PYGMY SHREWS *SOREX MINUTUS* ON LUNDY: PRELIMINARY DATA ON DISTRIBUTION AND EFFECTIVENESS OF TRAPPING METHODS

by

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ABSTRACT

A study of the distribution of the pygmy shrew Sorex minutus and a comparison of Longworth and pitfall trapping methods was carried out on Lundy in June 2008. Of three individuals caught, two were at Halfway Wall, well north of the known distribution on the island. It is speculated that pitfall traps may be more effective than Longworth traps at catching pygmy shrews on Lundy.

Keywords: Lundy Island, Pygmy shrew, distribution, trapping methods.

INTRODUCTION

The pygmy shrew is one of Lundy Island's native mammals (Appleton *et al*, 2002) and is protected under the Wildlife and Countryside Act (1981). Despite this it has never been studied extensively on Lundy, leaving many questions about its distribution, morphology and behaviour unanswered. The purpose of this note is to describe a preliminary study that attempted to research some of these issues.

The focus of previous trapping studies on the island has largely been buildings to the south of the Quarter Wall (Bull & Parker, 1997) where in 2003 trapping success was very low (K. Varnham, *pers. comm.*) One objective of the present study was to discover if pygmy shrews were distributed throughout the island rather than just the built environment, occupying semi-natural grassland and heathland habitats. On islands the abundance of shrews has been reported to increase after the eradication of rats (e.g. Pascal *et al*, 2005). It is therefore possible that after the rat eradication in 2002 (Appleton *et al*, 2002), the density and distribution of pygmy shrews on Lundy have increased. Anecdotally, there have been numerous sightings recorded in the islands' log book, and the high-pitched squeaks are often heard around the island.

In this study we also aimed to compare the catch rate of Longworth traps and pitfall traps. Previous studies (K.Varnham, unpublished data) and our own observations indicate that some pygmy shrews pass under the trigger in Longworth traps (Bull & Parker, 1997) and may be too light to trigger the tripping weight.

METHODS

The trapping was conducted between 5th June – 26th June 2008 after obtaining permission from the warden (N. Saunders) and a licence from Natural England. Opportunistic and systematic sampling was conducted (Table 1).

Table 1: Showing details about the trapping survey.

Sampling site	Type of Sampling	Trapping Effort*	Other Details
Millcombe House	Systematic Longworth Transects	144 (24 x 6)	12 trapping points 10m apart, 2 traps per point
Old Lighthouse	Systematic Longworth Transects	144 (24 x 6)	12 trapping points 10m apart, 2 traps per point
Halfway Wall	Systematic Longworth & pitfalls Grid	720 (72 x 10)	36 trapping points 12m apart, 2 traps & 1 chocolate wax per point
Camping Site/ Pig's Paradise	Opportunistic Longworth & pitfalls Transects	189 (24 x 6 + 9 x 5)	11 trapping points 5m apart,1 or 2 traps per point

*Trapping effort was calculated using the following formula: No. traps/unit area x No. trap checks.

As initial trapping attempts were relatively unsuccessful, we then used a more intensive trapping grid with pitfall traps as well as Longworth traps. Chocolate wax stations were used in an attempt to detect the basic presence of shrews by identifying their teeth marks on the wax (T.Baldwin, *pers. comm.*). Opportunistic sampling was conducted in an area where shrews had been sighted and heard.

Longworth and pitfall traps, provisioned with dry cat food, newspaper and cotton wool to minimise mortalities, were checked every four hours and closed when not being checked. Sex, age, tail length (mm) and mass (g) were recorded and shrews were marked with black hair dye (see Gurnell & Flowerdew, 2006) before release.

RESULTS

Three pygmy shrews were caught, one of which was found deceased. One female adult was caught in a Longworth trap in Millcombe gardens between 7-11pm on 9/6/08. This individual was relatively heavy (weight = 5g; tail length = 37.4mm) compared with the other two, which were an adult male (weight = 4g; tail length = 39.9mm) and an unsexed juvenile (weight = 3.1g; tail length = 37.2mm; deceased) caught in pitfall traps at Halfway Wall on 26/6/08 between 6-10am. They were all trapped close to a fence or wall.

DISCUSSION

Importantly, there was very low trapping success. This was probably due to an ineffective trapping methodology and/or a low density of pygmy shrews. Longworth traps may have been ineffective because the shrews were too light to trigger the trap, they may have passed under the trigger (Bull & Parker, 1997) and a Longworth trap may be an alien object in the natural habitat, thus making pygmy shrews trap shy. The traps may have been too far apart, thus lowering the pygmy shrews' encounter rate with the traps. The trapping location may have been unsuitable because of low densities or even absence of pygmy shrews. The checks at four-hour intervals might have affected trapping success by disturbing the pygmy shrew habitat, particularly as more successful trapping studies checked the traps less frequently, every 12 hours (Bull & Parker, 1997).

Despite the low trapping success, because two pygmy shrews were trapped at Halfway Wall, it can be assumed that they are distributed throughout the island where there is similar habitat (i.e. walls and other linear features in grass or heathland), or at least towards the northern end. This was the first demonstration that shrews occupy an area on Lundy other than the south.

We also found indications that pitfall traps might be more effective at catching pygmy shrews, possibly because of the flaws associated with Longworth traps. Although we have no statistical evidence, in 72 traps (36 Longworths, 36 pitfalls) two shrews were caught in pitfall traps and *none* in Longworth traps.

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Footnote:- On 04 November 2008 a Pygmy Shrew was seen by David George and John Hedger at the North End, north of Gannets' Combe. (OS: SS13261 47653). It emerged from the vegetation when David was photographing a fungus.

Our guidelines for trapping pygmy shrews are available from the Lundy warden.

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