

**Besselsleigh Wood**  
**Small Mammal Survey Report**  
**June 2014**  
**Dr. Amanda Lloyd**  
**Oxon. Mammal Group**

## **Summary**

A small mammal trapping survey was carried out in Besselsleigh wood in June 2014. This survey was commissioned by Besselsleigh Wood Group and carried out by Dr Amanda Lloyd with help from Oxon Mammal Group and Berkshire Mammal Group. Trapping took place over one week and covered a 250m transect from one edge of the wood to the other going east to west.

## **Introduction and methods**

In order to inform the community prior to any changes in forest management, a small mammal survey was carried out in June 2014 by Dr Amanda Lloyd, a mammal ecologist. This survey essentially comprised a week of small mammal trapping to determine what species were present in Besselsleigh wood.

The trap transect followed a straight line through the woods from SP45015, 01767 (on the margin of the woods in farmland) to SP44791, 01565 (at the opposite woodland edge), an approximate area of 250m<sup>2</sup>.

At 10m intervals, a bamboo cane was consecutively numbered and stuck in the ground to mark out where the traps were to be placed. At each bamboo cane (hereafter referred to as a trap station) 2 Longworth traps were set on the ground within 0.5m of the trap station. A total of 25 trap stations, which equates to 50 Longworth traps were used in this survey.

Each Longworth trap was baited with food and nesting material to ensure any animal caught had water, food and insulation until the trap was emptied. The food supplied included seeds, a generic rabbit food mix, apple and most importantly (for shrews) castors, which are in fact the pupae of blow-flies. All the traps were covered over with neighbouring vegetation to help conceal them and add extra insulation.

The traps were set on Monday night at 19:00 hours, traps were then checked at 08:00, 14:00 and again at 19:00 on Tuesday, Wednesday and Thursday for caught animals. The last trap round was Friday morning at 08:00 at which point all the traps and trap stations were taken out of the wood. In total the trapping survey covered 4 nights. As the days are quite long during this time of the year and the weather was warm, the 14:00 and 19:00 hour trap rounds were included for welfare reasons and also to capture species which are not strictly nocturnal (voles).

At each trap round any sprung traps were emptied into a bag, and the animals processed to provide data on species caught, sex of individual, and weight. Each animal caught was given a temporary mark to identify it if it was caught again. These traps were then re-stuffed with bait and bedding and re-set for the next trap round.

## **Results**

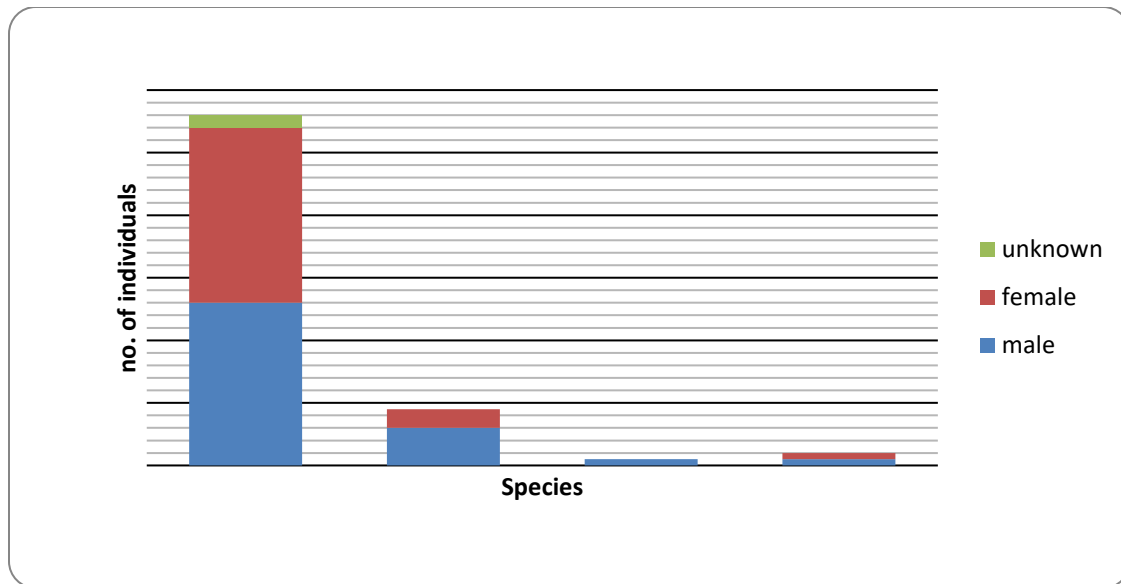
Two trap stations were removed on welfare grounds after the first night as cows were in the field just outside the wood and were able to gain access to the field margin. This essentially reduced the total transect to 230m.

One trap station, 12, was made redundant as a bank vole gave birth in the trap on the Tuesday morning. The mother and her litter were placed back in the trap with the door locked open so she could come and go as she pleased and remove her offspring if necessary. The second trap at this station was also locked open to reduce the likelihood of re-trapping this individual. These traps were checked at every trap round to ensure the doors were still open and only checked thoroughly on the Friday morning to determine if the female and her litter was still in residence. The female had successfully re-located her litter by Friday morning. This female is counted in the data but not her offspring.

A total of four species were caught: bank vole, wood mouse, common shrew and yellow neck mouse. The minimum number alive at the time of trapping was 56 Bank voles, 1 common shrew, 9 wood mice, and 2 yellow neck mice. Minimum number alive was determined by counting the number of new individuals caught during the entire week, recaptures (i.e. animals that were marked) were excluded from this statistic. There were 4 escapees where in some cases we could ascertain whether they were a newly caught individual or not, but in most cases they escaped prior to being sexed or weighed. We had five pregnant and/or lactating females caught in the traps.

All but 5 (stations 1, 8, 9, 13 and 14) trap stations were used by animals with traps being sprung and small mammals being caught. Trap station 9 interestingly had a family of beetles in residence, and their movements had in fact sprung the trap.

Below is a chart of the species that were caught along with the sex ratio of the animals (this data is only based on newly caught individuals).



We had a high number of recaptures during the week, with some individuals being re-caught every day. One bank vole was caught 5 times, the other animals were caught four or less times.

In total 115 animals were trapped and processed.

Although not entirely accurate, from the data an estimate can be made on the population size of small mammals in 10ha of wood. In total for the 4 species caught approximately 27,200 animals could be found within 10ha. This breaks down to 82.4% of the total being bank vole, 13.2% wood mouse, 1.5% common shrew and 3% being yellow-neck mouse. These values are an estimate and should not be taken as a definite as many places within the 10ha of wood will be unsuitable for small mammals for example places without cover or streams/brooks.

### **Discussion of form and Basic ecology of small mammals caught**

The main “nursery”, where juveniles were caught consisted of an area with log piles, Himalayan balsam and sedges. The majority of animals caught, unsurprisingly, were in areas that had high undergrowth of either bracken or bramble. More open areas devoid of vegetation tended to not have animals using the traps. This is to be expected as open areas increase the likelihood of predation by owls and other predators.

Towards the end of the trapping week we started to get animals using the last 3 trap stations (23, 24 and 25). The reasons behind this are unknown but several suggestions could be made; the food in this area was high, animals were more trap shy or high predation rates meant that the small rodents stuck close to well covered run-ways that meant they did not come into contact with traps or in fact the traps were not placed in the best possible position to capture any passing animals. Without further study this is something we cannot say for certain.

The most commonly caught species was the bank vole, this does not mean that the population density of the other small mammals is low. With trapping you can only really catch the “trappable” population, i.e. the individuals who are inquisitive enough to be lured in. Using a suite of survey methods (feeding signs, camera traps, footprint tunnels etc) is the best possible way to get a more accurate picture.

All the small mammals caught are prey for a number of predators; fox, owls, stoat, weasel and as such, their population size can be critical for the survival of these top predators, tawny owls especially, where vole numbers can influence the number of surviving chicks.

## **The Mice**

### **Wood mouse (*Apodemus sylvaticus*)**

The wood mouse is a very common yet under-recorded species. Found throughout the British Isles, even on the smaller islands, the wood mouse is our most common and widespread wild rodent. It is an inhabitant mainly of woodland and fields but is highly adaptable and is found in most habitats. Wood mice are essentially nocturnal but some individuals may venture out in daylight.

Adult weight 13-27g, head and body length = 81-103mm, life span 2-4 years. This species is fawny brown in colour, with large black eyes and ears which stand away from the head. The tail is mainly used for balance and can be easily stripped as an escape mechanism from conspecifics and predators.

The breeding season is from Mar-Oct, with a gestation of 23 days and a litter of 4-5 pups which are weaned between 18-22 days. These juveniles reach sexual maturity at around 12g.

The wood mouse social system breaks down and reforms annually and there is generally only 1 (long) breeding season – females therefore set up territories free from parental or group constraints. The wood mouse breeding system is said to be female-defence polygyny in woodland and sand-dune habitats, this is also true of arable ecosystem. In this system of female-defence polygyny, as the availability of food increases, the female home range size decreases. This reduction in home range size can increase the population density.

This species is omnivorous.

General home range size of wood mouse, males = 1.44ha (breeding season) and females = 0.49ha.

This species can be found in fields, hedgerows, woodlands and gardens

### **Yellow necked mouse (*Apodemus flavicolis*)**

The fur is brown on the back and white on the underside. A complete band of yellow fur is evident across the neck area, a reasonably reliable distinction from the similar wood mouse. Again this rodent has large ears, protruding eyes and long tail. The yellow neck mouse is slightly larger than the wood mouse.

Size: 95-120mm; Tail 77-118mm and Weight: 14-45g

The Yellow necked mouse also uses hedgerows but is mainly a woodland specialist and probably presents little competition to voles or shrews. Will compete with wood mouse however where their distributions overlap.

These mice are largely nocturnal and are expert climbers. They make full use of the woodland floor and canopy when moving. Home range sizes are generally slightly larger than those of wood mice and home ranges overlap between and within the sexes.

Feeding primarily on tree seed, fruits, some green plants and invertebrates, their diet is very similar to their close relative the wood mouse.

Found over a restricted range in southern Britain, from Dorset across to Kent and Suffolk, and along the Severn basin from Gloucestershire to Staffordshire. Its distribution is certainly associated with long established woodland sites, but within its range it can turn up in hedgerows and gardens.

## **THE VOLES**

Consisting of the short-tailed field vole and the bank vole. No field voles were found within the wood, which is not surprising as this species tends to prefer field margins and grassy areas. If the trap stations outside the wood had remained field voles may have been caught.

### **Bank vole *Myodes glareolus* (formerly *Clethrionomys glareolus*)**

The bank vole has red/brown fur above with cream/grey fur below. The species has a rounded snout and small eyes and ears (ears usually not visible and are hidden under fur). Tail length is 50% of head and body length.

Head and body length 9-11cm, tail length 3-7cm.

The diet consists mostly of plant material, including green leaves, seeds, fruits and small amounts of fungi, roots, flowers and moss.

The bank vole is active by day and also at night and it does not hibernate in winter.

Females maintain territories which may overlap somewhat, and males occupy larger territories covering those of several females. The breeding season lasts from Late April to September.

Females appear to prefer dominant males and may actively avoid other vagrant males. The gestation period averages 21 days, being longer if the female is still lactating from a previous litter.

## **THE SHREWS**

Insectivorous species consisting of common and pygmy shrews – both small sized with the pygmy shrew being Britain's smallest mammal at 2g. No pygmy shrews were caught, this does not necessarily mean pygmy shrews are not present in the woods; it may be that the traps were not set light enough to catch these 2g mammals.

### **Common shrew (*Sorex araneus*)**

It is 55–82 millimetres long and weighs 5–12 grams, and has velvety dark brown fur with a pale underside. Juvenile shrews have lighter fur until their first moult. The common shrew has small eyes, a pointed, mobile snout, and red-tipped teeth.

Shrews are active day and night, but mostly after dark. They are active most of the time, resting for only a few minutes between burst of activity.

The common shrew is found in woodlands, grasslands, and hedgerows. They are extremely territorial unlike the other small mammals mentioned above.

The shrew's carnivorous and insectivorous diet consists mostly of insects, slugs, spiders, worms, amphibians and small rodents. Shrews need to consume 200-300% of their body weight each day in order to survive. A shrew must eat every two to three hours to achieve this goal. This means that a shrew may starve if it finds no food for as little as 5 hours. They do not hibernate in the winter months because their bodies are too small to hold sufficient fat reserve.

