

Animal Science

Editorial

Wild Mammals and the Human Food Chain

Currently around 70% of land in the UK is under some kind of agricultural management (DEFRA statistics). Much of the UK's mammalian wildlife community is therefore influenced by land manager/farmer decisions either directly e.g. through population management or indirectly e.g. through habitat management. There are examples of this close interaction providing significant benefit to farmers; for example, the increased prominence of agri-environment schemes and conservation schemes have benefited some farmers through increased revenue. However, the presence of wildlife in agricultural landscapes can also represent a significant cost to farmers, for example through the transmission of disease from wildlife to livestock. Whether wildlife are seen as beneficial or detrimental to agricultural practices there is a need to understand this close and often complex interaction as ultimately it leads to the human food chain. For example wild mammals may act as a food source (e.g. game species) or as a source of zoonotic disease for livestock entering the food chain. It is especially timely to consider this interaction as UK agriculture currently faces a number of challenges with likely sweeping impacts across the UK, including CAP reform and climate change. The behaviour of farmers in response to these challenges will affect the natural flora and fauna of the UK, including the mammals and their associated costs and benefits.

It is for these reasons that The Mammal Society, in association with the British Society of Animal Science, held a 2-day symposium entitled **Wild Mammals and the Human Food Chain** on 25 and 26 November 2005. The scientific aim of this symposium was to examine the interactions of wild mammals with the process of human food production. It focused on advances in our understanding of ecological processes such as competition, predation and disease, how farming systems and the decisions made by farmers and consumers affect these interactions, and the implications of this for landscape and biodiversity conservation. The symposium adopted an interdisciplinary perspective, incorporating ecology, animal science, economics and sociology. The other main aim of the symposium was to foster interdisciplinary collaboration and understanding in this area.

In this issue of *Animal Science*, a series of three mini-reviews emanating from presentations at the symposium is presented. These reviews highlight the breadth of expertise needed to tackle the current and future challenges facing the agricultural industry in relation to future wild mammal-agricultural industry interactions. Alistair Ward and colleagues consider the effects of farming practices on the risks of disease to livestock from wild mammals, concentrating on the ongoing problem of bovine tuberculosis in badgers and cattle (Ward *et al.*, 2006). Justin Irvine considers the rôle of parasites in regulating wildlife populations and the disease implications for wildlife-livestock host communities (Irvine, 2006). Finally, Gareth Edwards-Jones considers how social and economic influences affect farmer decision making and how to predict farmer behaviour that ultimately influences habitat structure and biodiversity (Edwards-Jones, 2006). This socio-economic approach is crucial if we are to predict the behaviour of the industry to challenges such as CAP reform which will inform the ecological and epidemiological disciplines that will predict the knock-on consequences of industry behaviour for wildlife and their rôle in the human food chain.

These reviews highlight the potential for interdisciplinary approaches to advance the understanding and management of wild mammals in agricultural ecosystems, particularly in maximizing the benefits and minimizing the costs for the human food chain. However, much of the basic knowledge needed for strategic management of wildlife in agricultural habitats is based on educated guesses, for example national mammal abundance statistics (Harris *et al.*, 1995) and knowledge of issues such as disease prevalence in wildlife hosts is even more sketchy (Böhm *et al.*, 2006). Wildlife population and disease surveillance should form an integral part of our wildlife management strategy if we are to foresee and avoid future conflicts.

References

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