

THE ROLE OF FRUGIVORES TRAITS AND MOVEMENTS IN FOREST RESTORATION IN FRAGMENTED LANDSCAPES

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Abstract

Forest restoration can mitigate biodiversity loss and climate change. Frugivorous facilitate restoration by bringing seeds to restoration areas. However, the species contribution. We studied seed rain in the Atlantic Forest, Brazil, examining bird diet and movement preferences. Using spatially-explicit individual-based models with frugivory interactions, bird movements and seed retention times data, we simulated seed rain in 10 landscapes along a fragmentation gradient (9 - 69% forest cover). Birds' contribution to seed rain varied with traits and fragmentation. Small birds dispersed more seeds, but with lower carbon storage potential, while large birds dispersed larger seeds with greater carbon storage potential. Landscapes with > 38% forest cover and < 112 meters between fragments maintained effective seed dispersal, avoiding the need for active regeneration. By recognizing animals' role in forest restoration, we aim to influence restoration and climate change mitigation policies, to go beyond carbon sequestration goals to counter current species extinction rates.

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