The Ranging Costs of a Fallback Food: Liana Consumption Supplements Diet but Increases Foraging Effort in Howler Monkeys

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ABSTRACT

Lianas are important components in the dynamics of tropical forests and represent fallback foods for some primates, yet little is known about their impact on primate ecology, behavior or fitness. Using 2 yr of field data, we investigated liana consumption and foraging effort in four groups of howler monkeys (two in bigger, more conserved forest fragments and two in smaller, less conserved fragments) to assess whether howler monkeys use lianas when and where food availability is scarce, and how liana consumption is related to foraging effort. Howler monkeys in smaller fragments spent more time consuming lianas and liana consumption was negatively related to the consumption of preferred food resources (fruit and Ficus spp). Further, travel time was positively related to liana feeding time, but not to tree feeding time, and howler monkeys visited a greater number of food patches when feeding from liana leaves than when feeding from tree leaves. Our results suggest that these increases in foraging effort were related to the fact that lianas are mainly a source of leaves, and that liana patch size was probably smaller than tree patch size. While these results were clear when analyzing all four groups combined, however, they were not always significant in each of the groups individually. We suggest that this may be related to the differences in group size, patch size and the availability of resources among groups. Further studies are necessary to assess whether these dietary and behavioral adjustments negatively impact on the fitness and conservation of primates in fragments.

Abstract in Spanish is available in the online version of this article.

Key words: Alouatta palliata; behavior; conservation; foraging; forest fragmentation; Los Tuxtlas; Mexico; primates.