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FragSAD: A database of diversity and species abundance distributions from habitat fragments

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Abstract

Habitat destruction is the single greatest anthropogenic threat to biodiversity. Decades of research on this issue have led to the accumulation of hundreds of data sets comparing species assemblages in larger, intact, habitats to smaller, more fragmented, habitats. Despite this, little synthesis or consensus has been achieved, primarily because of non-standardized sampling methodology and analyses of notoriously scale-dependent response variables (i.e., species richness). To be able to compare and contrast the results of habitat fragmentation on species' assemblages, it is necessary to have the underlying data on species abundances and sampling intensity, so that standardization can be achieved. To accomplish this, we systematically searched the literature for studies where abundances of species in assemblages (of any taxa) were sampled from many habitat patches that varied in size. From these, we extracted data from several studies, and contacted authors of studies where appropriate data were collected but not published, giving us 117 studies that compared species assemblages among habitat fragments that varied in area. Less than half (41) of studies came from tropical forests of Central and South America, but there were many studies from temperate forests and grasslands from all continents except Antarctica. Fifty-four of the studies were on invertebrates (mostly insects), but there were several studies on plants (15), birds (16), mammals (19), and reptiles and amphibians (13). We also collected qualitative information on the length of time since fragmentation. With data on total and relative abundances (and identities) of species, sampling effort, and affiliated meta-data about the study sites, these data can be used to more definitively test hypotheses about the role of habitat fragmentation in altering patterns of biodiversity. There are no copyright restrictions. Please cite this data paper and the associated Dryad data set if the data are used in publications.

Key words: Disturbance; habitat fragmentation; habitat loss; species abundance distribution; species-area relationship; species richness.

The complete data set is available as Supporting Information at: [*to be completed at proof stage*].

Data Availability

Associated data is also available at Dryad: <https://doi.org/10.5061/dryad.595718c>.

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