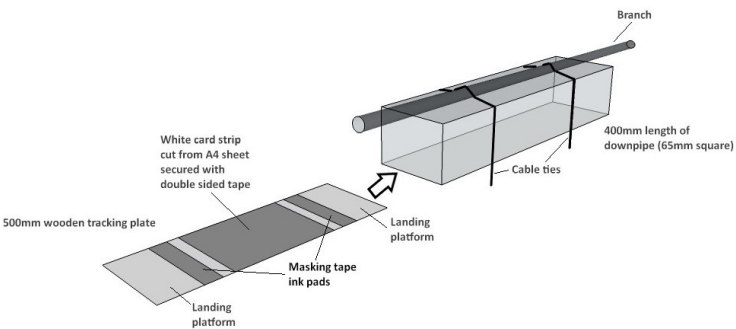


# Guidance for using Hazel Dormouse Footprint Tunnels

This guidance is intended to be used by those who already have some experience of hazel dormouse ecology and surveying, or who have received appropriate training in the use of footprint tunnels. Footprint detection, using tunnels, has been demonstrated to have much higher detection rates when compared with nest tubes and nest boxes. This is not surprising as it only takes a fleeting moment at the entrance of a tunnel for the evidence to be obtained, compared with the amount of time required to construct a nest. Consequently, this method can be used alone or in combination with other methods depending on the purpose of the survey. The tunnels should be secured horizontally beneath branches and bramble stems in similar locations to those chosen for placing nest

## Equipment

The footprint tunnels we used are made of 400mm lengths of 65mm square black downpipe, with a 500mm length of 9mm plywood insert forming a tracking plate with a landing platform at each end. If smaller lengths are used the paper is more likely to become wet. They should be tied to the underside of horizontal branches in dense shrub habitat, (unless they can be securely fastened above.) We used black cable ties of 380mm x 4.7mm.



Centrally, on the plywood insert, is a strip of thick white card (250gsm/350mic ) attached by double-sided sticky tape at each end. Spare cards can be prepared in advance of surveys. A strip of masking tape is placed at each end of the card, but not overlapping it, upon which the tracking medium is painted. No bait is used, so as to reduce the amount of activity by non target species and to reduce the impact of grey squirrels. Number the tunnels on the underside of the tracking plate.

## Tracking Medium

The ‘ink’ is made up by mixing 3 heaped teaspoons of ultra fine pharmaceutical grade activated charcoal powder (deemed safe for dormice) with 15 level teaspoons of olive oil. This makes enough for approximately 50 tunnels. This is applied to the masking tape with an inexpensive square ended artists paintbrush. This should be made up in advance and transported into the field in a suitable container.

## Survey Methodology

The tunnels should be checked and re-inked every 2 weeks. This is because the ink dries out and the papers can become damaged by molluscs or mice, or become mouldy if the weather has been wet. The papers should be changed if there has been any footprint activity or deterioration in quality. Surveying should be avoided during heavy rain as the papers do not stick effectively when wet. The masking tape should be replaced only if required.

N° of tunnels	Survey duration	N° of Checks	Use the table to decide how long to survey for the number of tunnels. Do not count April or November, although surveys can continue into November if preceding months are negative. This gives a 95% chance of detecting dormice, even at low densities.
50	3 months	6	
40	4 months	8	
30	5 months	10	

## Costs

Footprint tunnels using sections of downpipe and a wooden insert cost approximately the same as a nest tube . However, there are additional costs for consumables such as card, charcoal powder, oil and cable ties.

Further information is in Bullion, S., Looser, A. & Langton, S. (2018) An Evaluation of the Effectiveness of Footprint Tracking Tunnels for Detecting Hazel Dormice. *In Practice*—Bulletin of the Chartered Institute of Ecology and Environmental Management, **101**: 36—41.



## How to distinguish *Muscardinus* footprints from *Apodemus* footprints

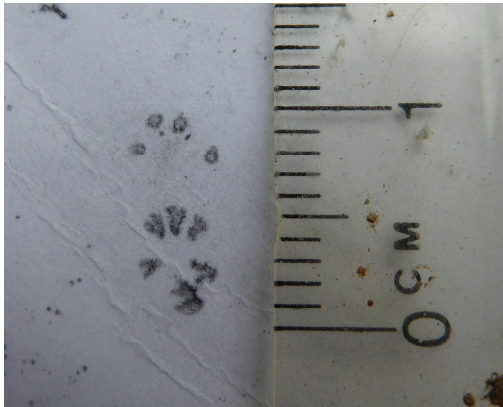
### Hazel dormouse (*Muscardinus avellanarius*)



Front foot



Hind foot



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### *Apodemus* species (Very difficult to distinguish between wood mouse (*Apodemus sylvaticus*) and yellow necked mouse (*Apodemus flavicollis*))



Front foot



Hind foot

