Abundance, relative home range and species - habitat association of small mammal species in Nyerere National Park, Tanzania

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Abstract

Home ranges play an important role in the ecology of small mammals in understanding the driving factors for variations between species, including; mating patterns, foraging behavior and habitat use. We investigated the abundance, relative home ranges and species-habitat association of small mammal species in the Nyerere National Park. Two habitats; closed woodland and seasonal riverine forest were selected and in each habitat two grids of 70m x 70m were established. The Capture Mark Recapture technique was deployed. From July 2018 to June 2020 a total of 732 small mammal individuals belonging to 19 species were captured. Of the 19 species captured, 12 were rodents, 2 insectivores, 4 carnivores; and 1 primate. Acomys ngurui abundance was not statistically significant different between habitats (W = 220, df = 1, p = 0.144) and across seasons (F(2, 45) = 1.41, p = 0.2547)). While, Mastomys natalensis and Lemniscomys rosalia were statistically significant different (W = 407, p = 0.01 and W=430.5, p=0.002 respectively) between habitats and across seasons (F(2,45) = 4.352, p = 0.019 and F(2,45) = 6.321, p = 0.0038 respectively). Acomys ngurui had the largest mean home range size (1,087.58 m2) than L. rosalia (831.55 m2) and M. natalensis (166 m2) with overlaps being recorded in habitats and across seasons. Most small mammals were associated with seasonal riverine forest. We conclude that, small mammal species abundance and home ranges vary with habitats and seasons for individual species in the Nyerere National Park. We recommend to the management of the park to consider small mammals in their general management plan.

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