

Anthropogenic Effects on African Landscapes:

Spatial structure, Typologies, Ecological impact

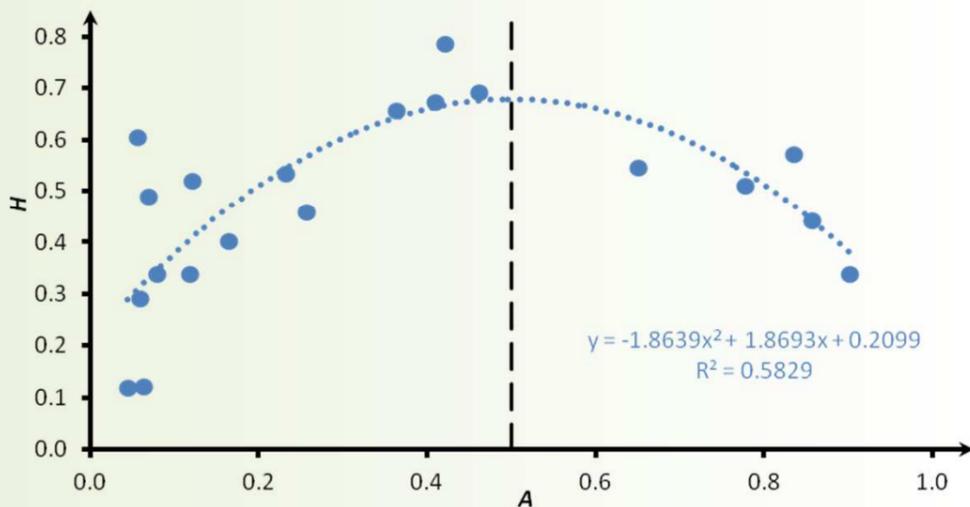
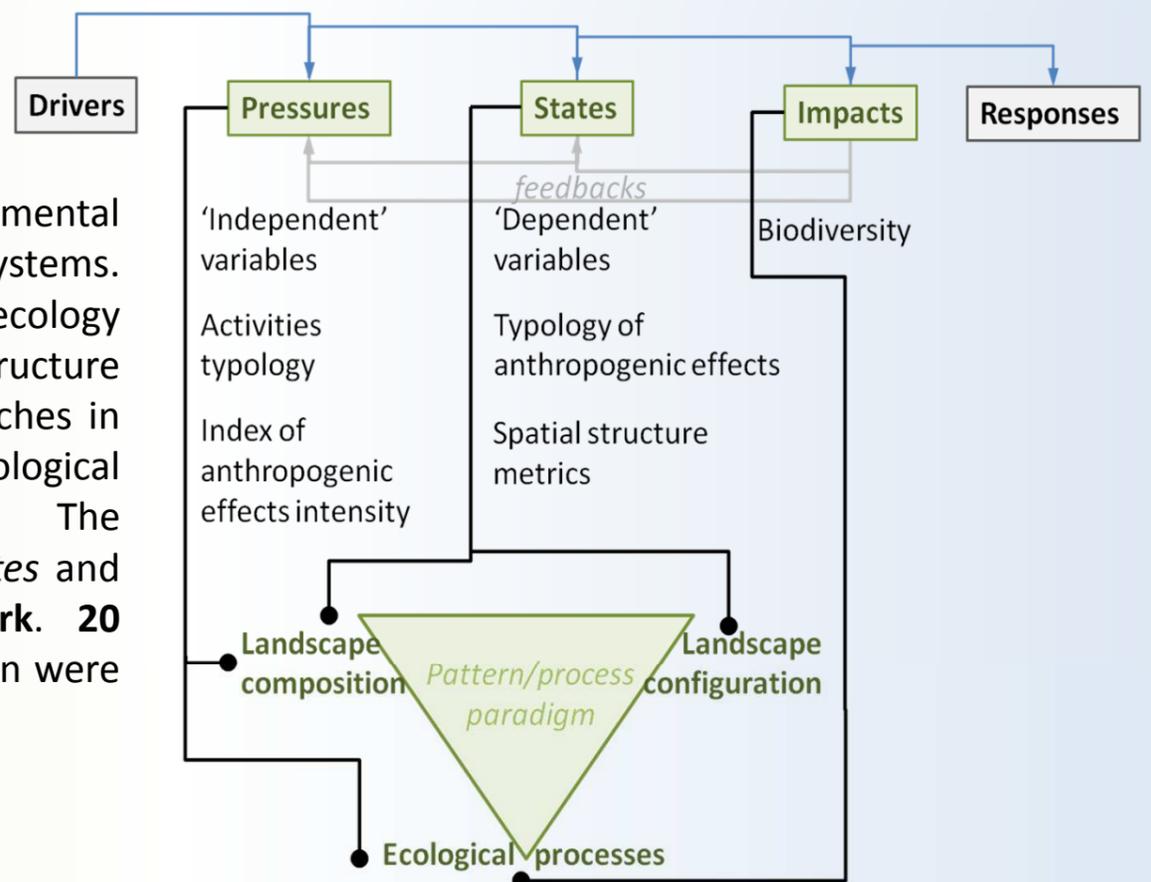
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Context of the study:

Anthropogenic effects cause environmental **pressures** leading to degraded **states** of ecosystems. They are here studied from a landscape ecology perspective: by studying the spatial structure (composition + configuration) of habitat patches in landscapes, to infer the **impacts** on ecological processes (**pattern / process paradigm**). The present study focuses on the *pressures*, *states* and *impacts* aspects of the **DPSIR framework**. **20 landscapes** from D.R.C., Ivory Coast and Benin were studied using **satellite imagery**.

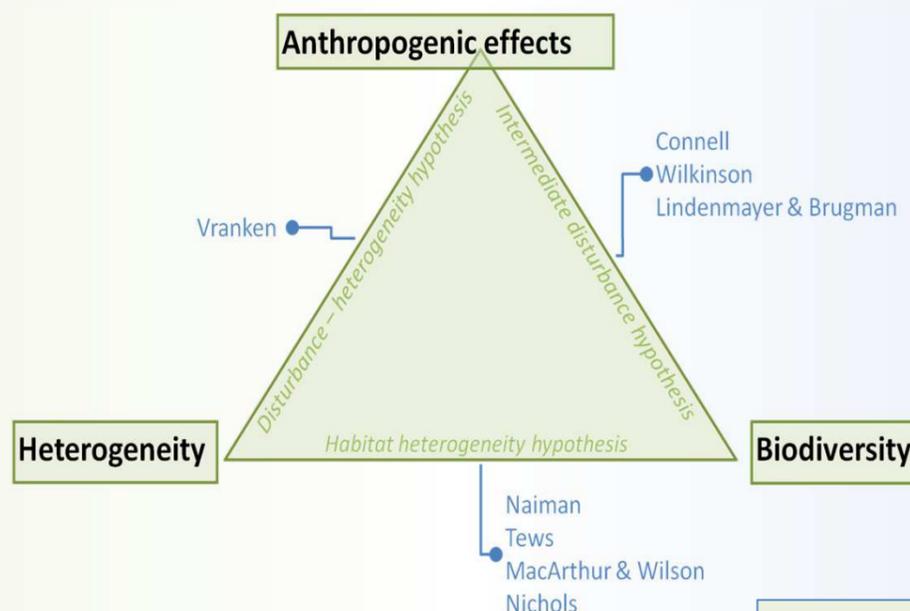


Results :

Compositional heterogeneity (H , Simpson index) of landscape patterns depending on anthropogenic effects intensity (A). **Heterogeneity is maximal at intermediate anthropogenic effect intensity.** The same results have been observed for configurational heterogeneity.

Conclusions:

Two hypotheses linking anthropogenic effects, heterogeneity and biodiversity already exist. The present results form the third **hypothesis** that completes the triangular relationship between those 3 parameters. This has important outcomes in **sustainable development** and biological conservation.



Implications for land management:

Areas with **maximal landscape heterogeneity** and **intermediate proportions** of **anthropogenic land covers** have **higher biodiversity**.