

Mammal Surveys – Varteg - July 2018

Introduction

There are about two dozen species of mammal that may be passing through or living on our Varteg site. The surveys were to see if we could find evidence for any of these. In doing it was anticipated that the scope of the project may have widened to include species of invertebrate, amphibian, reptile and bird.

Over ten years ago we conducted live trapping surveys using Longworth traps in which we found that Wood mice, Bank voles, Field voles, Common shrews and Pygmy shrews were present among the trees or in the open moorland areas. More recently we have deployed a Hedgehog tunnel and Camera trap (Trail camera) from which we have detected mice (probably Wood mice) and Shrews by their footprints and camera footage. There have also been sightings of other species including a dead, half-eaten mole and a mystery animal on the camera trap, and signs of rabbit or hare damage near the bases of small saplings.

The types of mammal that have been recorded or could be expected to be occur in South Wales are:

- Insectivores:
 - Hedgehog
 - Mole
 - Common Shrew
 - Pygmy Shrew
- Bats
- Rodents
 - Grey Squirrel
 - Bank Vole
 - Field Vole
 - Wood Mouse
 - Brown Rat
- Carnivores
 - Red Fox
 - Pine Marten
 - Stoat
 - Weasel
 - Polecat
 - Badger
- Deer
 - Roe
 - Fallow
 - Muntjac
- Lagomorphs
 - Rabbit
 - Brown Hare

Some species that are very unlikely to occur, but Varteg is within their broad range, are Hazel Dormouse, Yellow-necked Mouse, also the riparian species of Water Shrew, Otter and Mink.

Methodology

There are several ways to check for the presence of mammals in an area and the following four methods were considered, plus a fifth if owls or other raptors were found to be using the site.

- Visual search for sightings & signs
- Hedgehog tunnels, track tubes, hair tubes and camera traps
- Bat detectors
- Longworth traps
- Analysis of Owl pellets

1. Visual search for sightings & signs

One dedicated survey for mammal signs was conducted by a member of the team along the fence-line from the gate near 'Sheila' plot, alongside 'Eirwen', 'Titania', 'Pan' and 'TWZ'. The only other searches for sightings and signs occurred as we searched for suitable places to set out the equipment. Anything of interest was recorded, whether or not mammal-related.

The method employed was as follows:

- Look on the ground for droppings, scat, latrines and footprints in mud, woven grassy nests, nibbled grassy sward, nibbled nuts and pine cones, dead animals, bones, shells and carcasses, piles of freshly exposed soil.
- Look on the ground for runs, small or like narrow footpaths through grass, either alongside linear features or where they cross under linear features – bare ground excavated under a fence and wire pushed up
- Look for hair caught on the wire especially at these crossing points
- Look for trees or posts with bird poo splashed down then search for any owl pellets there.
- Look at trees for signs of burrowing at base, nibbled bark on trunk, browse line, dreys in crooks, woven nests, holes and cracks in bark of older trees
- Sniff for foxy smells.

2. Hedgehog tunnels, track tubes, hair tubes and camera traps

13 Hedgehog tunnels, 30 track tubes, 20 hair tubes and four camera traps were deployed into seven different plots of trees, ranging in planting time from 1992 to 2006. The tunnels and tubes were baited with a mixture of bird seed, peanuts, peanut butter, sliced hotdog sausages and dried mealworms.

The tunnels and half of the track tubes and half of the hair tubes were put on the ground near tree bases or along linear features or runs in the woodland and more open areas. The other tubes were secured onto branches in various plots. The camera traps were strapped to nearby trees to view four of the tunnels. All items were numbered with marker pen and positions were recorded using GPS.

The tunnels were to tempt in medium-sized mammals e.g. hedgehogs, polecats, squirrels as well as small ground animals mice and record their footprints on the paper after they had investigated the bait.

The track tubes were an assortment of sizes and shapes and diameters of tube, including short sections of plastic drainpipe, dormouse nesting tubes consisting of a wooden base and end and a square cross section corrugated plastic tube, with a white card and an inked card inside. Even flexible extractor-fan ducting was used. These were fashioned for small mammals like shrews and mice (up to 25-35mm diameter) and larger for other mammals. Similarly, the hair tubes were short sections of drainpipe or larger cylindrical items with a strip of double-sided sticky tape stuck to the roof of each tube.

Twice a day all were checked and reset with bait as necessary, collecting used tracking cards from tubes, and paper with footprints from tunnels, any hairs stuck to sticky tape and SD card from camera traps, recording where evidence was found.

3. Bat detectors

This survey did not take place due to lack of time in the evenings.

4. Longworth traps

This survey did not take place due to the very hot weather. It was felt that the welfare of any animals caught in the traps could not be guaranteed as they could have been in the traps for a long time from late afternoon until mid-morning the following day.

5. Analysis of pellets

One set of fur ball pellets were found below a post with white splashes of bird poo in the more open woodland area. These were later soaked and dissected. Some pieces of broken bone were found in the grey fur (individual hairs were black at one end and white at the other) which may have come from a rabbit or squirrel. The bones were certainly not from a small mammal like a mouse.

Results

1. Visual search for sightings & signs

The fairly whole, articulated wing of probably a Helmeted Guinea Fowl found in Cresswell plot. This was identified from our photographs by Granville Pictor (personal communication).

Black primary feathers, still articulated (Corvid?)

White feathers, downy feathers

A foot long, foot and leg of bird in Eirwen plot. Could belong to the Helmeted Guinea Fowl ?

This was identified from our photographs by Granville Pictor (personal communication).

Droppings, probably fox.

Droppings, probably wood mouse/bank vole – on ground-based tracking tube inked cards

Runs and small holes - Susan's survey beside fence. Voles, shrews, mice, small mustelids?

Dead hare (up in a tree!)

Droppings, rabbit.
Fur balls, possibly owl or bird of prey.
Old wasp's nest
Oak debarking, probably squirrel
Live Vole in open tussocky grass between Mansi/Mike plots
Nibbled pine cones, probably squirrel feeding
Acorn shell opened, probably squirrel

2. Hedgehog tunnels, track tubes, hair tubes and camera traps

Most of the hedgehog tunnels showed footprints, probably of wood mouse or bank vole.

All but one of the ground-based track tubes contained prints, probably of wood mouse or vole. None of the track tubes in tree branches showed prints, perhaps indicating that the prints on the ground were of ground-based mammals i.e. voles, rather than arboreal wood mice. Prints in the ground-based tubes in more open ground (Cariad) may have been of field voles, whereas those in more densely wooded plots are more likely to be of bank voles.

A few of the hair tubes contained hairs, possibly of wood mouse, vole or shrew. Other items caught on the sticky tape were a black 'hair' - not fox whisker, could be spider leg as jointed, or grass-type, or beetle antenna?

None of the camera traps recorded any mammals. There was footage of a robin on top of a hedgehog tunnel.

Discussion

The scope of the project proved rather wide given the few days available. It took a long time to put all the equipment out, choosing and recording all the different places. Given that many of the results showed similar footprints, fewer tubes could have been used to obtain the same level of results.

It has been difficult to identify accurately small mammal footprints and the survey would have benefited greatly from more camera traps and better positioning of them to see animals entering or leaving tunnels and tubes.

More effort could have gone into searching for signs of mammals in several different habitats on the site.

Had Longworth traps been used there would have been more confidence in the identification of species present, but at the expense of animal welfare. The use of Longworth traps on the earlier surveys on the site had established the presence of wood mice and bank voles in the wooded areas, and field voles in the fenced but treeless parts, so a less invasive approach seemed preferable for this survey.

The equipment used this time was not expensive to make or hire which was a clear advantage to this kind of survey. As a member of a County Mammal Group the dormouse tubes, hedgehog tunnels and one of the cameras were borrowed (a returnable deposit was required), other cameras belonged to/were borrowed by the group, and the other various tubes were acquired from a kitchen refit. The pre-inked tracking cards were the main expense and were purchased online and added into the dormouse tubes. The bait was a another expense.

Conclusions

There are various mammals on the site, though it has been difficult to accurately identify the species. Those found during the 2018 survey comprise Grey Squirrel, Common Shrew, vole (maybe Bank and Field), (possibly) wood mouse, Red Fox, Rabbit, Brown Hare. There was also the strange finding of the Helmeted Guinea Fowl. Also the black hair/insect leg/grass/antenna.

Appendix

Equipment required

Scales & bags, bait (tinned sausages/apples/bird seed/peanut/hazelnut butter[Meridianfoods.co.uk], jar lids for bait, pens, recording sheets, coloured wool, sticky tape, pre-inked tracking cards (from Perdix Wildlife Solutions) rather than the mess of using oil and black poster paint powder .

Garmin, paper, elastic bands, cable ties or wire for attaching tubes to trees, cameras & phones, SD cards, batteries, laptop/smart phone, tubs for owl pellet soaking & tubs, jars for all sorts of specimens, small metal pointers for teasing owl pellets apart, handlens, white tray

Footprint Identification Technique FIT software from Wildtrack (not acquired)

ID cards of track prints, Id books, id sheets for bones

Camera traps

Hedgehog tunnel – with ink pads & bait. Corrugated plastic prism-shaped tunnels containing bait and inked masking tape in the centre, with two sheets of A4 paper-clipped to the base on either side. Borrowed more tunnels and camera traps (£100 deposit) from Wiltshire Mammal Group.

Dormouse tubes – with ink pads & bait – (the wooden tray should project a bit from the tube)

Hair tubes – use double-sided sticky tape and/or gaffer tape and bait in pipe or dormouse tube. Use various sizes of tube/pipe for various species. e.g. Studies have used the following:

118mm diameter for pine marten

65mm diameter or square section for squirrel and rat

52mm diameter for stoats

25 & 35mm diameter for wood mice, voles

Bat detectors (Chris) (not used).