
Population Dynamics – Session 2

Small mammals in montane forests: not where, but when?

Ana Maria Benedek, Ioan Sîrbu

Blaga University of Sibiu, Romania, benedek_ana@yahoo.com

Community dynamics is a well documented topic concerning the ecology of small mammals, but very few studies have focused simultaneously on its temporal and elevational patterns. Here we report the multiannual dynamics of small mammal communities along an elevational gradient in relation to the habitat characteristics. During a five-year faunistical inventory in Retezat National Park, Romania we live-trapped small mammals in different forested and shrubby habitats at elevations between 770 m and 2,080 m. Because small mammal communities in mountains face more severe climatical and habitat-related limiting factors, we hypothesized that: 1. these communities undergo significant year-to-year changes; 2. elevation interferes with the patterns of community dynamics; 3. the effect of habitat selection is eclipsed by the temporal changes. We used ANOVA and partial constrained multivariate analysis with habitat factors, year, elevation, and their interaction as predictors and trapping site as covariate. All community metrics differed significantly among years. Species composition was predicted not only by year but also by its interaction with elevation, but not by elevation itself. The elevational pattern of the community dynamics shifted direction each year. The dominant rodent species, *Myodes glareolus* and *Apodemus flavicollis* showed opposite patterns, possibly as a strategy to avoid competition. Overall, their abundances were negatively correlated. Moisture, human disturbance and proportion of the conifers in the canopy were best predictors of species composition, but the variation explained was lower than that caused by the yearly changes. Human impact on montane habitats is currently increasing because of forest exploitation and the global warming will lead to decreased moisture and cover of conifers. Thus, the further study of the interaction of these habitat changes with the time is important in order to understand and predict their synergistic effects on small mammal communities, their mechanisms and consequences.

4 5 9

Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Julius Kühn-Institut
Bundesforschungsinstitut für Kulturpflanzen

4 5 9

Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6th International Conference of Rodent
Biology and Management
and
16th Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Editors:

Jens Jacob¹ and Jana Eccard²

¹Julius Kühn Institute, Federal Research Centre for Cultivated Plants,
Institute for Plant Protection in Horticulture and Forests, Vertebrate Research,
Toppeideweg 88, 48161 Münster, Germany

²University of Potsdam, Institute of Biochemistry and Biology,
Animal Ecology Group, Maulbeerallee 1,
14469 Potsdam, Germany

Local Organizing Committee:

Jana Eccard, University of Potsdam

Jens Jacob, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Münster

Daniela Reil, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Münster

Christiane Scheffler, University of Potsdam

Elke Seydewitz, University of Potsdam

Scientific organising committee:

Emil Tkadlec (Czech Republic); Frauke Ecke (Sweden); Grant Singleton (Philippines); Heikki Henttonen (Finland); Jana Eccard (Germany); Jens Jacob (Germany); Lyn Hinds (Australia); Prince Kaleme (Congo); Xavier Lambin (UK); Zhibin Zhang (China)

International Steering Committee Rodens et Spatium:

Abraham Haim (Israel); Alexey Surov (Russia); Ana Maria Benedek (Romania); Boris Krasnov (Israel);

Emil Tkadlec (Czech Republic); Éric Le Boulengé (Belgium); Farida Khammar (Algeria);

František Sedláček (Czech Republic); Gert Olsson (Sweden); Grant Singleton (Australia);

Heikki Henttonen (Finland); Jan Zima (Czech Republic); Jean-François Cosson (France); Linas Balčiauskas (Lithuania);

Maria da Luz Mathias (Portugal); Molly McDonough (USA); Mustafa Sözen (Turkey);

Nigel Yoccoz (Norway); Olga Osipova (Russia); Takuya Shimada (Japan); Victor Sánchez Cordero (Mexico);

Xavier Lambin (United Kingdom); Yasmina Dahmani (Algeria)

International Steering Committee**International Conference of Rodent Biology and Management:**

Andrea Byrom (New Zealand); Charley Krebs (Canada); Grant Singleton (Philippines); Jens Jacob (Germany);

Jiqi Lu (China); Lyn Hinds (Australia); Nico Avenant (South Africa); Peter Banks (Australia);

Peter Brown (Australia); Regino Cavia (Argentina); Rhodes Makundi (Tanzania); Roger Pech (New Zealand);

Steven Belmain (UK); Sudarmaji (Indonesia); Zhibin Zhang (China)

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



Alle Beiträge im Julius-Kühn-Archiv sind unter einer

Creative Commons - Namensnennung - Weitergabe unter gleichen Bedingungen -

4.0 Lizenz veröffentlicht.

Printed in Germany by Arno Brynda GmbH, Berlin.