New insights into mating strategies of raccoons (*Procyon lotor* L.) in northeastern Germany determined by VHF telemetry and paternity tests

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Abstract

We monitored 51 reproductive (28 adult males, 23 adult females) radiocollared raccoons (*Procyon lotor* Linné, 1758) during the 2006-2009 mating seasons and beyond to investigate consortship behaviour and mating strategies for this allochthone carnivore. Additionally we genotyped reproductive raccoons (n=58) and their progeny (n=55) to determine paternity as result for male mating success (unpublished data). These studies are part of a research project about population ecology of raccoons in a bog and swamp area of the German lowlands (www.projekt-waschbaer.de).

The main mating season spanned up to 18 days within the 21th of January to the 17th of February with marginal shifts according to the length of winter season. A second oestrus leading to late parturitions during July and August could be proven for two females. Spatial analysis of male and female distribution yielded an extensive intersexual spatial overlap with one male overlapping up to three female home ranges. During a mating season some males (n=8) increased their home range size and nightly movements noticeable compared to their annual home range. Determined as den sharing, consortship events occured between up to four females per male within a mating season and females consorted with up to three males during an oestrus period. The number of multiple consortships varied between mild and cold winter seasons, whereas male excursions decreased during a cold mating season. Therefore we expect that the percentage of multiple paternities could also be weather-dependent. For the first time we could document intersexual den sharing outside the mating season for two females and four males. Thereby every female shared dens alternating or together with two males. We suggest that this kind of consortship behaviour outside the mating season leads to higher familiarity between resident raccoons and therefore to higher mating success for resident males than for passing males during mating season. Furthermore we could confirm a promiscous breeding system for both sexes as supposed and observed in recent studies on raccoons in North America.

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