National Road Death Survey

There have been warnings that common mammal species such as hedgehogs, badgers and hares might be declining and face local extinction in certain parts of Europe primarily due to road casualties. In Britain annual road casualties are estimated to account for 100,000 foxes, 100,000 hedgehogs, 50,000 badgers and 30,000-50,000 deer. There is also concern regarding particular bird of prey species such as the barn owl, which is dramatically over-represented in the total number of wildlife road casualties compared with other bird of prey species. For these reasons, The Mammal Society, in collaboration with the Hawk and Owl Trust, undertook a nationwide survey to identify trends in road and habitat characteristics associated with mammal and bird of prey wildlife road casualties.

For one year, in 2000/2001, 281 volunteers from across Britain recorded wild mammal and bird of prey casualties on all road categories except designated trunk roads and motorways, which were excluded on the grounds of safety. A number of habitat and road characteristic variables were recorded at each casualty location including the speed limit, proximity to a bend, presence or absence of a connecting wildlife corridor (e.g. a stream, railway line or hedgerow), and the adjacent land use, verge habitats and highway boundary features Regional differences in casualty rates were also investigated. Volunteers were also requested to record road and habitat data at non-casualty locations along their route so that characteristics occurring disproportionately more frequently at casualty locations than at non-casualty locations could be identified.

Volunteers recorded 5675 mammal casualties and 142 bird of prey casualties. Figures 1 and 2 show the principal mammal and bird of prey road casualty species as proportions of the total number of casualties. The hedgehog was the most numerous mammal casualty recorded (29% of mammal casualties), followed by badger (25%) and fox (19%). The most numerous bird of prey road casualty recorded was the tawny owl (25% of casualties), followed by kestrel (19%) and then barn owl (16%). Casualties as a proportion of British pre-breeding population size were highest for the badger, fox and barn owl.

Habitat and road features influencing the presence/absence of wildlife road casualties are shown in Table 1. The casualty locations of a number of mammal species, including fox, badger and muntjac, and also the barn owl and kestrel were associated with adjacent linear habitat features that connect with road verges and thus funnel wildlife toward traffic. High traffic speed increased the likelihood of many mammal species, including fox, badger and roe deer, and also the tawny owl, falling victim to vehicles as it reduces the time available for drivers and animals to react to danger. Adjacent land use and region were important factors influencing wildlife road casualty locations and appeared to reflect foraging activity and population density. For example, roe deer and tawny owl road casualties were associated with adjacent woodland habitat and badger casualties were disproportionately high in the south-west of England.

Due to the impact of road casualties it has been suggested that barn owls are unable to sustain viable breeding populations in close proximity to trunk roads and motorways and that road casualties may even be responsible for suppressing the populations of some of our common mammal species on a local scale. There are also a significant number of human fatalities and a considerable economic cost associated with collisions between vehicles and wildlife. There is therefore, a conservation and economic argument for substantial investment in wildlife accident prevention. This study has highlighted typical casualty hotspot locations where such mitigation measures should be implemented.

We are extremely grateful for the tremendous effort of all the volunteers who participated in the survey, all of whom will be sent a summary report in the near future.

By Lincoln Garland

Figure 1. Mammal road casualty proportions

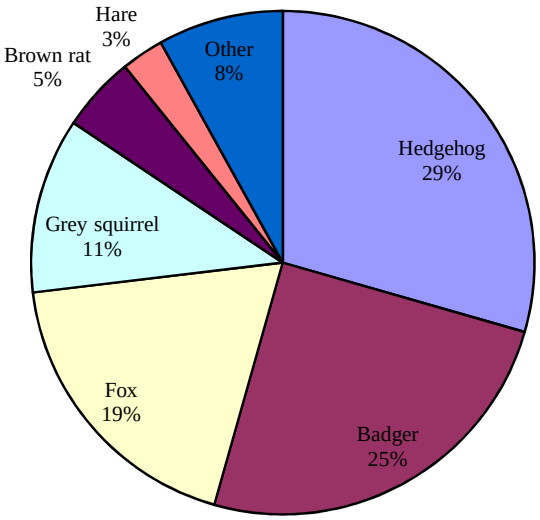

Figure 2. Bird of prey road casualty proportions

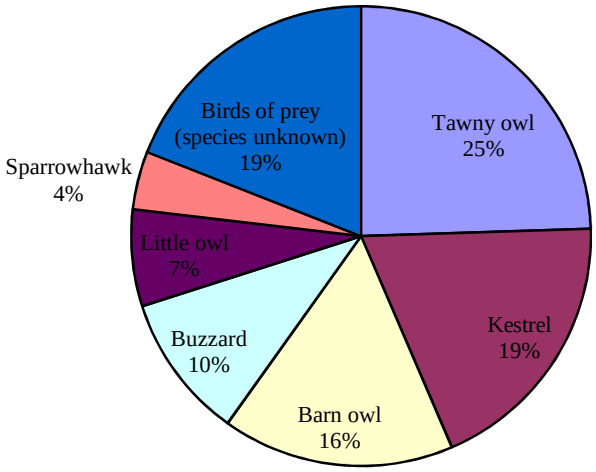

Table 1. Habitat and road features influencing the presence/absence of wildlife road casualties

	Adjacent verge habitat	**Adjacent land use**	**Adjacent highway boundary**	**Connecting Wildlife corridor**	**Road speed limit**	**Proximity to a road bend**	**Region**
Mammals	ns	ns	ns	ns	ns	ns	ns
Hedgehog	ns	√ (urban)	√ (ditch)	ns	ns	ns	ns
Hare	ns	√ (arable)	√ (ditch)	ns	ns	√ (no bend)	√ (north England)
Grey squirrel	√ (wooded)	√ (urban and woodland)	ns	ns	ns	ns	√ (south-east)
Rat	ns	√ (urban)	ns	ns	ns	√ (on bend)	ns
Fox	ns	ns	ns	√	√	ns	ns
Stoat	ns	ns	√ (ditch)	√	√	ns	ns
Weasel	ns	ns	ns	√	ns	ns	ns
Polecat/ferret	ns	√ (pasture)	ns	√	ns	ns	ns
Mink	ns	ns	ns	√	ns	ns	ns
Badger	ns	√ (pasture)	√ (ditch & hedge)	√	√	ns	√ (south-west)
Roe deer	ns	√ (woodland)	√ (ditch)	ns	√	ns	ns
Muntjac	√ (wooded)	ns	√ (ditch and treeline)	√	√	ns	ns
Birds of prey	ns	ns	ns	ns	ns	ns	ns
Kestrel	ns	√ (arable)	ns	√	ns	ns	ns
Barn owl	ns	√ (arable)	√ (no hedge)	√	ns	ns	ns
Tawny owl	ns	√ (woodland)	ns	ns	√	ns	ns

ns – non-significant
√ - significant