

Abstract

Seasonal fluctuations in climatic factors are expected to increase in future decades. However, little is known about the response of tropical species communities to seasonal fluctuations in climate and resource availability, particularly across different habitat types. We examined the relationship between spatio-temporal fluctuations in the abundance of fruits and invertebrates and two avian feeding guilds, i.e. frugivores and insectivores, in forest and farmland habitats in western Kenya. Fruits and invertebrates fluctuated substantially throughout the year, but seasonal fluctuations were asynchronous between the two habitat types. Species richness and total abundance of frugivores and insectivores also fluctuated strongly and were closely related to the abundance of their respective resources. Frugivore species richness fluctuated anti-cyclical in forest and farmland habitats, suggesting that several frugivorous species tracked fruit resources across habitat boundaries. In contrast, insectivorous bird richness fluctuated synchronously in the two habitat types, suggesting a lack of local-scale movements across habitat boundaries. We conclude that bird communities strongly respond to seasonal fluctuations in resource availability, but responses differ between feeding guilds. While frugivores seem to respond flexibly to seasonal fluctuations, for instance by tracking fruit resources across habitat boundaries, insectivorous birds appear to be more susceptible to the expected increase in seasonal fluctuations in resource availability.