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## Poster Session 1 – Rodent Management

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### 25 Bio-economic model of muskrat control

**Daan Bos<sup>1</sup>, E. Emiel van Loon<sup>2</sup>, Ron C. Ydenberg<sup>3</sup>**

<sup>1</sup>Altenburg & Wymenga ecological consultants, Veenwouden, The Netherlands, d.bos@altwym.nl

<sup>2</sup>University of Amsterdam, Amsterdam, The Netherlands

<sup>3</sup>Simon Fraser University, Burnaby, Canada

Bio-economic models provide a tool to choose between alternative strategies of management for pest- or predator populations. Such model was constructed for the case of Muskrat control in the Netherlands, in order to investigate under what assumptions qualified eradication would be economically more optimal than year-round control or no-control. The Muskrat is an invasive alien species endangering public safety by burrowing in levees and dams. The model consisted of three components, 1) a discrete logistic population model, and formulas capturing 2) the trapping process and 3) the costs of control, prevention and damage. The population and trapping components were calibrated with success against existing time series of catch and effort. The model results clearly point at qualified eradication as being optimal from an economic perspective, under realistic assumptions for Muskrat control in the Netherlands. It identified that trappers may be limited by time required for inspection and control of traps, which explains why-in practice-control tends to become less costly when a situation of greater control is attained. Furthermore the model points at the relative importance of the required investments in preventive measures versus the costs of damage inflicted by Muskrat. The first costs are related to the prevention of the most important damage and the reduction of risks for public safety by fortification of flood walls and/or banks of water bodies. For the case of the Netherlands, it is the sheer magnitude of the required investment in preventive measures, under a policy of no-control, that would make such strategy more expensive than qualified eradication, independent of the damage costs that can reasonably be expected.

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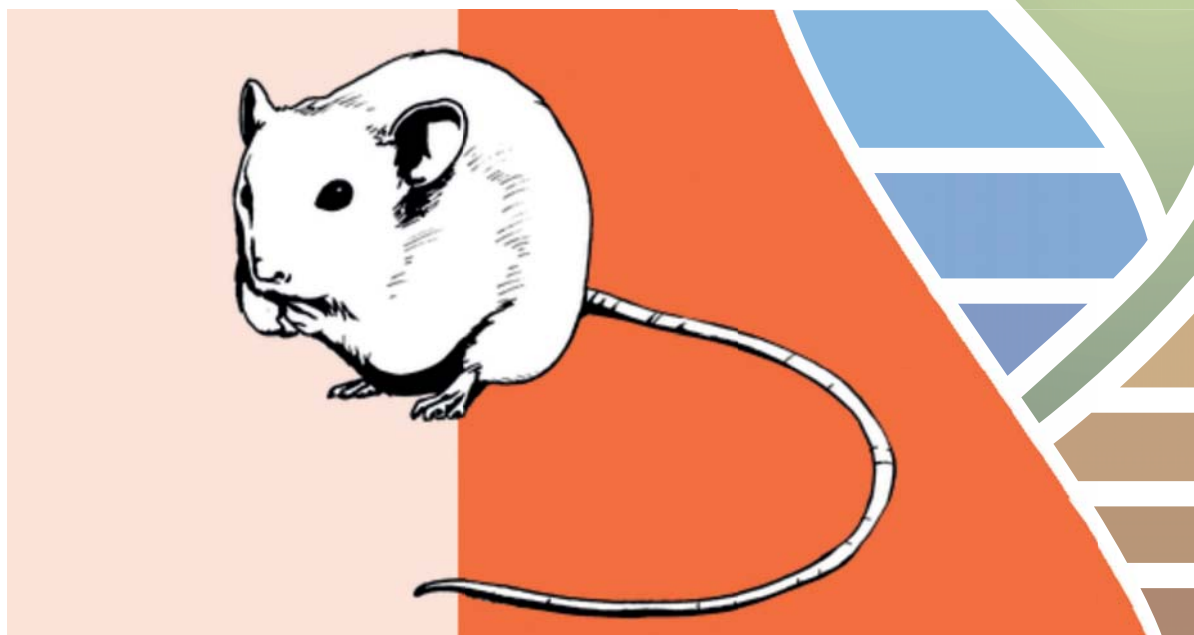
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Jens Jacob, Jana Eccard (Editors)

6<sup>th</sup> International Conference of Rodent  
Biology and Management  
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16<sup>th</sup> Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



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**Editors:**

Jens Jacob<sup>1</sup> and Jana Eccard<sup>2</sup>

<sup>1</sup>Julius Kühn Institute, Federal Research Centre for Cultivated Plants,  
Institute for Plant Protection in Horticulture and Forests, Vertebrate Research,  
Toppheideweg 88, 48161 Münster, Germany

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

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