
Response to Human-Induced Changes

Of city mice and village mice: behavioural adaptations of voles and mice to urban environments

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A fundamental question of current ecological research is to illuminate the drivers and limits of species responses to human-induced rapid environmental change (HIREC). Understanding behavioural responses to HIREC have been identified as a key component because behaviour links across fundamental hierarchical levels of organisation, i.e. from individual responses to population and community changes. Ongoing urbanization provides an ideal setting to test the functional role of behaviour for responses to HIREC because they occur at a fast time scale. In a first step, we aimed at testing whether urban and rural populations of four rodent species differ in mean trait expression, flexibility and repeatability of behaviours associated to risk-taking and exploration of novel environments. Using a standardized behavioural test in the field, we quantified exploration and boldness for a total of 305 individuals (the majority repeatedly) of 4 rodent species (voles: *Myodes glareolus*, *Microtus arvalis*; mice: *Apodemus agrrestis*, *Apodemus flavicollis*). We found differences in mean expression of behavioural traits and in behavioural flexibility between individuals from urban and rural populations in some species, with urban dwellers being bolder, more explorative and less flexible than rural conspecifics. In other species, no such differences existed. Therefore, behavioural responses to urbanized environments appear to be species-specific with some species adjusting behaviours to the novel environmental conditions of altered food availability and predation risk, while others retained species-specific patterns. As a result, individuals distribute themselves in a non-random way in response to human disturbance, which might play a key role in the successful coping with the challenges of human-induced environmental changes.

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

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Book of Abstracts



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