Taking Action for Biodiversity in Communities



HARVEST MOUSE VOLUNTEERS HANDBOOK

Derbyshire Wildlife Trust Winter 2004

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Introduction

Thank you for volunteering to help Derbyshire Wildlife Trust's harvest mouse survey.

Volunteers play a major role in the Trust and we are keen to ensure that you have all the information you require to help us protect the wildlife of this county.

This handbook is intended to tell you everything you need to know about harvest mice in Derbyshire, about the work that Derbyshire Wildlife Trust is doing to help them and about our harvest mouse survey.

However, if there is anything missing or you need any further information or help, please don't hesitate to contact us.

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Good luck with your surveying and always remember the golden rule of volunteering: **Have fun!**

Best wishes

Ruth & Anna

The Harvest Mouse

RECOGNITION

The harvest mouse is Europe's smallest rodent, weighing only 4-6g (about the same as a 20p piece) and measuring only 5-7cm in length.

Its fur is a reddish-golden colour on the upperside and white on the underside with a sharp division between the two areas. In contrast to other mice it has a much more rounded nose and smaller, more hairy ears. It also has characteristic bright beady eyes.

Perhaps its most distinguishing feature, however, is its prehensile tail, which it can use to wrap around objects such as grass stalks in order to improve balance. This, along with a lightweight nature and small front feet, which have toes adapted for gripping, make harvest mice superbly adapted for moving skilfully between the blades of tall grasses and reeds well above ground level.

Droppings tend to be about 2mm long and cylindrical, although in practice it may be difficult to tell them apart from the droppings of other small mammals.

Tracks show four toes on a wide forefoot and five toes on the hindfoot.

HABITAT

Typically, harvest mice were associated with cereal fields. However, whilst they may still be found in such habitats there is now general agreement that the use of other habitats by harvest mouse may have previously been overlooked.

It has been proved that harvest mice can be found almost anywhere where tall grass, reed or sedge species exist throughout the year; including marshes, reedbeds, rough grassland, hedgerows, gardens, bramble patches and even road verges.

The Harvest Mouse

HABITS

Largely nocturnal, harvest mice are extremely active climbers and feed in the stalk zone of long grasses and reeds, particularly around dusk and dawn. Their hearing is acute and they will react sharply to rustling sounds up to 7m away, either freezing or diving for cover. Although their vision is not particularly good they will also react to a change in silhouette.

They usually have two or three litters a year in the wild, between late May and October (or even December if the weather is mild). Most litters are born in August. There are usually around six young in a litter, which are born blind and hairless but grow extremely quickly and start to explore outside the nest by the 11th day. The young are abandoned after about 16 days but continue using the nest. A fresh nest is built for each litter.

In autumn and winter the mice descend from the dying stalks of tall vegetation to live at ground level. During this time hedgerows become valuable sources of food and shelter, with nests of grass being built near ground level.

FOOD

Harvest Mice have high energy requirements and are thought to eat a mixture of seeds, berries and insects. Moss, roots and fungi may also be taken, possibly along with green shoots in spring when other food sources are scarce. They also sometimes take grain from cereal heads, leaving characteristic sickle-shaped remains.

Harvest Mice in the UK



Distribution of the Harvest mouse in the UK Map from the National Biodiversity Network Website

The harvest mouse was first recognised as a distinct species by the naturalist Gilbert White in the 18th Century. However, due to a lack of information it is not known whether the harvest mouse is a native species to Britain or was simply an early introduction. Evidence dates their presence in Britain back at least as far as the Roman period however as they are under-recorded an species their origins cannot be stated with certainty.

Currently, harvest mice can be found from central Yorkshire

southwards, with isolated records from Scotland and Wales which probably result from the release of captive animals. In the last 30 years the population is thought to have decreased to such a degree that they are now considered to be rare, being mostly found in southern and eastern England, with a few records in the Midlands, the north of England and southern Scotland. They are entirely absent from Ireland.

The harvest mouse was commonly recorded in arable fields prior to changes in farming practices during the last century. However, increased mechanisation of harvesting processes caused a sharp decline in the numbers of harvest mouse recorded on farmland. Recent surveys, however, have demonstrated that this resilient little species can quickly colonise new wetland sites.

Harvest Mice in Derbyshire

The status of the Harvest Mouse in Derbyshire is largely unknown. The Sheffield-based Sorby Natural History Society pioneered the technique of searching for abandoned summer nests locally and this has helped to increase knowledge of harvest mouse distribution in the north east of the county: In recent years nests have been found at various wetland and grassland sites, including Pools Brook Country Park and within the Moss Valley (Whiteley, 1996).

Further searches by Derbyshire Wildlife Trust reserve volunteers and members of the Derbyshire Mammal Group revealed nests at a number of Trust Reserves, including Golden Brook, North Wingfield, Erewash Meadows, Carr Vale and Carvers Rocks.

However, few other records exist. South Derbyshire records are few and far between, with isolated records from Shardlow (1990), Church Broughton (1999), Alvaston (1987), Staunton Harold Reservoir (2003) and even adjacent to the new Pride Park Nature Reserve in Derby (2004). In the Peak District even less is known, with the only recent records coming from the Calver - Stoney Middleton area. Currently there are no records from the west of the county. However, as harvest mice have recently been found by Staffordshire Mammal Group at Tittesworth Reservoir in the SW Peak District, there is good reason to suspect that they are present in the west of the county as well.

None of the surveys undertaken so far suggest that Harvest Mice are particularly abundant at these sites, though populations are likely to fluctuate in response to weather conditions. On the positive side, new country parks and nature reserves in east and south Derbyshire seem to have offered a lifeline and there is scope for creating new habitats designed with Harvest Mice in mind. There can be no doubt that there are still a lot more sites out there waiting to be discovered.

Surveying for Harvest Mice

A number of different methods can be used in order to survey for harvest mice. Apart from actually sighting live mammals it is possible to live-trap them, although this can be difficult as they spend much of their time above ground. Hair tubes can also be used, which essentially are lengths of plastic tubing lined with sticky tape on the inside of the roof. These trap hairs from passing mammals which can then be removed for identification. The downside of this method, however, is that whilst it may be easy to identify the hairs as coming from a mouse, it can be much more difficult to assign them to a particular species of mouse. Droppings and tracks, if they can be found, can also be difficult to distinguish from other small mammal species, especially for the amateur!

Records can also come from dead animals. Remains can be found in owl pellets, although traditionally they constitute a very small percentage of the total animal remains found in pellets. Dead harvest mice have also been found in discarded bottles, however it is cat kills that often provide people with their first view of a harvest mouse.

Searching for abandoned summer nests is arguably the best way to survey for harvest mice presence at a site, as the harvest mouse is the only British mouse to build nests of woven grass well above ground. Looking for nests also requires less effort than live trapping the animals themselves and allows a number of sites to be surveyed in one day.

REMEMBER very little is known about the distribution of harvest mice in Derbyshire.

You will almost certainly **not** see a harvest mouse while carrying out your surveys. It is possible that you will not find any nests either.

If this is the case, please don't be disheartened. Negative results are just as important as positive ones as they help to identify habitat preference and future areas for colonisation. It is hoped that the results of the survey may begin to help us to understand the habitat requirements of harvest mice so that land management and habitat creation can be tailored to benefit these endearing creatures.

Where is my site?

A number of sites around the County have been pre-selected as containing suitable habitat and therefore having the potential to hold harvest mouse populations. Furthermore, some sites were previously known to contain harvest mouse populations but we do not know if such populations still exist. We would like each volunteer to adopt one or more of these sites. Additionally, ivf you so wish, you can also choose other sites to survey.

Included in your surveyors pack you will find a copy of your site ID form: this shows the position of your monitoring site on an OS map, as well as the site number and grid reference. Once on site, the site map will show you the area to survey.

Site maps not initially included in your pack will be sent to you in due course.

If you have any questions about your monitoring site or are unable to find it, please contact us.

Whilst you are out and about, if you see any other suitable areas of habitat and wish to undertake further surveys, please contact us.

When do I survey?

You can undertake your survey as soon as you wish after the training day, just make sure you fill in the date clearly on the survey form.

As nests can be easily destroyed by winter storms, we would ask that you complete your survey by the end of December and return all completed survey forms to us as soon as possible after you have completed your survey, and no later than the end of December.

This will allow us to collate the results and produce a report, of which you will get a copy.

Before going out

Check the weather forecast.

Make sure you have read this handbook. In particular, familiarise yourself with the section on Health and Safety.

We recommend that you **DON'T SURVEY ALONE.** If you must, make sure that you tell someone where you are going and when you expect to be back.

Carry a mobile phone, if you have one. Carry it with you, **DON'T** leave it in the car! If relevant, contact the landowner to tell him/her that you are coming.

Take a copy of the survey form or a notebook to write down all the necessary information.

Checklist

Use the following checklist to make sure you have everything you need. This list may seem long, but most items are things you would normally take with you for a walk in the Peak District.

- Appropriate OS map to locate your site
- · Letter explaining the survey in case you are asked
- Notebook, or supply of survey forms, and pencil
- Measuring tape (for measuring size of nest and height above ground)
- Mobile phone (if you have one)
- Grass identification sheet
- Stout walking stick
- Wellies or other suitable footwear (the sites may be wet or damp)
- Waterproofs
- Towel and spare set of warm clothing in case you get wet
- First Aid kit
- Bottle of clean water for washing hands

What to look for: Nests

The characteristic breeding nests of harvest mice provide obvious signs of their presence and are unlikely to be confused with other types of nest. They also tend to stand out more in winter when the surrounding vegetation dies back.

Nests can vary in size from 10cm in diameter for breeding nests to only 5cm for non-breeding nests (cricket ball to golf ball-sized).

Nests are built from the leaves of plants, which have been shredded lengthways into strips 1-2mm wide, with the strips remaining joined at the base of the leaf. The strips are then woven together to form the framework of the nest, with other leaves sometimes also being bound into the wall. The leaves that are used to build the nest are left attached to the plant so that they support the nest.

The nest is lined by finely shredded grass or thistle down. Whilst in use there will be no obvious entrance as the mouse closes the hole after passing through. However, once the nest has been abandoned, there may be a conspicuous hole.

If in doubt as to whether the nest was built by a harvest mouse, remove it (making certain it is not occupied!) and send to us for identification along with your survey sheet(s). Don't forget to label the nest so we know what site it came from.

Harvest Mouse Nest (© Anna Evans 2004)



Where to look

Harvest mouse nests tend to be located in habitats with dense vegetation such as rough grassland, reedbeds, cereal fields, hedgerows, grassy road margins, ditches and brambles.

The two species of grass most favoured are cocksfoot (*Dactylis glomerata*) and reed canary-grass (*Phalaris arundinacea*), however any stiff leafy grass may be used for nest building. Harvest mice do not favour thin grasses (where there is not enough cover for their nests), short grasses, or those where the stems are too weak to support their nests.

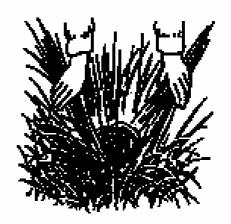
The height of the nest above the ground depends on the supporting vegetation. If the nest is built in reeds or cereals, for example reed canary-grass, they will tend to be built about halfway up the leafy stems and could be anything from 30cm to over a metre above ground level.

If the nest is built in grasses which form tussocks of leaves, for example cocksfoot or tufted hair grass, the nest is usually located on top of the tussock between the flowering stems, or occasionally under the overhanging leaves of the tussock. In this case, the nest will only be about 10cm above the ground.

Use the enclosed grass identification guide to identify suitable grasses.

Location of harvest mouse nests in reeds/cereals (left) and tussocky grasses (right) (Mammals Society drawings from 'How to Find and Identify Mammals')





Survey method

When you arrive at your site check its condition, paying particular attention to any potential hazards such as water, uneven surfaces etc, to ensure that it is safe to start the survey. If you consider the conditions to be unsafe, come back another day.

If necessary, speak to the landowner before accessing their land.

Look carefully around your site for areas of suitable habitat (reedbeds, sedges, rushes, rough grassland, hedgerows, brambles or scrub). Once you have identified a suitable area of habitat, mark the approximate size and location of it on the map and begin to search for nests.

If you find any nests, please indicate their location on the site map with the corresponding number from the survey form (1, 2, 3 etc.) If you are unsure that what you have found is a harvest mouse nest, cut it out (making sure it is not occupied!) This can be posted to the Project Officer together with your survey form.

Complete the survey form with the following information:

Site name, grid reference and landowner details (if required)

Your name and contact details and the date of the survey

Diameter of nest — measure both height and width.

Habitat — select the option from list 1 that most closely resembles the habitat in which the nest is located. List 1 is found on the rear of the survey form

Dominant plant species — select the species from list 2 that is most abundant in the area around the nest. List 2 is also on the back of the survey form. If you cannot identify the dominant plant species, send a dried, pressed example to the Project Officer for identification

Supporting vegetation — select from list 2 the species in which the nest is built (this may be different from the dominant plant species). Again, if you cannot identify the supporting plant species, send a dried, pressed example to the Project Officer for identification

Height of nest above ground — measure from ground level to the bottom of the nest.

Height of supporting vegetation — measure the average height of the vegetation in which the nest is located.

Notes — Answer the questions here to the best of your ability and note down anything else you think is relevant and/or interesting (e.g. if you actually see a harvest mouse whilst surveying!)

JM

JR

JW

OB

600

www.ordnancesurvey.co.uk

Using the National Grid

1 The National Grid provides a unique reference system, which can be applied to all Ordnance Survey maps of Great Britain, at all scales.

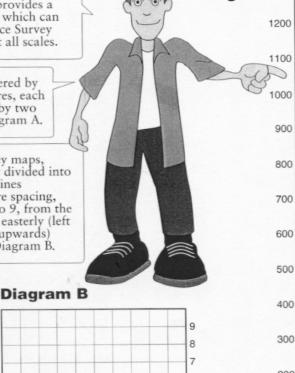
2 Great Britain is covered by 100 kilometre grid squares, each grid square is identified by two letters, as shown on Diagram A.

3 On Ordnance Survey maps, these squares are further divided into smaller squares by grid lines representing 10 kilometre spacing, each numbered from 0 to 9, from the south-west corner, in an easterly (left to right) and northerly (upwards) direction, as shown in Diagram B.

8

6

3



5

4

3

Diagram A

HO HP JL HL HM HN JQ HR HS HT HU HQ HW HX HY HZ JV NC ND NE OA NB

NE NG NE NJ NK OF OG NL NM NN NO NP OL OM

NQ NE NS NT NU OQ OR
NV NW NX NY NZ OV OW

SA SB SC SD SE TA TB
SF SG SH SJ SK TF TG

300 SL SM SN SO SP TL JM

SQ SR SS ST SU TQ TR

300

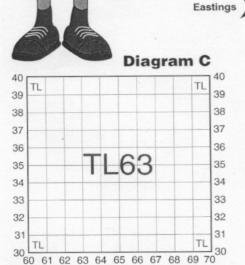
4 Using this system, you can identify a 10 kilometre grid square. For example, here is

200

TL63. After the letters you quote the Eastings (6) first, then the Northings (3).

If you have trouble remembering say... stairs

Along the hall, THEN



corner

On Ordnance Survey Landranger® maps, you can find the two grid letters TL on the legend, or on the corner of the map, and the grid has been further divided into 1 kilometre intervals, as shown in Diagram C. You can estimate distances between the grid lines to give a more precise reference.

6 Turn the page and see how easy it is to use a 6 Figure Grid Reference to pinpoint a place on the map...



www.ordnancesurvey.co.uk

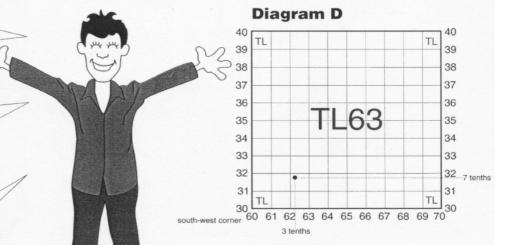
Using the National Grid continued The 6 Figure Grid Reference

7 The 6 Figure Grid Reference is very useful to locate a particular place on a map.

8 By estimating the eastings and northings to one tenth of the grid interval, you can specify a full 6 Figure Grid Reference, accurate to within 100 metres on the ground...

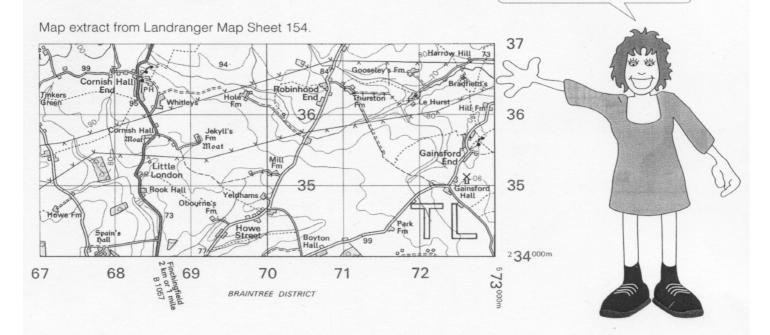
9 All you do is estimate how many tenths away from the grid your point falls. For instance, the point in Diagram D is 3 tenths east of grid 62 and 7 tenths north of grid 31.

10 Once again, reading from the south-west corner, quote all the eastings first, then the northings. The 100 metre grid reference of the point in the diagram is shown like this: TL 623317.



11 Here is an extract from a 1:50 000 scale map. Use the National Grid Reference System to find:

The Church at TL683365 The Windmill at TL726350 Mill Farm at TL701352



Customer HelpLine: 08456 05 05 05 Textphone: 023 8079 2906 (hearing impaired users only please) Fax: 023 8079 2615 E-mail: enquiries@ordsvy.gov.uk Web site: www.ordnancesurvey.co.uk

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Landowners

For many sites, the landowner has already given permission for a harvest mouse nest survey to take place. We will let you know if this is so for your site and will provide you with a copy of the permission slip and/or a contact phone number if the landowner wants to know when you will be undertaking the survey.

However, in a few cases we have been unable to trace landowners. Where this is the case we have tried to select sites that are on public footpaths. If your survey site is not on a public footpath, try to seek permission to carry out the survey from the landowner. The best way to find the owner is to go to the nearest farm house or ask at the local post office, pub or village shop.

On finding the landowner, introduce yourself as a volunteer for Derbyshire Wildlife Trust's Taking Action for Biodiversity Project and explain that all you wish to do is to check suitable areas of their land for signs of harvest mouse presence. Offer to show them the 'letter to landowners'.

If given permission, arrange a suitable time to survey (either straight away or at a later date). If possible try to fit in with the landowners' wishes. If the owner wants you to telephone before you survey, take their number.

If they seem particularly interested, suggest they contact Derbyshire Wildlife Trust for more information or take their details and pass them on to us. Similarly, if they ask you questions about harvest mice, the Taking Action for Biodiversity Project or the Trust which you are unable to answer, suggest they contact the Trust. Furthermore, if the landowner wants to know your results, please let them know or tell us so we can talk to them on your behalf.

If they tell you about anything of interest on their land or indeed anywhere else in the county, please note this information down. In particular, any information about rare or threatened species such as water vole, otter, mink, bats, badger, black poplar, brown hare, reptiles, crayfish, great crested newt or rare birds would be extremely useful to the Trust. Information on the location of any veteran (ancient) trees would also be appreciated. Try to obtain dates where possible, and then pass this information on to the Trust along with your survey results.

If you are unable to get permission to carry out the survey work, please contact us. We will try to offer you an alternative site.

Remember: it is important for the success of the Project to maintain good relations with landowners and other users

Health & Safety

Derbyshire's countryside can be a dangerous and unpredictable place.

However, most of the advice given in this section is common sense and, if you follow it and are generally careful, you should be perfectly safe and enjoy yourself.

IMPORTANT

Always have regard for your personal safety: it is more important than survey results!

We recommend that you **DO NOT SURVEY ALONE**. If you must, make sure that you tell a responsible person where you are going and when you expect to return. Make sure you check in with them on your return, and that, if you fail to return, they will know to raise the alarm.

Before attempting to carry out a survey, make sure you have read and understood the health and safety information provided in this handbook. Using this information, make an assessment of the safety of the site and of the activity you are taking part in.

If you feel it is too dangerous, **DO NOT ATTEMPT TO CARRY OUT A SURVEY.**

Section 1 — Hazards

WORK ACTIVITY: Surveying in a range of habitats

PHYSICAL HAZARDS: Slips/trips/falls

Cuts/abrasions/bruises

Uneven/wet/soft work surfaces Water – losing balance, drowning

Strong currents High water levels

River/stream/canal banks – steep/crumbling surfaces

Other people, pets, animals

Vehicles/roads Lone working

ERGONOMIC HAZARDS: Stress and fatigue

BIOLOGICAL HAZARDS: Weils's disease (leptospirosis)

Lyme disease

Tetanus

Hypothermia/exposure from extremes of cold/heat

Toxicara

Phytophotodermatitis

SECTION 2 - Main Hazards

Injury to monitor from tripping/falling/slipping etc. on uneven, wet, marshy ground

Injury amongst dense/tussocky vegetation where fallen branches and holes can be hidden and ground can be slippery

Cuts/abrasions/bruises from contact with natural vegetation and/or man-made objects (e.g. barbed wire)

Working along riverbanks/streams/canals these can be steep/uneven/crumbling leading to injury or stumbling/falling into water.

Falling in water/damp areas can lead to cold – hypothermia/drowning

Water levels can rise after wet weather increasing the risk of working in water.

If working alone and/or in remote situations accidents can happen. This may make it difficult to receive help

Injuries from other people, animals or pets

Contracting Weil's disease (leptospirosis) from infected rat's urine along watercourses

Contracting Lyme Disease if work takes place in area infested with deer or large mammal ticks

Contracting toxicara from dog faeces

Contracting phytophotodermatitis from skin contact with some plant species

Exposure to extremes of temperature – cold/wet in winter, sun and high temperatures in summer

SECTION 3 – Safe Working Practices

Precautions required

If you feel that you will not be able safely survey/work at a site, no matter what the conditions, do not attempt to do so.

Never attempt to reach parts of your site if you consider it dangerous to do so.

Take note of the weather forecast before you set off. Do not be caught unawares by sudden changes in the weather.

Carry a mobile phone, if you have one and check that a signal is available. If you do not have a mobile phone, locate the nearest public telephone before starting work.

Avoid confrontations with members of the public by, wherever possible, walking away from confrontational situations.

Work in pairs whenever possible. **DERBYSHIRE WILDLIFE TRUST RECOMMENDS THAT YOU NEVER WORK ALONE.**

Stop your work before daylight fades.

Wear suitable clothing and footwear.

If clothing becomes wet, particularly in winter weather, change into replacement dry clothes as soon as practicable to reduce risk of hypothermia. **ALWAYS REMEMBER TO TAKE SPARE CLOTHES**

If working by watercourses, beware of soft and crumbly banks. Be especially careful where banks are steep, even if not very high.

Beware of muddy or marshy areas which may be softer and deeper than they look.

It is advisable to use a strong stick to help keep your balance in muddy or marshy areas, and to help check water depth in front of you. It helps to marks your stick with a line at Wellington depth. Alternatively a ranging pole is excellent as it is already marked up.

Beware of holes, branches etc. hidden amongst vegetation.

Beware of stepping on logs - these may be rotten and unstable.

Check that if there is stock in the field it is safe to enter - ask the landowner before carrying out work whether stock/bulls are safe.

Beware of pools which may be very deep. DO NOT USE WADERS.

Wet rocks, logs and vegetation can be very slippery.

To reduce the risk of contracting Weil's Disease observe high standards of personal Protecting Wildlife for the Future

hygiene at all times. After working in dirty water, coming into contact with anything contaminated with sewage or animal faces, wash your hands and forearms with soap and water. This is particularly important before eating, drinking or smoking and after handling contaminated clothing or equipment. Any such equipment should be rinsed and dried as soon as possible.

Always clean cuts thoroughly and cover with a waterproof plaster.

Do not rub your eyes, nose and mouth when your hands are wet or dirty, or bite your nails.

If you have any feeling of being off-colour or develop flu-like symptoms following contact with water, you must consult your doctor and make sure they know that you may have been at risk of Weils Disease.

Make sure your Tetanus booster is current.

If you come into contact with dog faeces, ensure that you clean up as soon as reasonably practical and wash hands thoroughly before eating and drinking.

Ensure that you are aware of the dangers of deer ticks, how they should be removed, and of the symptoms of Lyme's Disease. If symptoms become apparent medical help must be sought.

Beware of giant hogweed. This causes severe skin irritation, swelling and blistering in sunlight. Ensure you can readily identify it. DO NOT touch it! Go to your GP if you suffer blistering.

Hemlock water-dropwort sap can also cause skin irritation, avoid touching the plant. Where risk of phytophotodermis may exist gloves should be worn.

Links

The following websites may prove useful and/or interesting.

THE HARVEST MOUSE

mice

http://www.wildlifetrust.org.uk/cheshire/

hmouse.htm

The Cheshire Harvest Mouse Project

http://www.theworldofmice.co.uk/ Information on mice in general

MAMMALS

http://cgi.european-mammals.org/php/ Interactive Atlas of European Mammals

mapmaker.php

Http://www.abdn.ac.uk/mammal/ The Mammal Society Website

http://www.mtuk.org/ The Mammal Trust UK

DERBYSHIRE WILDLIFE

www.derbyshirewildlifetrust.org.uk Derbyshire Wildlife Trust

www.derbyshiremammalgroup.com Derbyshire Mammal Group

groups.yahoo.com/group/ Local natural history email newsgroup derbyshirenaturalhistory

www.sorby.org.uk The Sorby Natural History Society, includes

an online mammal atlas for the Sheffield and

North Derbyshire area

Further Reading

Gillie Sargent & Pat Morris; 'How to find and identify mammals' (2nd Edition). The Mammal Society (available from the Mammal Society website)

Stephen Harris; (1979); 'Secret Life of the Harvest Mouse'; Hamlyn

David Macdonald & Priscilla Barrett; 'Mammals of Britain & Europe'; Collins Field Guide

Preben Bang & Preben Dahlstrom (editors); 'Animal Tracks & Signs'; Oxford University Press

Derek Yalden; 'The History of British Mammals'; Academic Press

Readers Digest Association; 'Field Guide to the Animals of Britain'; Readers Digest