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DO FOREST STRUCTURE AND LANDSCAPES FACTORS AFFECT FLOWER VISITING BEES IN FOREST FRAGMENTS?

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The loss and fragmentation of natural environments cause changes that affect ecological processes such as pollination at different scales. Bees are the most important pollinating insects and they are sensible to landscape modification. Inside forest fragments, vegetation structure and availability of floral and nesting resources affect bee visitation rates to flowering plants at the local scale. The objective of this study was to understand how the landscape factors (forest proportion, isolation and landscape heterogeneity) and local characteristics (vegetation structure, flower richness and dead trunk density) affect the richness and abundance of floral visiting bees in fragments of Atlantic Forest, São Paulo State, Brazil. In 39 hexagonal plots within forest fragments we actively sampled bees that visited flowers and measured flower richness, number of dead trunks, and vegetation structure. Our initial hypothesis was that landscape factors (within a 1km radius) influence the persistence of bee species, while local factors within the fragments would be the most influential on bee abundance. Our results for bee abundance corroborated with the suggested hypothesis. For bee richness, we verified that additionally to landscape factors, vegetation structure also influences the persistence of bees. The vegetation structure at the local scale was relevant to bees by provisioning them with floral and nesting resources. Combined to vegetation structure bee richness is benefited in landscapes with low forest proportion and low isolation between the forest fragments. This shows the relationships between scales, so distribution and configuration of forests interact with the interior forest conditions to provide support to bee communities. It is necessary to enhance forest quality and reduce the distance between forest fragments to promote connected landscapes with forest capable of supporting bee communities and keep bee flow throughout landscapes.

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