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The ecology of otters in an urban environment

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2018

https://hdl.handle.net/10539/25759

Ponsonby, Damian Winter (2018) The ecology of otters in an urban environment, University of the Witwatersrand, Johannesburg, https://hdl.handle.net/10539/25759

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ABSTRACT

Urban development has rapidly become the largest contributing factor of biodiversity decline across the planet. Regardless, certain species can survive these novel environments due to their opportunistic nature or occurrence in niche specific areas within urban areas. The aim of my study was to establish whether two otter species, the African clawless otter (*Aonyx capensis*) and the spotted-necked otter (*Hydrictis maculicollis*), in an urban environment showed similar ecological patterns in distribution (spatial arrangement), diet, and habitat use compared to conspecific individuals in areas with moderate to low levels of human disturbance. Firstly, I investigated the distribution and frequency of each species based on occurrence of signs (e.g. spraints and footprints) in relation to urban and peri-urban areas of central Gauteng, South Africa. Both species were present in central Gauteng, with a greater number of *A. capensis* signs found. No difference was observed between the number of signs found in urban and peri-urban areas for both species. Secondly, habitat variables measured near otter signs showed several differences in variables between urban and peri-urban areas. Otter movement through urban areas appeared to be associated with tall grass species, reed beds, and trees, which provided means of concealment for the animals, as well as avoidance of buildings to reduce human encounters. Thirdly, diet analysis based on prey remains in otter faecal samples resulted in lower than expected levels of crab and fish, and revealed higher than expected numbers of less common prey (e.g. birds and mammals) being consumed. Finally, the genetic diversity of individuals was measured using allele frequency to determine the level of reproductive success (ability to survive and produce viable offspring; Fisher, 1915) of *A. capensis*. Results showed a high level of genetic recombination between individuals in the population suggesting no movement restrictions are being experienced by otters, but genetic diversity was low. Otters are able to utilise resources available in this novel environment, which does not appear to be affecting movement, habitat utilisation or diet. A high genetic flow suggests successful use of urban areas, although there is concern about future genetic health in Gauteng based on the lower level of genetic variance.