

Genetic diversity and population structure of the invasive American grey squirrel in European fragmented landscapes

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Grey squirrels have proven to be successful invaders but the number of invading individuals is a key factor that determines the invasiveness of a non-native species. We examine here how different release numbers and modalities of release affect the genetic diversity and the genetic structure of three populations of the invasive American grey squirrel (*Sciurus carolinensis*) in Europe, at local spatial scale. Three populations with known founder size in Northern Ireland, Northumberland (England), and Piedmont (Italy) are examined at 12 microsatellite loci. Our results show that in these three areas there are positive correlations between founder size and genetic diversity, spatial genetic differentiation, and squirrel dispersal. These findings improve not only our general understanding of invasion genetics but also provide insights about expansion rates of grey squirrels. If genetic diversity influences dispersal rate, good management practice should include preventing the arrival of new squirrels in those areas, which may increase diversity and rates of dispersal.

[MEMO]