The State of Britain’s Mammals 2008

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people’s trust for endangered species mammals
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New Bovine TB Eradication Group for England
Defra and the English Cattle Industry have agreed to form a joint group to advise the government on developing a plan for reducing the incidence of bTB from cattle in England and moving towards eventual eradication. The Bovine TB Eradication Group57, which will include representatives from Defra’s Food and Farming Group, Animal Health, the farming industry and the veterinary profession, will also draw on the advice of the European Commission’s TB Task Force, which will be invited to visit Britain in early 2009. The group will look at the options available to address infection and transmission in cattle and wildlife, including the use of vaccination in cattle and badgers. It will consider any exceptional circumstances or new scientific evidence that relate to the established policy on badger culling, recognising that the terms of this policy are currently subject to judicial review. The group will also assess options to help farmers in high incidence areas maintain viable businesses when under disease restrictions. The group will aim to develop a series of measures that can be submitted to the European Commission for approval as part of a formal eradication plan.

Genetic analyses of badger populations
The findings of the Randomised Badger Culling Trial (RBCT) relied on knowledge of the ecology of the badger. Recent advances in molecular genetic techniques have enhanced this knowledge insofar as it has been possible only recently to determine the mating system and social structure of the European badger, through the use of microsatellite loci. Microsatellite loci are used in genetic fingerprinting (see box) which enables determination of who an individual’s parents are, and the relatedness of individuals.

Two studies53,54 in high-density badger populations, have shown a polygynandrous mating system: males mate with more than one female, and females mate with more than one male. Within social groups more than one male and more than one female may breed. Indeed, individuals do not always breed with mates from the same social group – around half of the cubs in these high-density populations were sired by males from outside the cub’s group. These extra-group paternities were assigned primarily to males from neighbouring groups (see map). This suggests a high level of contact between badgers in different social groups, which has implications for the spread of diseases such as Mycobacterium bovis (which causes TB).

Using genetic data researchers from WildCRU have also shown that one third of group members are more likely to be full-siblings or parent–offspring than to be unrelated55. Social groups therefore consist of closely and more distantly related individuals. Additionally, badgers within a social group and in neighbouring groups, are more closely related than you would expect by chance. This leads to clustering of relatives within social groups and between neighbouring groups, the latter probably results from the high levels of paternity gained by neighbouring males.

Genetic studies can help explain the effect that culling has on badger social groups. One such analysis revealed an increase in badger movement as a result of the RBCT culling, at the genetic level56. Furthermore, badgers infected with M. bovis tended to move further than uninfected individuals. Detailed research into the intricacies of individual badger life histories enhances our understanding of badger societies and informs future work on the control of TB in cattle.
References

8. www.watervolescotland.org
People's Trust for Endangered Species

Seven years ago, People’s Trust for Endangered Species began to focus particular attention on conserving wild mammals and their habitats throughout the British Isles by creating a special fund called Mammals Trust UK (MTUK). Through this fund we support and commission practical conservation research and we raise awareness by involving people in conserving mammals. We work in partnership with other voluntary organisations, wildlife experts, government and industry. Our aims in conserving our wild mammal populations are:

• to raise funds for research and practical conservation based on sound scientific understanding
• to increase public awareness, bring together those with an interest in mammal conservation and share knowledge
• to create opportunities for people to participate actively in mammal monitoring and conservation projects across the UK
• to manage key conservation sites to protect them for the future and to create opportunities for education, recreation and enjoyment of our natural heritage.

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WildCRU

The Wildlife Conservation Research Unit’s mission is to undertake original research on aspects of fundamental biology relevant to solving practical problems of wildlife conservation and environmental management.

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The State of Britain’s Mammals 2008 is the seventh of the annual updates following the publication of Britain’s Mammals: The Challenge for Conservation for the launch of Mammals Trust UK in 2001. Copies of both publications can be obtained by contacting the People’s Trust for Endangered Species at the address and phone number above.