Proceedings of the Tenth International Conference on Urban Pests
Rubén Bueno-Marí, Tomas Montalvo, and Wm. H Robinson (editors) 2022
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RELATION BETWEEN URBAN GREENSPACE, ABUNDANCE OF WILD RATS, AND THEIR ZOONOTIC PATHOGEN PREVALENCE AND DIVERSITY

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Abstract Increasing biodiversity is one of the many beneficial effects of urban greening. However, increasing biodiversity could also result in an increase of unwanted or pest species such as wild rats. Wild rats can host a wide range of zoonotic pathogens that can cause mild to severe disease in humans. Therefore, it is important to gain more insight into the effect of urban greening on wild rats to minimize the potential negative effects for public health. In this study, we investigated the relation between the amount of urban greenspace, the abundance of wild rats, and the prevalence and diversity of zoonotic pathogens carried by those rats. This study was performed in three cities in The Netherlands: Amsterdam, Rotterdam and Eindhoven. Rats were systematically trapped in different location types with varying amounts of urban greenspace present. All captured rats were tested for the following set of zoonotic pathogens: Seoul orthohantavirus, Hepatitis E virus, Cowpox virus, Orthopox virus, *Leptospira*, *Bartonella*, *Borrelia*, *Anaplasma*, *Rickettsia*, ESBL/AmpC-producing *E. coli*, *Salmonella*, MRSA, *Toxoplasma gondii*, *Streptobacillus moniliformis* and *Coxiella burnetii*. A total of 450 wild rats (445 *Rattus norvegicus* and 5 *Rattus rattus*) were collected and used for subsequent analyses. The testing of samples is currently ongoing. The results will focus on 1) differences in rat abundance between locations with different amounts of urban greenspace (and potential other factors affecting rat abundance) and 2) the relation between urban greenspace and pathogen prevalence and diversity in wild rats and the risk for public health.

Key words Biodiversity, zoonotic pathogens, *Rattus rattus*, *R. norvegius*, wild rats