
Insect pollinator communities under changing land-use in tropical landscapes: implications for agricultural management in Indonesia

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Summary

The destruction of rainforests can affect many ecosystem services, e.g. pollination services for wild and crop plants in landscapes with high proportion of natural habitats. We discuss evidence of the impact of landuse change toward insect pollinator communities and pollination based in the tropics, with an emphasis on case-studies from Indonesia. Some studies showed that species richness of flower visiting bees, pollination, and fruit set were found to be negatively correlated with increasing rainforest isolation and land-use intensity. However, others demonstrated an opposite pattern. Species composition changes significantly between habitat types, which may be relevant in the context of environmental changes as species composition can be an important variable to ensure pollination services and fruit set.

Keywords: pollination, tropical landscape, Indonesia, land use change, agroecosystem, habitat fragmentation

1 Introduction

The tropical landscape, with its vast forests, has traditionally been associated with sources of diversity. This is true for many groups of insects, such as ants (Brühl 2001), moths (Beck and Schulze 2000; Beck et al. 2002), butterflies