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Natural and artificial microhabitats of an endemic lizard (*Liolaemus lutzae*) threatened by climate change: Debris as useful microhabitats to mitigate hours of restriction in lizard thermal nicheCarlos Frederico Duarte Rocha¹, Catia M Militao¹, Patricia Almeida-Santos¹ and Paulo Nogueira-Costa²¹Rio de Janeiro State University, Brazil²Federal University of Southern and Southeastern Para, Brazil

The world's largest scientific research involving populations of lizards has recently found a worrying pattern of extinctions of lizard species resulting from global temperature increase of planet, showing massive lizard extinctions simultaneously in all continents, by alteration of their thermal niche due severe restriction of number of hours of activity, compromising most physiological characteristics. It is predicted that remaining current climate change trends, about 20% of all species of lizards would be extinguished by 2080. Additional appropriated microhabitats are crucial to mitigate the effects by allowing lizards to keep preferred body temperatures along a larger number of hours of activity. One of the lizard species predicted to go extinct was the endangered sand lizard *Liolaemus lutzae*, endemic of Rio de Janeiro State in Brazil living only along a narrow strip of beach habitat 50-100 m wide along 200 km of coast. We studied use of natural and anthropogenic microhabitats by *L. lutzae* in its habitat (Praia Grande, Rio de Janeiro, Brazil), evaluating how this use was influenced by thermal characteristics of microhabitats. We recorded frequency of different microhabitats used, operative microhabitat temperature (T_e), individuals-body temperature (T_b °C). For operative microhabitat temperature we used HOBO® data loggers. Individuals used seven microhabitat types, being vegetation-covering ground the most frequently natural-microhabitat used. Plastics and wood debris were the most frequently used anthropogenic used as artificial-microhabitats. Models installed among vegetation registered highest averages of T_e (59.9 °C). T_b of individuals between vegetation (33.5±2.2, 28.4-38.2, N=70) remained more constant throughout the day than those of plastic (32.3±2.5, 39-27.8, N=47) or under wood (31.3±3.7, 24-40.2, N=65). Data indicated that *L. lutzae* uses vegetation and debris of anthropic origin deposited in its habitat to maximize its thermoregulation and that the debris constitute useful thermoregulation sites, which can mitigate negative effects of hours of restrictions imposed by climate changes to its thermal niche.

Biography

Carlos Frederico Duarte Rocha has completed his PhD in Science (Ecology) obtained at Universidade Estadual de Campinas, Campinas, Brazil in 1992. He is a Full Professor at Universidade do Estado do Rio de Janeiro in Rio de Janeiro, Brazil. His main interests are in ecology and conservation of amphibians and reptiles. He has published a total of 412 scientific articles in 59 different international scientific journals and in 35 different Brazilian journals and published or organized ten books, mainly on biodiversity and conservation. He was in the coordination of the Graduate Program in Ecology and Evolution of UERJ from 2008 to 2016 and he is Level I-A Researcher (Higher level of Brazilian Scientists attributed by the Brazilian Council of Science and Technology - CNPq) of the Brazilian Environmental Ministry.

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