Feeding ecology and social organisation of honey badgers (*Mellivora capensis*) in the southern Kalahari.

by

Colleen Margaret Begg

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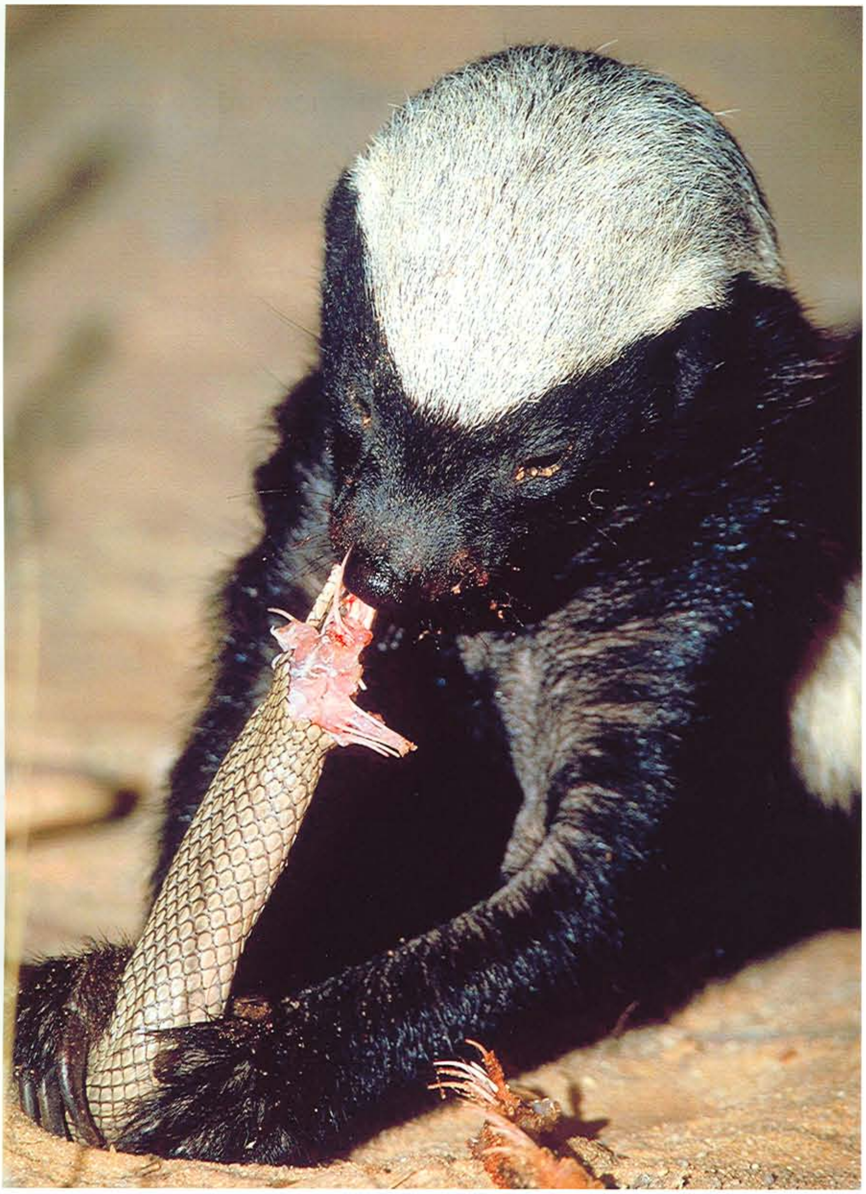
For Keith, who started it all.



Female honey badger eating a mole snake

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Summary

The lack of fundamental biological information on the honey badger *Mellivora capensis* and its vulnerable conservation status were the motivating factors behind this study. A study population of 25 individuals (12 females; 12 males) was radio-marked in the Kgalagadi Transfrontier Park (KTP), South Africa. Through a combination of radio telemetry and visual observations (5 244 h) of nine habituated individuals (five females; four males), the feeding ecology, scent marking and social behaviour of the honey badger were investigated.

The honey badger is a solitary, generalist carnivore with strong seasonal differences in diet. In support of optimal diet theory, the cold dry season diet is characterized by low species richness, low foraging yield, high dietary diversity and increased foraging time while the reverse is true in the hot wet and hot-dry seasons. The honey badger appears to shift between alternative prey species depending on their availability on a seasonal and daily level. The

daily activity patterns of both sexes show a strong seasonal shift from predominantly nocturnal activity in the hot-wet and hot-dry season to more diurnal activity in the cold-dry season and this appears to be primarily affected by temperature.

Despite marked sexual size dimorphism (males a third larger than females), no intersexual differences in diet or foraging behaviour were observed, but there were sexual and in males age-related differences in movement patterns, scent marking and social behaviour. The honey badger appears to have a polygynous or promiscuous mating system, but did not fit the general mustelid pattern of intrasexual territoriality. Instead, adult males had extensive overlapping home ranges (548 km^2) that encompassed the smaller, regularly spaced home ranges of the females (138 km^2) and young males (178 km^2). Receptive females are an unpredictable and scare resource in space (large home ranges) and time (no breeding season) with a long time to renewal (inter-birth interval > 1 year). As a result adult males adopt a roaming rather than a staying tactic with competition for access to the mating burrow mediated by a dominance hierarchy loosely based on age, mass and testes size. The hierarchy appears to be maintained through regular aggressive and agonistic interactions and scent marking. Data suggest that latrine scent marking in adult males is related to advertising social status and maintaining the dominance hierarchy though "scent matching". In females and young males latrine visits are rare, but token urination is common and its association with foraging behaviour suggests that it mediates spatio-temporal separation and/or resource utilization.

Interspecific interactions between the honey badger and other mammalian and avian predators were common and included intraguild predation and interspecific feeding associations between the honey badger and seven other species (two mammals; five birds). The most common foraging associations were observed between the honey badger and the pale chanting-goshawk *Melierax canorus* and black-backed jackal *Canis mesomelas*. These associations appear to be commensalism, with associating species benefiting from increased hunting opportunities and intake rate but no significant costs or benefits to the honey badger.

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