

# Effect of Agriculture on Local Biodiversity in the Tropics: A Meta-analysis

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**Abstract:** Given the increasing human population trends and resource needs, land-use conversion to meet these needs is a growing concern for biodiversity conservation and policy. The tropics undergo the fastest rate of land conversion despite containing some of the most biodiverse regions in the world. Here I investigated the effects of land use change and intensity, human population density and distance to the nearest settlement on species richness (Chao 1 estimator) in the tropics using linear mixed effects models. In addition, agricultural residency time was estimated and species richness was projected into four different land-use change scenarios developed for the Intergovernmental Panel on Climate Change. Land-use and intensity were found to have the greatest effect on species richness, causing a decline as use intensity increased. The residency time was estimated to be a minimum of 17 years overall, above current estimates. Projection models indicated that scenarios where more primary forest is converted to cropland result in the greatest loss of species richness. Combined, these results offer useful tools to aid in producing conservation policy in the future.

## References

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