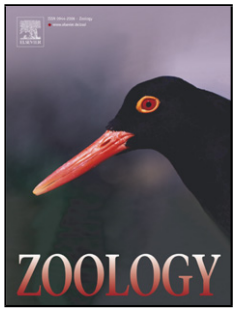

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Home ranges of lions in the Kalahari, Botswana exhibit vast sizes and high temporal variability

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Highlights

- Observed home ranges of lions are among the largest recorded for the species.
- High spatiotemporal variability of home range size and shape was observed.
- Assumed to be a consequence of the environmental conditions of the Kalahari, and dispersed and dynamic large herbivore community.
- High variability underlines the importance of studying home ranges over extended time periods at several aggregation levels.

ABSTRACT

The central Kalahari region in Botswana is one of the few remaining ecosystems with a stable lion population. Yet, relatively little is known about the ecology of the lions there. As an entry point, home range estimations provide information about the space utilization of the studied animals. The home ranges of eight lions in this region were determined to investigate their spatial overlaps and spatiotemporal variations. We found that, except for MCP, all home range estimators yielded comparable results regarding size and shape. The home ranges of all individuals were located predominantly inside the protected reserves. Their areas were among the largest known for lions with 1131 – 4314 km^2 (95 %), with no significant differences between males and females. Numerous overlaps between lions of different sexes were detected, although these originate from different groups. A distance chart confirmed that most of these lions directly encountered each other once or several times. Strong temporal