

## Animals are a powerful driver of forest recovery

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Animals play a key role in forest <u>restoration</u> through seed dispersal, according to a new study led by <u>Max-Planck-Gesellschaft</u>. The researchers determined that animals can rapidly restore plant diversity in degraded forests.

"The recovery of forest cover in abandoned farmland or degraded landscapes is important, but understanding which ecological interactions reestablish during restoration and their speed of recovery can be equally important," wrote the study authors.

"Ecological interactions are ultimately responsible for the maintenance of biodiversity, particularly in tropical ecosystems, and monitoring change in species interactions over time can help practitioners evaluate the functioning and integrity of restoration projects

The experts examined regenerating forests in central Panama that had been abandoned decades earlier.

"In this study, we use a unique long-term dataset from a secondary forest chronosequence in central Panama that spans more than 100 years of regeneration to describe how interactions between plants and dispersers recover during passive restoration (i.e. natural regeneration) in a well preserved landscape," wrote the researchers.

"While most forest regeneration and restoration projects across the tropics have described the first 50 years of regrowth, only a handful span more than a century of regeneration, providing rare longitudinal data to evaluate the role of seed dispersal by animals during restoration."

The analysis confirmed the vital role of animals in forest restoration. By carrying a variety of seeds into deforested areas, animals facilitate the recovery of tree species diversity and abundance.

"Animals are our greatest allies in reforestation," said study senior author Daisy Dent. "Our study prompts a rethink of reforestation efforts to be about more than just establishing plant communities."

The researchers noted that animals can be encouraged to colonize regenerating forests by reducing hunting. "We show that considering the wider ecosystem, as well as features of the landscape, improves restoration efforts," said study first author Sergio Estrada-Villegas.

Ultimately, the researchers found that young regenerating forests were made up of trees dispersed by small birds. Then, as they aged, the trees were dispersed by more large birds.

However, the experts were surprised to discover that the majority of plants were dispersed by terrestrial mammals across forests of all ages.

"This result is quite unusual for post-agricultural regenerating forests," said Dent. "It is likely that the presence of large tracts of preserved forests near our secondary stands, coupled with low hunting, has allowed the mammal populations to thrive and to bring an influx of seeds from neighboring patches."