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PS2.6 Vegetation types at large spatial scales. Can we predict where they meet?

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Ecotones represent areas where vegetation types meet. Little is known about what determines the position and distribution of ecotones at large spatial scales, and particularly to what extent they correspond to sharp environmental gradients. Here I tested whether vegetation ecotones in Africa could be predicted by environmental factors. I specifically tested whether ecotones of physiognomic vegetation types classified using remote sensing data were better explained by the environment than ecotones of floristic vegetation types drawn by experts. Ecotonal areas for the two different types of vegetation were extracted and mapped. The magnitude of environmental change around ecotonal areas was compared to that of non-ecotonal areas using Maxent. Environmental gradients around ecotonal areas did not significantly differ from those of non-ecotonal areas. This may be due to factors other than those considered here, such as fire or vegetation history, having an influence on ecotonal zones.
Keywords: vegetation Africa ecotone biogeographic boundary

PS2.7 ⚡ Remote sensing to shape the next generation species distribution models

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Current species distribution modeling (SDM) research calls for more realistic approaches that better integrate biotic interactions and a robust modelling framework flexible enough to accommodate multiple scales. One of the current limitations of SDMs relates to a lack of availability of ecologically and spatially explicit parameters to feed into the considered models. In this respect, we believe that novel remote sensing data provide a unique opportunity for biogeographers to progress from classical SDMs to a new generation of SDMs. We here propose a new class of modelling approach, the *next generation species distribution models* (NG-SDMs). We define NG-SDMs as across-scale predictive models that (1) sit on the mid-section of the correlative/mechanistic continuum incorporating the strengths of both modelling approaches that have been explored in previous SDM studies, (2) make use of new information to inform parameter selection, and that (3) explicitly consider biotic interactions with valid proxies and population dynamics. We demonstrate how modern remote sensing may revolutionize the way we model species distribution in both terrestrial and aquatic habitats.

PS2.8 Remote sensing approach for evaluating the invasion strategic of Mesquite (*Prosopis juliflora*) in Sub-Saharan Africa

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In the Sub-Saharan Africa, the problems of desertification, land degradation and dust storm are still serious. Because, the invasive species Mesquite has a high capacity to fix sand dunes, mesquite trees were introduced into Sudan in 1917 from South Africa and Egypt and planted in Khartoum and Eastern Sudan. However, the tree was invaded both natural and managed habitats, including watercourses, floodplains, highways, degraded abandoned land and