

Wildlife Disease Management

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Investigating territoriality and movement in *Meles meles*, in the context of wildlife disease management.

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Summary

1. Badger movement may be of major significance to the spread and control of bovine tuberculosis in cattle. Fragmentation of social groups' structure in response to culling may exacerbate disease spread. Understanding the reasons why social group cohesion and territoriality may break down naturally and what the consequences are for rates of badger movements, may provide useful information in the context of natural social perturbation.

2. Bait-marking and live trapping data were used to investigate demographic factors that may influence movement or territorial changes at both population level and territory level.

3. There were more territories and more cross-boundary movements with increasing density. Males move across boundaries more than females, but female movement was more closely correlated with population density. Badgers moved more between setts when there was no territory boundary present compared to when there was.

4. Understanding what changes occur in the demographic constitution of social groups before territorial boundaries break down would be highly relevant to badger TB management in the context of when perturbation is triggered. The difference between the types of movement expressed within badger populations need to be taken account of and partitioned accordingly within investigations.

Key-words: bait-marking, bovine TB, dispersal, European badger, extra-group mating, *Mustelidae*, population size, ranging behaviour