PA122

# Uniqueness matters: patterns of α and β-diversity highlight conservation priorities for plant communities in Italian agricultural landscapes

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Agricultural landscapes can host a diversified mosaic of different ecosystems and habitat types, each supporting specific plant communities.
Though it is acknowledged that habitat diversification is crucial for the maintenance of a high farmland biodiversity, there is still lack of quantitative information on the contribution of different plant community types to biodiversity in agricultural landscapes.
Here, we aimed at highlighting the conservation priorities for the plant communities of different ecosystems across Italian agricultural landscapes through an analysis of their contribution to biodiversity.

Study areas
0   250   500 km
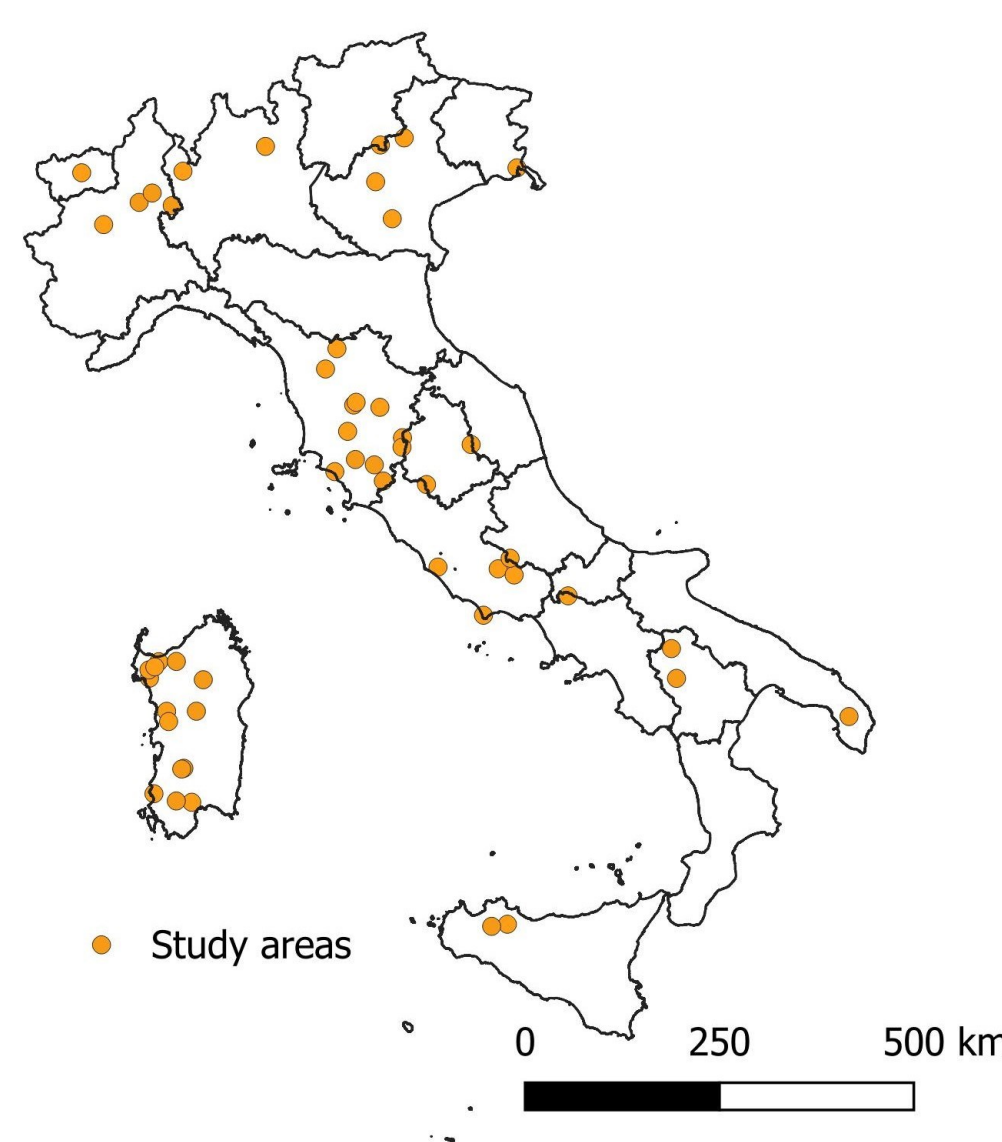
51 circular study areas of 1 km radius.

Vegetation sampling in croplands, forests, grasslands, shrublands, wetlands: square plots of 25 m² size.

We compared the five ecosystem types in terms of plant community α-diversity, β-diversity, and species composition using analysis of variance and Indicator Species Analysis (INSPAN).
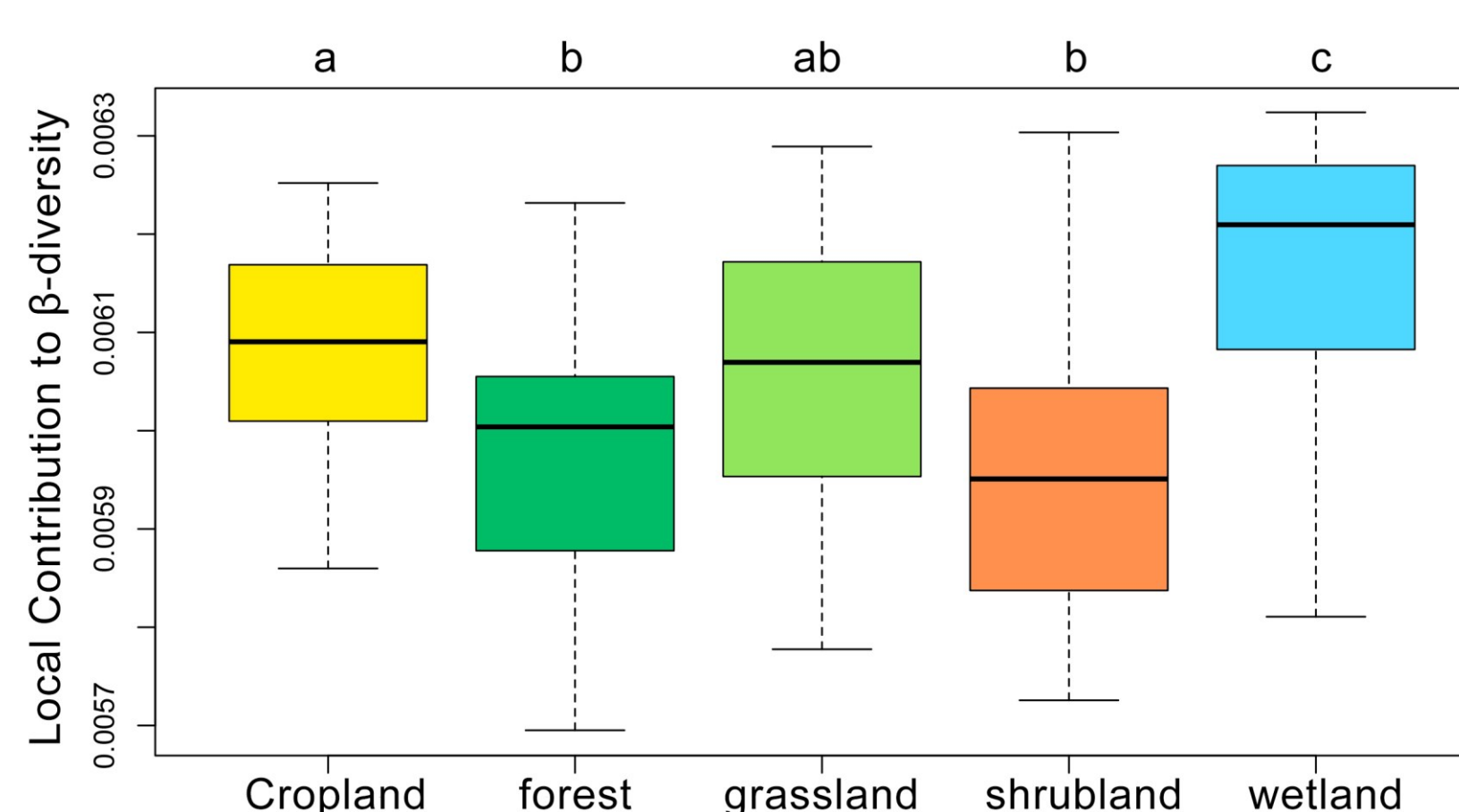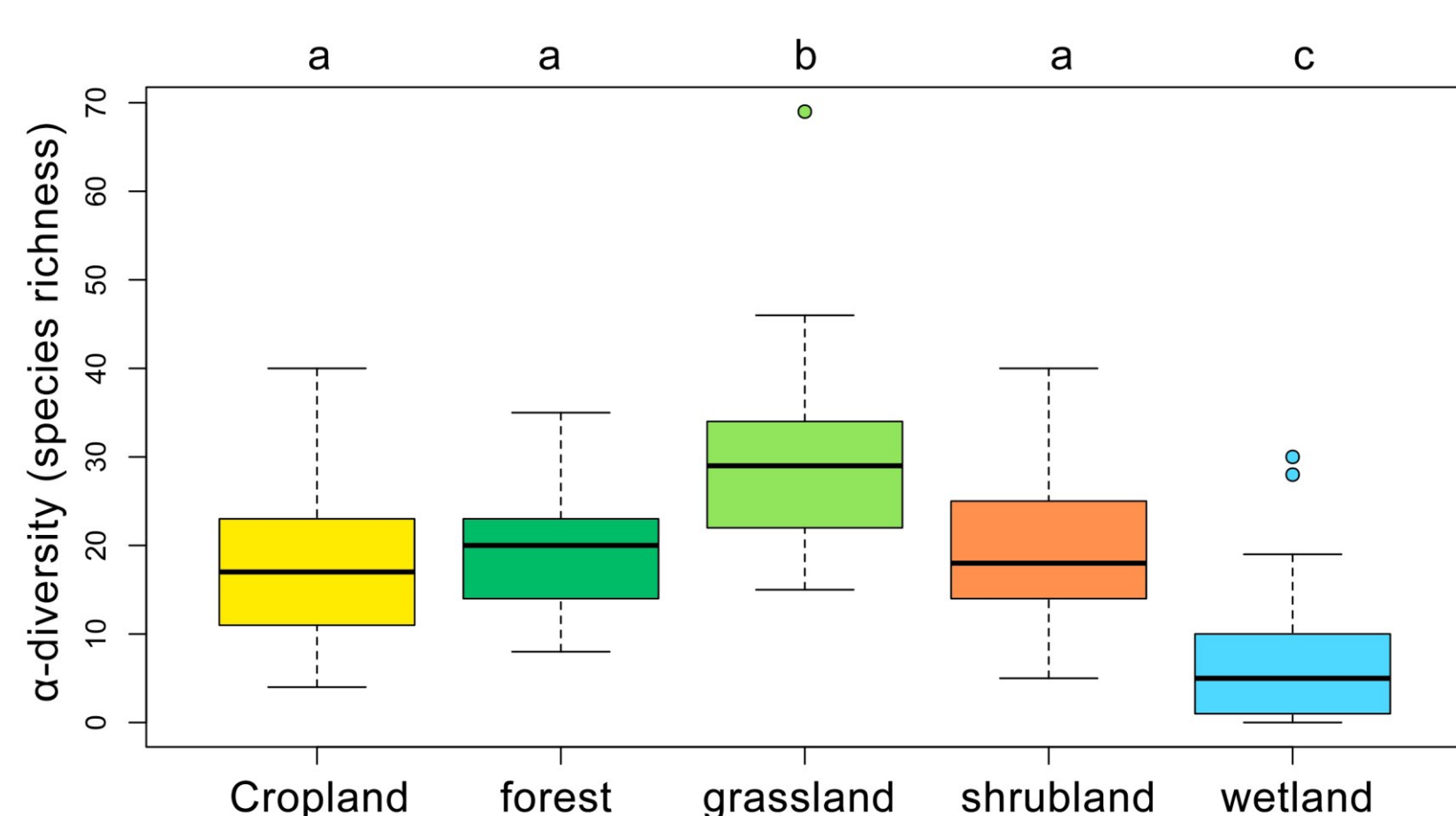
Grassland plant communities were the species-richest and wetland plant communities were the species-poorest. By contrast, the latter had the highest Local Contribution to Beta Diversity due to their uniqueness in species composition.

Species	SCBD
Phragmites australis	0.024371602
Prunus spinosa	0.021952752
Rubus ulmifolius	0.019882528
Myriophyllum spicatum	0.018280297
Cornus sanguinea	0.014677318
Quercus cerris	0.013944897
Quercus pubescens	0.013223803
Lemna minor	0.012652517
Crataegus monogyna	0.011065955
Quercus ilex	0.010151648
Acer campestre	0.00973291
Cytisus villosus	0.009526767
Pistacia lentiscus	0.009476622

Wetland species, shrubs, and trees gave the highest contribution to β-diversity.
All the ecosystem types differed from one another in plant community species composition based on PERMANOVA, and they hosted distinctive species based on INSPAN.

Top indicator species
Cropland: *Papaver rhoeas*
Shrubland: *Prunus spinosa*
Forest: *Acer campestre*
Grassland: *Dactylis glomerata*
Wetland: *Phragmites australis*

- Wetlands hold the highest conservation priority for plant diversity in Italian agricultural landscapes due to their uniqueness
- Each studied ecosystem is important for the conservation of certain plant species
- To maintain high levels of vascular plant diversity, it is necessary to maintain diversified agricultural landscapes that include natural, semi-natural, and anthropogenic ecosystems