
Grazing practices and pollinator preservation: insights from Causse Méjean

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Résumé

Pollinators, particularly bees, are essential for the ecological function of pollination, which is crucial for maintaining healthy ecosystems. They are impacted by the ongoing sixth mass extinction, highlighting the critical need for their conservation. Protecting open habitats from urbanization, pesticide use, and intensive agriculture is vital for their survival, as these areas provide necessary floral resources and nesting sites.

Large herbivores play a significant role in maintaining open agroecosystems by consuming primary production. Their grazing habits facilitate the migration of many floral species across large distances. However, these herbivores faced drastic declines in populations and extinctions from the end of the Pleistocene to the Holocene (50,000 to 7,000 years ago), closely associated with the spread of humans across the continents.

Domestic herbivores have historically maintained the openness of ecosystems through grazing, a practice that remains culturally important in many societies. The dry grasslands of the high limestone plateaus in southern France, called "Causses," known both for their richness in flora and their extensive grazing by sheep, horses, goats, and cattle. In this study in the National Park of Cevennes, we explore the impact of grazing on wild bee communities and

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their floral resources by analyzing bee-plant interaction networks under four conditions on Causse Méjean: grazing by semi-wild Przewalski horses, by domestic horses, or by sheep, and ungrazed control areas.

Our findings reveal that equine-grazed plots support more diverse floral and bee communities, although the structural integrity of bee-plant interaction networks remains similar across all conditions. These results provide a deeper understanding of the relationships between different grazing practices and the structure of associated pollinator communities. Looking ahead, the conservation of pollinators can benefit from integrating grazing practices into modern conservation strategies. By promoting diverse grazing regimes, we can enhance floral diversity and support robust pollinator networks. Future research should focus on long-term monitoring to better understand the dynamics between grazing practices, floral resources, and pollinator health. This approach can contribute to more resilient agroecosystems capable of withstanding environmental changes.

Mots-Clés: Pollinator conservation, Biodiversity management, Grazing, Wild bees, Pollination networks