



# Movement patterns and genetic diversity of wild and reintroduced common dormice, *Muscardinus avellanarius*

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**ABSTRACT.** Movement is an important life history trait that can have an impact on local adaptation, and other evolutionary phenomena. We used a combination of nestbox survey data and genetic techniques (genotyping at 10 microsatellite loci) to quantify patterns of movement in common dormice *Muscardinus avellanarius* at two distinct sites in the UK: 1) Bontuchel (a natural population) and 2) Wych (captive-bred individuals that were reintroduced to this site), over three consecutive years (2006-2008). Both methods revealed a consistent pattern of sex-biased movement (movements by adult males and females) in both populations that allowed isolation-by-distance genetic structure to develop within 1 km. The similarity of data from captive-bred and natural individuals indicated that *ex situ* programing has not significantly altered the natural movement behavior of common

dormice; consequently, the two populations could be managed with the same conservation strategies. We also found that the reintroduced dormice in Wych maintained relatively high levels of genetic diversity. This first report of movement patterns in reintroduced and natural populations of *M. avellanarius* combining genetic and field-survey data highlights the role of genetic studies in the investigation of ecological behaviour and for conservation management.

**Key words:** Movement; Conservation; Microsatellite; Genetic structure; Common dormouse