

Abstract

Food is not always readily available and therefore an important limiting resource to birds. South African forests have a similar fruiting and flowering phenology to tropical forests in that food availability fluctuates over space and time. South African indigenous forest is naturally fragmented in a non-forest matrix and therefore differs from tropical forests. Anthropogenic landuse change has contributed to the increased fragmentation of indigenous forest. The isolated nature of patches provides a suitable platform from which to assess changes in a forest bird community between seasons because they are structurally and functionally distinct from the surrounding vegetation. Therefore, the aim of the study was to assess food as a driver of community dynamics and dietary patterns of birds in a Mist Belt Mixed *Podocarpus* forest patch between two distinct seasons, winter and summer. This was assessed through a combination of field techniques and stable isotope analysis of carbon and nitrogen. Further, birds were categorised as forest specialists, forest generalists, and forest visitors based on published information to provide extra insight into community changes. Species richness and abundance differed between seasons due to the local movements and turnover of birds and due to the influx of migrants into the forest. In addition, nectarivores and frugivores increased in abundance and biomass in the forest in winter when flowers and fruit were readily available from canopy trees, such as *Halleria lucida* and *Podocarpus latifolius*. However, insect-eating guilds increased in summer when there was a greater diversity of invertebrates. Nectarivores, granivores, and omnivores vertically tracked food within forest height strat to where it was most abundant, demonstrating a close association with the location of their food resources. Further, the niche of several species, particularly insectivores and nectarivores, broadened in winter when food resources were limited. However, there was niche contraction in several bird species in summer when resources were more readily available. Overall, the forest acted as a refuge for guilds, particularly frugivores and nectarivores, in winter. Furthermore, this study suggested that food limitation is species-specific and does not apply to all species. Understanding the drivers of community change has important implications for forest management and conservation of forest flora and fauna.