pollinator-friendly agricultural practices and restoring degraded habitats through the reintroduction of native plant species. Understanding the relationship between floral resources and pollinator communities can inform sustainable land management policies, benefiting both wild and managed bee populations. The study underscores the need for integrated approaches to habitat restoration, combining scientific research with community engagement and policy-making to safeguard pollinators and the essential ecosystem services they provide.