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## Poster Session 2 – Conservation and Ecosystem Services

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### **93 Testing the “density-benefit” relationships for invasive alien species: does black rat density influence their role as pollinators?**

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Alien species that have both positive and negative impacts in ecosystems are complex to manage. A way to do this could be to use “density-benefit” curves that describe the relationship between the density of an alien and the positive services it provides. We investigated how the density of alien black rats (*Rattus rattus*) affects their efficacy as pollinators of a native plant in Sydney, Australia. First, we used chew cards to determine the densities of black rats in bushland fragments. Then, we created artificial pollination networks and used wildlife cameras to investigate the pollination behaviour of visiting black rats. Pollination potential was measured by the number of black rat visits, the total time they spent foraging on inflorescences, and the number of deposited pollen grains on flowers. We show how these pollination metrics vary with rat density by fitting a “density-benefit” curve and identifying any thresholds in pollination services. This is the first time that alien black rats have been observed successfully pollinating a native plant, which creates a management challenge: do we remove the rats to mitigate their other impacts or do we allow them to persist for the pollination services they provide? Our experiments will provide helpful data that will assist in tackling these thorny management problems.

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# Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

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

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



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