Mammals & Birds Found by Camera-trapping in Deerness Woods 2016 – 2018

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Introduction

Camera-trapping has become a cost-effective means of detecting and recording mammals which are otherwise often under-recorded as compared with birds. Deerness Woods are located between the former pit villages of New Brancepeth, Ushaw Moor and Esh Winning in County Durham, U.K. They include planted and semi-natural woodland, some grassland, hedgerows, ponds, and small waterways including the Deerness river. The site includes the former New Brancepeth Colliery. Camera-traps were used to detect and record the mammals occurring on the site and this document describes the results. More details of some notable species examples are included. The terms camera-trap and trail camera are used interchangeably.

Figure 1 - Stoat (Mustela erminea) caught on trail camera in Deerness Woods, Co. Durham, UK

Aims

1. To determine what species of mammals were present in Deerness Woods in the given period
2. To record their frequency of occurrence
3. Where appropriate and where possible to record how widespread are the mammal species
4. To record bird species which appear on cameras

Camera-trapping Methods

Camera-traps were deployed at 62 locations in Deerness Woods for various periods between 01 January 2016 and 31 December 2018. All locations were south of the Deerness river. Camera-trapping effort, i.e. the total number of days for which a camera was deployed varied greatly between locations.

Various models of camera-trap were used. Models found to be ineffective were not subsequently used. Cameras were mounted on a tree or fence post, or occasionally a stake placed for the purpose. Cameras were located away from paths and arranged to minimise impact on privacy of visitors to the site. Cameras were placed at heights varying from on the ground to 7m up a tree, but deployments higher than 2 or 3 m up a tree tended to produce many triggers of waving foliage or branches. Most deployments were at or below 1m above ground. While most of the camera-traps used are capable of taking still images or video, still images were used exclusively here. In some cases a small amount of food bait such as peanut butter was placed in front of the camera in order to increase the likelihood of animals appearing. Bait was principally used to attract small mammals and for certain test deployments aimed at Grey Squirrels, so these species are likely to be over-represented in the results.

Small mammals such as mice, voles and shrews are often too small to reliably identify on camera-trap images. From mid September 2018, a small mammal camera-trapping box 40cm long and with a clear Perspex lid (Littlewood 2016) was used in conjunction with a +3 or +4 dioptre close-focus lens to obtain identifiable images of these species. Bait was used regularly in these deployments.

Problems Encountered

Despite (a) cameras being sited in inconspicuous locations as far as possible, and (b) all cameras being labelled with my name, a contact phone number, and its purpose, 2 cameras were stolen, and 2 damaged. The risk of camera theft greatly restricts where and when cameras may be placed, and the effectiveness at detecting animals.

Results

19 Species of mammals were detected over the 3 year period, 17 when dogs and cats are excluded. Roe Deer were by far the most frequently recorded species, followed by Grey Squirrel, Wood Mouse, Red Fox and Rabbit. It should be stressed that camera-traps do not detect all species equally, and height and other circumstances of deployment have a large effect on which species are detected and how often. The mammal species recorded and their frequencies are shown in Figure 1. Weasel (*Mustela nivalis* L.) and Stoat (*Mustela erminea* L.) are examples of species likely to be under-represented because of their small size and tendency to stick to cover. By contrast, Badgers (*Meles meles* L.) show up well on trail camera images and are genuinely infrequent. The same is true of Hedgehogs (*Erinaceus europaeus* L.). Both these species eat soil and ground invertebrates, and perhaps their low frequency relates to the very poor and possibly toxic soils associated with this former colliery site. The small number of records of Otter (*Lutra lutra* L.) and American Mink (*Neovison vison* Schreber) are related to their secretive behaviour and to limited camera-trapping effort on the river bank.

Notable is Ring-tailed Coati (*Nasua nasua* L.) two of which were detected in November 2018. This is an invasive species and listed as such by the European Commission (European Commission 2017). They were captured and removed to safe captivity by the Animal & Plant Health Agency in December.
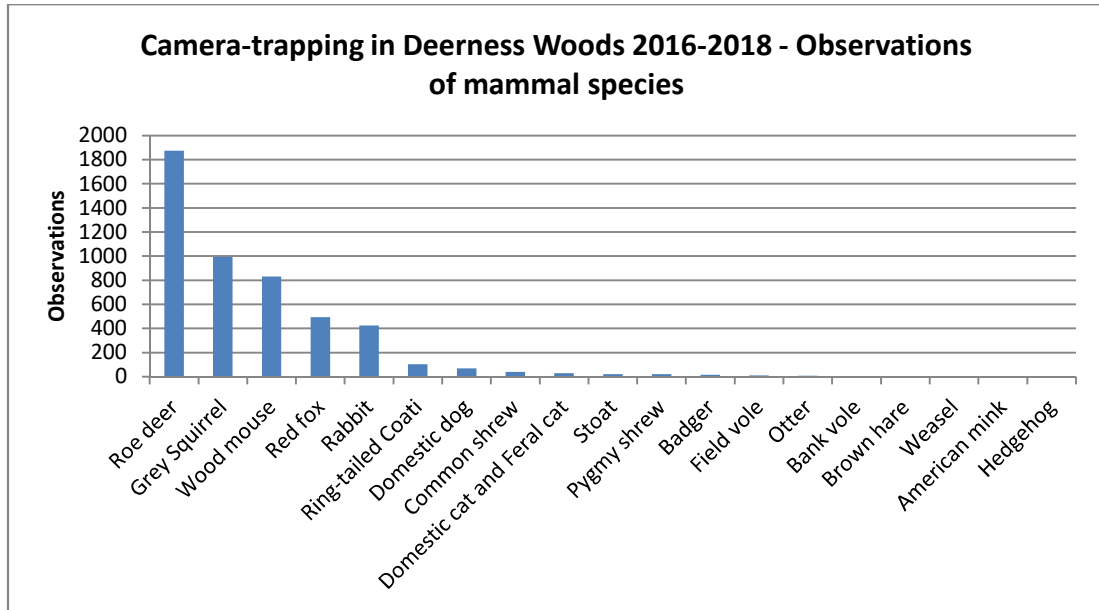
Figure 2 - Mammal species recorded by camera-trapping in Deerness Woods 2016 – 2018

Roe Deer (*Capreolus capreolus* L.) were detected at 44 out of the possible 62 camera locations, and these occurrences were mostly confined to woodland and scrub areas, or close to them. It is important to note that other than for small mammals, camera-traps were seldom placed in open areas because of the risk of theft, so the sample is heavily biased toward woodland and scrub. Despite the limitations, it seems clear that Roe Deer use most of the site. Bucks, does and fawns were detected, and breeding was confirmed in all 3 years.

Grey Squirrels (*Sciurus carolinensis* Gmelin) were detected at 30 locations, spread widely across the site, but not one Red Squirrel (*Sciurus vulgaris* L.) was detected. The abundance of Grey Squirrels at this site is probably typical of the county and is consistent with their displacement of Red Squirrels across much of England and Central Scotland.

34 Species of birds were detected, the commonest being Blackbird, Robin, Jay, Pheasant and Woodcock. The bird species recorded and their frequencies are shown in figure 2.
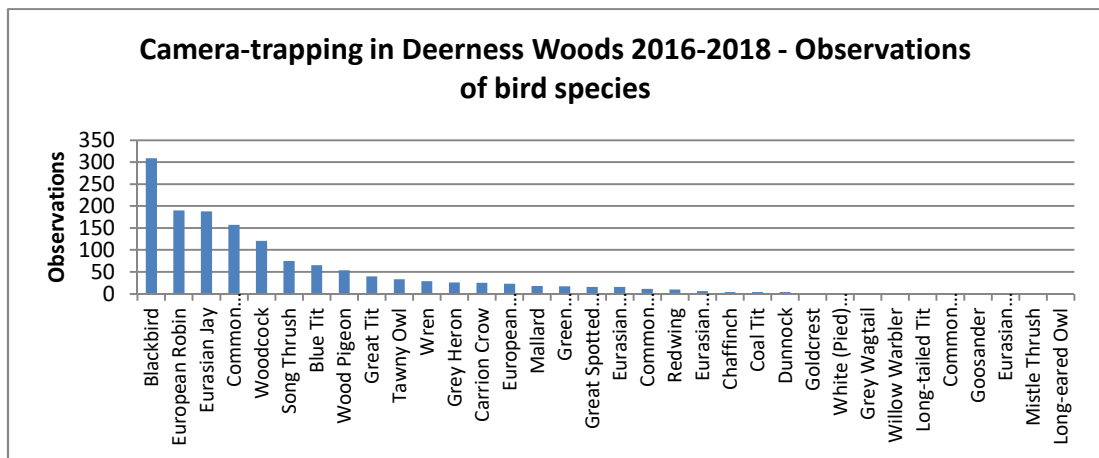

Figure 3 - Bird species recorded by camera-trapping in Deerness Woods 2016 – 2018

Woodcock (*Scolopax rusticola* L.) were present all year round although numbers detected were much higher in winter. Despite the number of dogs and wild ground predators such as Foxes and Stoats,

this species can be seen roding in spring and probably breeds each year. The winter numbers are presumably increased by continental migrants.

Month	Observations
Jan	23
Feb	12
Mar	7
Apr	4
May	1
Aug	2
Oct	7
Nov	33
Dec	32

Conclusions

Camera-trapping has shown that Deerness Woods is a local reservoir of wild mammals, that some of these are probably much more common than others, and Roe Deer have been consistently breeding. At least some species are widespread. The abundance of Grey Squirrels make it highly unlikely that Red Squirrels will re-colonise the site, even if a suitable source population existed. Camera-trapping has also shown that the site contains many of the bird species that one would expect to find.

Acknowledgements

References

Littlewood, N 2016 Thinking inside the box – camera-trapping Scottish Wildcat prey.
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http://ec.europa.eu/environment/nature/invasivealien/list/index_en.htm