

## **Investigations on daytime resting site selection and home-range of raccoons (*Procyon lotor* L., 1758) in an urban habitat in Kassel (North Hessen)**

Untersuchungen zur Raumnutzung des Waschbären (*Procyon lotor* Linné, 1758) im urbanen Lebensraum am Beispiel der Stadt Kassel (Nordhessen)

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Due to its high ecological plasticity, its ability to climb and its tactile skills, the raccoon has had particular success in claiming human settlement areas for itself. This is notably applicable in Central Europe for the north Hessian city Kassel, in which raccoon densities of over 100 animals per 100 ha were established in places. A marked increase in conflicts with the population of Kassel led to a research project in 2001/02 on the urbanization of the raccoon being conducted.

To this end 106 different raccoons over an area of 300 ha were caught in the city area of Kassel. From these animals 17 adult raccoons (9 females, 8 males) were immobilised with the aid of a ketamine-xylazine anaesthetic agent and fitted with a 90 g VHF radio collars (corresponding to ca. 1.5 % of average body weight). The telemetric data collection took place between July 2001 and March 2002 over an area of ca. 2200 ha both in the western parts of Kassel city and the bordering Habichtswald. After the data evaluation of 2785 localisations (1674 night and 1111 day localisations), statements could be made concerning the home range, the day resting site and the social system under the particular circumstances of an urban habitat.

The raccoons roamed a remarkably small home range with an average of 129 ha ( $S_{\bar{x}} = 43$ ), whereby the females' home range was significantly smaller with an average 36 ha ( $S_{\bar{x}} = 5$ ; Min = 25 ha, Max = 61 ha) than the males' home range average of 210 ha ( $S_{\bar{x}} = 70$ ; Min = 20 ha, Max = 613 ha). Almost all the raccoons demonstrated clear seasonal changes in the size of the home range. In investigations of the day resting sites, 200 different resting sites could be determined in over 30 categories. The racoons selected the following sites accordingly: buildings 43 %; trees 39 %; and dens above and below the ground 17 %. The racoons used 52 % of all resting sites only once. However, a relatively small number of sites (14 %) were chosen more than ten times (max. 94 times).

A high concentration of females, resulting from optimal resource distribution, and additionally occurring accumulations through artificial food sources (anthropogenic food supply) can enable the formation of loose relationship structures between several (related) males. The female aggregations (resource clustering) allow several males access to the females. As a result of a potentially improved resource defence (= increased chance of reproduction) through cooperative behaviour, the formation of close social bonds between the males can be fostered. The existence of such a "cooperative social group" with close spatial social relationships could be demonstrated for Kassel with the high level of spatial coordination which was measured between three males.