

PTES UK mammal grants

A review has recently taken place of the PTES UK mammal grant policy. There are now three broad themes under which there are a variety of research questions to be addressed which will help to inform and direct future conservation work on the UK's priority mammal species. These research questions reflect priorities identified by the various species expert groups and other published targets.

Grant proposals that address any of these questions are likely to be given priority although proposals addressing other pressing conservation issues will continue to be considered. Funds for work carrying out practical habitat work will only be granted as part of a wider project.

Priority research themes:

1. Monitoring mammals

- better methods for estimating distribution and abundance
- more sensitive methods for assessing population change

2. Habitats for mammals

- assessing habitat suitability and connectivity
- improving and restoring habitats
- habitat management
- habitat fragmentation, modification and loss

3. Human impacts and mitigation

- climate change
- habitat fragmentation, modification and loss
- impact of introduced mammals and diseases
- roads and other infrastructure
- toxic chemicals and pollution

	Monitoring mammals	Habitats for mammals	Human impacts and mitigation
Hedgehogs	Determine the extent of population fragmentation through genetics	Determine the feasibility of developing a Habitat Suitability Index to evaluate the suitability of habitat for hedgehogs, akin to that used for great crested newts	How fragmented are hedgehog populations on a local scale? How do or could hedgehogs use or not-use underpasses?
Dormice	Carry out population modelling to determine viable population size in fragmented areas	Determine extent of canopy-use by dormice, with regard to different woodland types Investigate hibernation sites and over-winter survival in relation to different management regimes (coppicing, clear and selective felling) and climatic variables Investigate the impact of other species (native and introduced) on dormouse populations in relation to competition over food and nesting resources (blue tits, wood mice predators) Carry out population modelling and genetic investigation on landscape scale in different habitats to drive practical habitat management advice	Determine how useful wildlife bridges might be in preventing isolation of dormouse populations and how best they might be used in overcoming habitat fragmentation Investigate what, if any, impacts pheasants rearing and shoots may have on dormouse populations. Determine the impact grey squirrels have on dormice populations e.g. in relation to competition over food resources Investigate the impact of other forest uses on dormouse populations Investigate multiple paternity in relation to informing reintroductions, to how male juveniles disperse and how population might be affected by fragmentation
Harvest mice	Develop a method to predict harvest mouse presence and relative abundance from winter nest counts using owl pellet surveys	Create links on a landscape scale such as hedgerows, reed beds and fenced river banks Maintain and promote buffer strips on	Determine what the barriers to dispersal are? Investigate whether harvest mice cross roads and what size of road becomes a barrier?

		<p>farmland alongside fields and ditches</p> <p>Investigate how far harvest mice are able to disperse if their habitat is cut down and how far they are able to disperse in different habitats</p> <p>How resilient are harvest mice to habitat loss and change?</p>	
Otters	Develop methods for assessing the abundance of otters as well as distribution		
Wildcats	Develop reliable molecular markers for the rapid identification of wildcats in the field and forensically	Develop criteria for assessing the effects of land-use changes at the landscape level on the ability of wildcats to withstand incremental losses of parts of their home ranges	<p>Carry out camera-trap survey of Scotland to assess where wildcat populations still survive to provide a better understanding of habitat requirements, causes of hybridization and potential future impacts of major developments (e.g. wind farms and upgrading the A9 to dual carriageway)</p> <p>Investigate the road-crossing behaviour of wildcats and the kinds of mitigation that might be effective in reducing road casualties (e.g. culverts & fencing)</p> <p>Carry out a comparison of trap-neuter-release and culling of feral domestic cats and hybrids on the ability of wildcat populations to recover</p>
Polecats	<p>Develop the use of camera traps for detecting polecats: can they reveal phenotype clearly; can a camera trap protocol be developed and tested for effective site surveys to assess relative abundance?</p> <p>Investigate whether hair tubes can be used to assess relative abundance</p>		<p>Monitor levels of exposure to rodenticides and assess lethal and sub-lethal effects on populations</p> <p>Assess patterns of reproductive introgression with feral ferrets</p> <p>Identify habitat features associated with polecat RTA mortality hotspots in Britain; determine whether it is possible to predict RTA hotspots and mitigate accordingly</p>

			<p>What mitigation options are available for reducing the impacts of roads on polecat mortality and habitat fragmentation:</p> <ul style="list-style-type: none"> - Do polecats use under-road culverts? - What is the effect of vertical concrete barriers in central reservations on polecat movements? - How can linear features passing beneath large roads be modified to promote safe passage by polecats? - What design of fencing might be effective at keeping polecats off roads and guiding them towards safe crossings?
Pine martens	<p>Develop improved methods for detecting pine martens where populations are sparse (e.g. use of hair tubes, footprint tunnels)</p> <p>Refine and test protocols for presence-absence surveys and determine their limits of effectiveness (e.g. scat surveys, footprint tunnels, hair tubes, camera traps)</p> <p>Develop protocol for using trained dogs for detecting pine marten scats</p>	<p>Predict range expansion for all populations based on present and future habitat availability</p> <p>Develop a Habitat Suitability Index for pine martens</p> <p>Investigate methods for artificially creating den sites for pine martens</p>	<p>Promote sustainable solutions to conflicts between pine martens and people (e.g. game estates)</p> <p>Assess the effectiveness of road crossing provision for pine martens (e.g. wildlife bridges, dry culverts)</p>
Red squirrels	<p>Refine non-invasive survey techniques to distinguish between reds and greys with respect to:</p> <ul style="list-style-type: none"> - improving detection rates - different habitats - sampling effort and the power to detect changes in population size - developing habitat manipulations that will benefit reds not greys in the short and long term 	<p>Prepare and implement site management plans for key sites</p>	<p>Improve understanding of the transmission and mode of action of SQPV</p> <p>Develop SQPV vaccine</p> <p>Develop more effective grey squirrel control e.g. oral contraceptive</p> <p>Aerial bridge development to reduce road casualties</p>

Brown hares	<p>Enhance monitoring efforts to determine population trends at regional levels</p> <p>Determine if DNA typing of pellets for identification purposes is worth considering for distinguishing brown from mountain hares</p>	<p>Determine if mowing severely reduces leveret survival and therefore recruitment</p> <p>Determine the relationship between habitat quantity and quality in terms of hare home range size</p>	<p>Determine the impact of wind turbines on brown hares (in terms of noise, visual disturbance or electro-magnetic fields)</p> <p>Investigate whether brown hares use tunnels under roads</p> <p>Find out what the impact of road mortality is on adult brown hare populations, taking into consideration density of roads, density of traffic and seasonality</p>
Mountain hares	<p>Update distribution data and develop and validate a survey and monitoring methodology for mountain hares in Scotland</p> <p>Determine the relationship between habitat quantity and quality in terms of hare home range size</p> <p>Determine if DNA typing of pellets for identification purposes is worth considering for distinguishing brown from mountain hares</p>		<p>Determine the impact of wind turbines on mountain hares (in terms of noise, visual disturbance or electro-magnetic fields)</p> <p>Investigate how current land use changes and climate change are likely to affect mountain and Irish hares</p>
Water voles	<p>Establish a national water vole monitoring scheme</p>	<p>Maintain and extend the area of suitable habitat in National and Regional Key Areas</p>	
Bechstein's bats		<p>Research finer habitat requirements, regional differences and management needs</p>	
Noctules		<p>Research priority habitats and roost requirements and availability</p>	<p>Research effects of climate change on roost requirements and availability</p>
Soprano pipistrelles			<p>Research effectiveness of mitigation and management schemes, including impact of wind farms</p>

Brown long-eared bats			Research impacts of light pollution, effectiveness of different management and habitat use
Greater horseshoe bats			Conduct research into climate change and adjustments in phenology of invertebrate prey populations