

Habitat modification effects on anuran food webs in the Colombian tropical dry forest

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Abstract

Habitat loss and transformation are major threats to biodiversity and ecosystem functioning, but their effects on species interaction are often poorly understood. We evaluated effects of habitat transformation and seasonality on anuran-prey food webs in Colombian dry-forests. We asked whether anthropic transformation (anthropic vs natural) and/or seasonality (dry, minor and major rain seasons) affect predator load on arthropods, the occurrence of energetic bottlenecks, and the diet overlap of anurans. We selected six dry forest sites in the Caribbean of Colombia, sampled anurans, and identified their stomach contents to construct anuran-prey food webs. We show that the global structure of food webs was affected by disturbance and seasonality, but not by their interaction. Prey vulnerability was higher in anthropic habitats. Habitat transformation enhanced diet overlap among predators, but there was not a differential effect of habitat type according to seasonality for network metrics. Our study shows a strong effect of natural vegetation modification in tropical dry forest on anuran-prey food webs, while seasonality did not seem to further mediate these effects.

Keywords

Predation, Networks, Generality, Vulnerability