

DOES DIVERSITY AFFECT FUNCTIONING IN TROPICAL FORESTS?



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1 WHY IS THIS IMPORTANT?

Diversity-functioning relationships have been used for justifying the case for biodiversity preservation.

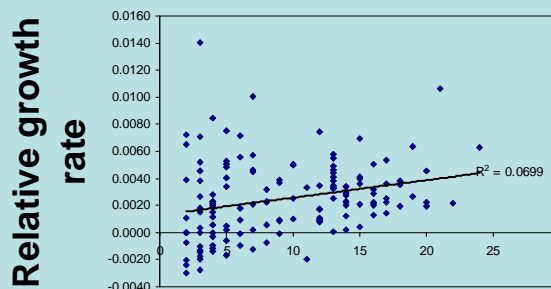
We used – for the first time – the tropical rain forest as a real world platform (i.e., non-random species composition, large spatial scale, and presence of all trophic communities) for an investigation of diversity-functioning relationship.

2 WHAT DID WE DO?

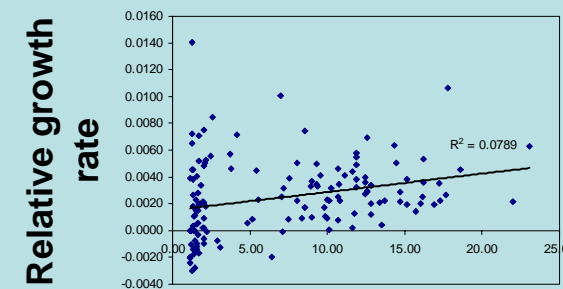
We established 6 × 1 ha plots in Dja faunal reserve in southern Cameroon, Three of the six plots were established in the low-diversity forests to attain a diversity gradient. We measured and identified all stems 10 cm diameter in each plot in 25 quadrats (20m × 20m), in 2005.

We repeated this in 2006, and calculated mean relative growth rates for each quadrat and corresponding diversity indices (species number & Simpson's index).

3 WHAT DID WE FIND ?



Species number



Simpson's diversity index

4 CONCLUSION

The linear relationships ($P < 0.05$) suggest that tree diversity in our rain forest plots affects primary production.

These forests co-occur on apparently identical soils and are exposed to the same climate, therefore the correlation between diversity and relative growth rate may be caused by the differing resource requirements of the species, but we cannot separate whether this is a 'sampling effect' or niche complementarity (Hooper et al. 2005).

5 WHAT'S NEXT?

We will extend our investigation to other ecosystem functions such as stability, decomposition rate and carbon storage.

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Reference: Hooper D.U. et al. (2005) Effects of biodiversity on ecosystem functioning: A consensus of current knowledge. Ecological Monographs 75, 3-35.