Meta-analysis of anthropogenic habitat disturbance effects on animal-mediated seed dispersal

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Resumen

Anthropogenic habitat disturbance is a strong biodiversity change driver that compromises not only the species persistence but also the ecological interactions in which they are involved. Even though seed dispersal is a key interaction involved in the recruitment of many tree species and in consequence critical for biodiversity maintenance, studies assessing the effect of different anthropogenic disturbance drivers on this interaction have not been performed under a meta-analytical framework. We assessed the way habitat fragmentation and degradation processes affect species diversity (abundance and species richness) and interaction rates (i.e., fruit removal and visitation rates) of different groups of seed-disperser species at a global scale. We obtained 163 case studies from 37 articles. Results indicate that habitat degradation had a negative effect on seed-disperser animal diversity, whereas habitat fragmentation had a negative effect on interaction rates. Birds and insects were more sensitive in terms of their diversity, whereas mammals showed a negative effect on interaction rates. Regarding habitat, both fragmentation and degradation had a negative effect on seed-disperser animal diversity only in temperate habitats, and negative effects on interaction rates in tropical and temperate habitats. Our results indicate that the impact of human disturbance on seed-disperser species and interactions is not homogeneous. On the contrary, the magnitude of effects seems to be dependent on the type of disturbance, taxonomic group under assessment, and geographical region where the human impact occurs.

Palabras clave

Palabras clave de autor:bats; birds; habitat degradation; habitat fragmentation; insects; regeneration
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