# Is habitat connectivity good for biodiversity? Recent progresses on an ongoing debate

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**Résumé**

Habitat loss and fragmentation are key drivers of biodiversity decline worldwide. Understanding the ecological responses of organisms to habitat loss and fragmentation is therefore essential for designing effective management plans in fragmented, human-dominated landscapes. While the study of habitat fragmentation has been at the forefront of ecological research for decades, designing landscapes for an effective conservation of biodiversity remains a subject of ongoing debates. While it is recognized that the greater the amount of habitat in a landscape, and the larger the habitat patches, the more diverse the associated communities; the effects of the spatial arrangement of habitat areas, their fragmentation into small discontinuous patches and the adjacent spaces that form the landscape matrix still remain controversial. In particular, there is a gap between the phenomenological knowledge we have on the influence of the matrix on communities (a more resistant landscape matrix is deleterious to biodiversity in habitat patches) and the little mechanistic understanding we have of the processes underlying these effects. In the SCALED project, we propose to tackle this burning issue by studying ecological processes in varied landscape contexts, with both simple and more complex landscape designs. By approaching these questions with diverse study systems, we aim to reach generalizable results. These will advance our understanding of habitat fragmentation/connectivity effects on biodiversity and help us move towards theoretical results better able to meet the current needs of spatially explicit conservation biology.

**Mots-Clés:** habitat loss, habitat fragmentation, habitat amount hypothesis, landscape ecology, experimental landscapes

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