
Rodent Management – Session 2

Dynamic of the invasive rodent ranges in Russia: facts and forecast

Liudmila A. Khlyap, Varos G. Petrosyan, Andrey A. Warshavskiy

AN Severtsov Institute of Ecology and Evolution of the RAS, Moscow, Russia, khlyap@mail.ru

A list of 100 invasive species of animals, plants and microorganisms (TOP-100 worst), which are the most dangerous for ecosystems, native species and humans in the territory of Russia, is compiled. It contains 10 species of mammals, 6 of them are rodent species: *Castor canadensis* Kuhl, 1820; *Ondatra zibethicus* Linnaeus, 1766; *Apodemus agrarius* (Pallas, 1771), *Mus musculus* Linnaeus, 1758; *Rattus rattus* Linnaeus, 1758; *Rattus norvegicus* Berkenhout, 1769. The distribution of these rodents in the territory of Russia and in neighboring countries was analyzed on the basis of all available presence data from museums, monitoring and literature sources. We created geographical maps of the dynamics of the distribution range of invasive rodents using GIS-technologies and environmental niche modeling. We used the maximum entropy method (MaxEnt) for modeling the species' potential geographic distributions (Phillips et al., 2006 and other). An extensive literature review was conducted to select the important variables which are involved in determining the distribution of the rodent species. The selected environmental variables were: land cover/land use characteristics, climatic, topographic and location of anthropogenic objects. The native range and in time dynamics of rodent species range were identified. It is shown that regions of recent invasions of rodents are mainly located in the east part of Russia. The reduction of the *Rattus rattus* range was established in the last decades. A forecast of the changes in the rodent ranges under different scenarios of climate change is presented. According to preliminary data, climate change has only a small effect on the regions of rodent invasions. The anthropogenic transformation of landscapes, transport traffic intensity and land use changes have more significant impact for the range dynamics.

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Jens Jacob, Jana Eccard (Editors)

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

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Book of Abstracts



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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

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