

rainfall, assumably because of a washing out effect. Hence, we excluded samples, which were collected after days with rainfall from further analysis. The results suggest that Mountain hares are not influenced by temperature and season. This is discussed in the light of available literature on seasonality of GCM excretion in wild animals under natural conditions.

Social patterns of female raccoons and their young over the breeding and weaning period (*Procyon lotor* L., 1758)

D. SCHÄUBLE^{1*}, F.-U. MICHLER², B. A. KÖHNEMANN³, M. ROTH², ¹ Freie Universität Berlin, Institute of Biology, Germany, e-mail: dirkschaeuble@gmx.net, ²Technical University Dresden, Institute of Forest Zoology, Germany, ³University of Applied Sciences Eberswalde, Faculty of Forests and Environment, Department of Wildlife Biology & Management, Germany

We have analysed the home range and the social behaviour of raccoon-mother-families in a bog and swamp area with the help of the VHF-Telemetric-System. The focus was to have a closer look at the important time in the young families' life between the litter period and the breeding and weaning of the cubs.

This study was carried out in the Müritz-Nationalpark (Mecklenburg-Western Pomerania), in the year 2007. It is part of a research project, investigating the population ecology of raccoons in the northeast German lowlands (www.projekt-waschbaer.de).

The social patterns of female raccoons and their young have not sufficiently been investigated yet (Gehrt 2003). Therefore, only very few data have been collected concerning the sensitive period of weaning, taking place between the 4th. and the 8th. month of the cubs' life (Schneider 1971).

So, consequently the determined timeframe for this sub-study was July, when the young start to accompany their mothers, until November (Schäuble 2009).

During this time six raccoon-families (6 adult females, 13 cubs) were fitted with VHF radio collars. For the cubs special flexible collars (WAGENER[®], Germany) were taken that adapt to the growing process.

With the help of the collected telemetric data (n = 2462), the home ranges of the raccoons were localised and compared with each other. The investigated females showed an average home range size of 225 ha (n = 6, Min. = 99 ha, Max. = 459 ha, S = 133 ha), and for the cubs the average home range size was 212 ha (n = 11, Min. = 52 ha, Max. = 370 ha, S = 178 ha). The home ranges of the cubs differ insignificantly from the ones of the females over the investigated period (U-Test, $U_1 = 23$, $U_2 = 31$, $p > 0,05$).

In order to analyse the social contact between female and cub, data of the dynamic interaction has additionally been collected via the Jacobs- Index (Jacobs 1974). The Jacobs-Index averages at 0,53 (J_x) (n = 10, Min. = 0,14,

Max. = 0,99, S = 0,33). The results show a wide range of different social contact among the raccoons, from a very close contact to a loose liaison.

The modified home ranges and the Jacobs-Index both showed differences between the six investigated raccoon families. Over the investigated period, four families showed preceding substeps of disbandment of the social tie between female and cub, ending in the migration of a male cub in October 2007. In the same time, two families showed no noticeable changes concerning the social ties. The results of this study lead to the conclusion, that for raccoons the sensitive process of weaning is a very complex process that defies a generalising description.

Small mammals as vectors for mycorrhizal fungi in Central European mountain forests

S. SCHICKMANN¹, K. KRÄUTLER^{1,2}, A. URBAN², U. NOPP-MAYR¹, K. HACKLÄNDER¹, ¹Institute of Wildlife Biology and Game Management, University of Natural Resources and Applied Life Sciences, Gregor-Mendel-Strasse 33, A-1180 Vienna, Austria, e-mail: susanne.schickmann@boku.ac.at, ²Mycology Research Group, Faculty Centre of Biodiversity, Faculty of Life Sciences, University Vienna, Rennweg 14, A-1030 Vienna, Austria

In temperate forests, the tripartite relationship comprised of animals, trees and mycorrhizal fungi plays a fundamental role in the functioning of a forest: Mycorrhizal fungi support trees in water and mineral uptake, protect against plant pathogens and connect plants of the same and different species, therefore forming the major part of the so called "wood wide web". In return, the host plants (e. g. spruce, pine, fir, beech, hazel, and oak) supply fungi with essential carbohydrates. Fruiting bodies of ectomycorrhizal fungi (both epi- and hypogeous species) are used as food source (mycophagy) by small ground dwelling mammals. By digging them up and defecating the indigestible fungal spores they transport different fungal species to new habitats and therefore promote growth and distribution of a variety of mycorrhizal fungi.

In our study we investigated the role of small ground dwelling mammals by live trapping, collection of fecal pellets from the traps for microscopic examination and DNA based identification. More than 600 samples of eight different small mammal species were collected in five trapping seasons and examined microscopically, with identification of at least 80 different fungal spore types.

Between the trapped species distinct differences in mycophagy as well as differences in seasons and differently managed forest types were found. The degree of mycophagy ranged from zero spores observed up to more than 7000 spores counted in 50 fields of view of the microscopic sample. The identified fungal species include hypogeous and epigeous ectomycorrhizal fungi, plant pathogens, sapro-parasitic and saprobic fungi. By DNA extraction and molecular species identification the majority