

Title: The costs of living in the city: influence of urbanization on the trophic niche and body condition of the African rainbow lizard *Agama picticauda*

Abstract

Trophic niche is a fundamental aspect of the ecology and natural history of animals, influencing their behavior, health, survival, and population dynamics. Although urbanization can strongly affect the trophic niche of wildlife by altering prey availability, abundance, and distribution, this effect remains understudied in tropical reptiles. Here, we assessed the influence of urbanization on the trophic niche and body condition of the West African rainbow lizard *Agama picticauda* in the Accra Plains of Ghana. Gastrointestinal content analysis of 98 lizards sampled from urban, suburban, and rural areas revealed 1088 prey items belonging to 14 orders and ~47 families of arthropods. Generally, the lizards consumed insects, with Hymenoptera (Formicidae) and Coleoptera (Carabidae) being the most frequently consumed prey orders. Multinomial regression modeling indicated that sex and site strongly affected the diet and body condition of the lizards, with suburban and rural lizards scoring the highest and lowest on both trophic niche breadth and body condition, respectively. We found a weak positive association between body condition and the diversity of ingested prey orders. Our data indicated that urbanization negatively influenced the trophic niche and body condition of *A. picticauda*. Although the differences in body condition among sites were not statistically significant, these could have important biological ramifications. The negative body condition of the urban female lizards suggests that the city could be an ecological trap, which can reduce the long-term fitness of lizards living in the urban area. Our findings can inform urban land use planning and effective conservation of urban habitats. We caution, however, that the findings of this study may not necessarily reflect the long-term trophic dynamics of rainbow lizards in the Accra Plains of Ghana and other cities.