Poster Session 1 – Population Dynamics

47 Trophic niche partitioning by small mammals in forest environments. Influence of food types and availability, measured using stable isotope analysis in hair

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We analysed the carbon and nitrogen isotopic composition in hair from 173 rodent individuals (12 field mice, 122 yellow-necked mice and 39 bank voles). They were caught on four 0,5 ha transects, each consisting of 100 traps controlled twice a day for five days, located in different forest environments: wet alder forest, coniferous forest, deciduous forest dominated by hornbeam and lime and a habitat dominated by planted pine with understory typical for a coniferous forest. 147 samples of potential rodent food were collected on all transects and their isotopic composition was analysed. Due to differences in humidity and fertility of the study sites, we found large differences in the isotopic composition of the isotopic "background" (nitrogen and carbon isotopes of primary producers). This indicates the importance of using isotopic data on food and consumer from exactly the same habitat in this type of study. In the deciduous forest male yellow-necked mice consume more animal prey than females, indicated by higher δ15N values. We found no other sex-dependent differences in isotopic niches. Rodents from the coniferous forest had the largest isotopic niches, and this study site was also the one with the lowest rodent density. On the other hand, individuals from the alder forest differed least in isotopic composition, despite having the highest density of all study sites. This indicates a limitation of population dynamics by resource availability rather than pressure from predators. Analyses of the isotopic mixing polygons suggest that a food source with higher δ15N values than plant material has not been taken into account. This is probably insects and other soil invertebrates. Samples from this organisms will be collected and analysed before the presentation of this results.

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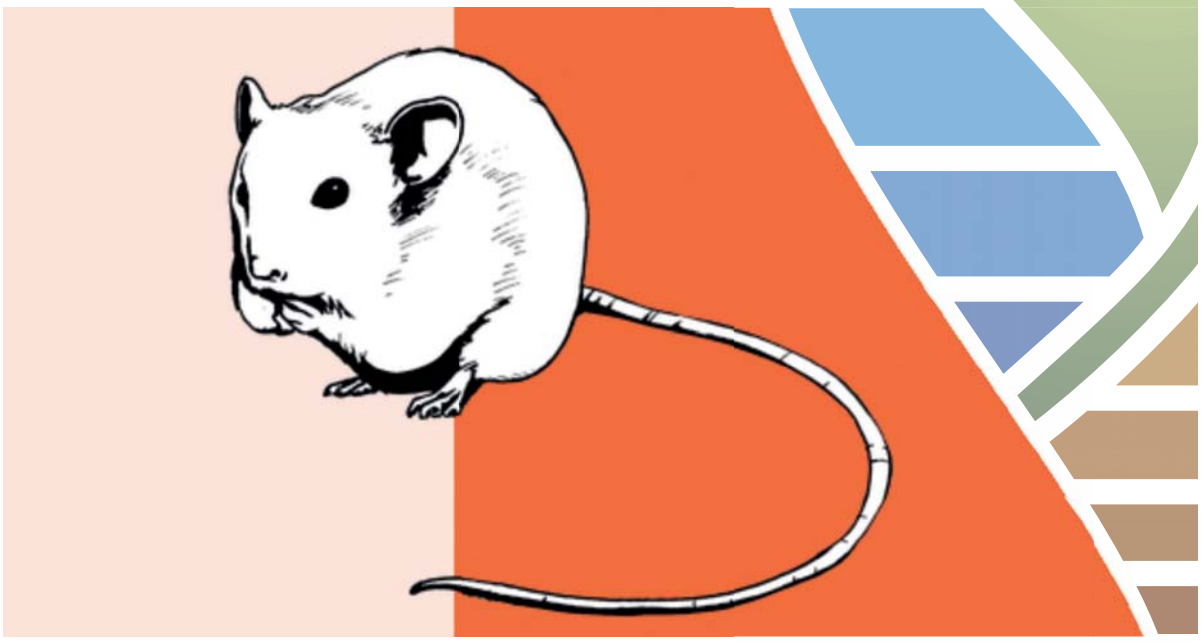

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Bibliografische Information der Deutschen Nationalbibliothek
Die Deutsche Nationalbibliothek verzeichnet diese Publikation
In der Deutschen Nationalbibliografie: detaillierte bibliografische
Daten sind im Internet über http://dnb.d-nb.de abrufbar.

ISSN 1868-9892
ISBN 978-3-95547-059-3
DOI 10.5073/jka.2018.459.000

Printed in Germany by Arno Brynda GmbH, Berlin.