Abstract

The African elephant, *Loxodonta africana* displays sexual segregation, a phenomenon which describes males and females of the same species living separately, except during the mating season. Despite it occurring in many sexually dimorphic species, the factors that govern sexual segregation are still poorly understood. The aim of my study was to investigate whether or not African elephants in the 1825 km^2 Associated Private Nature Reserves (APNR), Limpopo Province were sexually segregated as a result of habitat segregation. I tested the Forage Selection Hypothesis (FSH) which, based on the Jarman-Bell principle, predicts that smaller females are more selective foragers as a result of their high energy demands and poor digestive capabilities in comparison to the larger males. Using the GPS location data of 18 collared adult elephants (12 male and 6 female) from November 2008 to November 2010, I plotted both the total (95% isopleth) and core (50% isopleth) home ranges of individual elephants. I used these home ranges to i) confirm sexual segregation in the APNR, ii) determine whether or not there was a difference in vegetation composition of the home ranges between males and females, and iii) to establish how frequently male and female elephants were associated with each of the vegetation types located within their home ranges. All analyses were done at both the total and core home range level. Home range overlaps were rare between male and female home ranges, particularly at the core home range level, confirming sexual segregation of elephants in the APNR. The vegetation composition data of the home ranges as well as the frequency of association by elephants with each of the available vegetation types (using GPS locations) revealed no significant difference between male and female elephants. Therefore, habitat segregation did not explain sexual segregation by elephants in the APNR. I propose that future studies should consider: i) temporal distribution of elephants to assess how much time each sex spends in each of the available vegetation types; ii) other resources, particularly the availability of water, in addition to the availability of forage, since water limits elephant movements; and iii) social segregation in conjunction with habitat segregation, since elephants display sex-specific differences in social organisation. A comprehensive understanding of the factors that govern sexual segregation of elephants might contribute to conservation management of elephants in the APNR and other small reserves.