

A new methodology for pygmy shrew surveys

WITH THE HELP OF A PTES GRANT, MICHAEL POCOCK AND HIS COLLEAGUES AT THE UNIVERSITY OF BRISTOL HAVE COME UP WITH AN INGENUOUS SOLUTION TO THE PROBLEM OF SURVEYING THE DIMINUTIVE AND ELUSIVE PYGMY SHREW. JILL NELSON REPORTS.

Pygmy shrews, as their name implies, are one of the smallest UK mammals weighing less than a 20p piece with a body just 4–6.5cm in length. They live in underground burrows, but spend their waking hours darting around a network of runways, which they create themselves beneath the ground vegetation. Despite being distributed widely throughout Britain, they are very hard to see and thus to monitor, so their abundance and population trends are unknown.

Without an understanding of a species' distribution and abundance over time, effective conservation is difficult. Pygmy shrews are important, like other small mammals, because of their pivotal role in the food chain. They are voracious predators of invertebrates and prey for raptors and larger mammals.

Other small mammals are often trapped for monitoring purposes in Longworth traps, but capture rates for tiny pygmy shrews are low and variable even when the trap triggers are adjusted to be optimum for their capture. Although hair tubes – in which hairs from passing animals are caught and identified – are another possibility, pygmy shrew hairs caught in standard hair tubes can only really be identified with certainty by using high-magnification microscopes, making this method expensive and labour intensive.

With support from PTES, Michael Pocock at the University of Bristol set about developing a special tiny version of a hair tube that is only accessible to pygmy shrews. In such a tube, the presence of any hair spotted using a hand lens would signify that a pygmy shrew had passed through. The process was quite painstaking.

Firstly the team tested the effect of a tube's aperture size to see how small it had to be to exclude other species while still allowing pygmy shrews completely unfettered access. There's no reason why these little animals would want to squeeze through something for the sake of it, after all. Aperture sizes of 12, 10.5, 9 and 7.5mm were tested.

Other variables were tested too: the presence or absence of bait, bait type and the type and position of the sticky strip that catches the hairs at the end or in the middle of the tube. All of the variations, hundreds of them in all, were tried in different locations, under vegetation and near a hedge within 80km of Bristol in June last year.

The tests revealed that the aperture of the tube needed to be less than 10.5mm. Baited tubes attracted more animals than those not baited. The sticky strip was best positioned across

the end of the tube but the type of strip did not appear to make a significant difference. The best position of the tube overall, in terms of the probability of finding a pygmy shrew, turned out to be in hedgerows and grassland; the least good was in woodland. The work also offered insights as to how often a survey should be run and at how many locations in order to reach a high degree of confidence in the results.

So the team has now successfully created effective and specific hair tubes for detecting pygmy shrews. Better still, the tubes are made from cheap, readily-available materials and are suitable for large-scale surveys that can be conducted easily by volunteers. The results are easy to interpret and the process doesn't require expert handling of the animals. This is a great step in gaining a better understanding of these elusive little creatures.

Pygmy shrews are insatiably inquisitive, rarely passing up an opportunity to investigate a nook or cranny in search of food. Such behaviour makes hair tubes a highly effective survey method.



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