



South West Scotland

**Environmental
Information
Centre**

Wild Mammals at Home

Project Report

March 2023



Acknowledgements

South West Scotland Environmental Information Centre (SWSEIC) gratefully acknowledges the financial contribution to the Wild Mammals at Home Project received from Galloway Glens Landscape Partnership through the Heritage Fund and Dumfries & Galloway Council. SWSEIC also gratefully acknowledges the contribution the Centre receives to its core funding from NatureScot.

Biggest thanks goes to those who participated in the project by allowing trail cameras and/or bat detectors to be placed on their land and assisted with the setting of such equipment. Due to the unpredictability of wildlife monitoring, some sites produced relatively few mammal records but the placing of equipment in a diverse range of sites, widely distributed through the project area, greatly contributed to the success of Wild Mammals at Home. Thank-you to: Jenny; Neil & Patricia; Rob; John & family; Wendy & Alison, Katy & Tim, Charlene, Lee & family, Hugh & family, Ann & Liz; Charles & Madeleine; Margaret & Steve, Stuart & family, Jon, Val & Harriet; Nick & family; Margaret & Mike, Ben & family; Steve & family; Mike & family.

Introduction

The Wild Mammals at Home Project was established to highlight the wildlife that lives in close proximity to people and communities in the Galloway Glens area. Wild mammals such as Pine Martens, Otters, Badgers, Roe Deer, Hedgehogs, Foxes and bats are seldom seen because of their nocturnal lifestyle, but the project loaned trail cameras and bat detectors to local residents, and provided expert advice, to enable these species to be observed and recorded by participants. The project built on the successful Galloway Glens funded Moths at Home Project.

Results have been added to the SWSEIC database and will be shared with all that request them. The project has provided a snapshot of the wild mammal fauna of the area, raised awareness of biodiversity, and will provide valuable information for use in conservation and management.

COVID-19

It was originally planned to run the project from April 2020 until March 2021. Unfortunately, this coincided with the peak of the COVID-19 coronavirus pandemic, when severe restrictions were placed on non-essential public activities and travel. As some restrictions began to be lifted in spring 2021, the project was modified (twice) in order to keep within government guidelines, but on both occasions, a resurgence in the virus severely limited the extent to which the project could operate. Eventually, in spring 2022, most restrictions were lifted and the project was able to proceed, as near as possible to the methodology originally envisaged, though still minimising the number of face to face contacts. The project was finally completed in November 2022.

Apart from a delay in completion, the biggest impact of COVID-19 on the project was on the proposed use of volunteers. Government restrictions meant that SWSEIC staff were home-based from March 2020 until July 2022, and no SWSEIC volunteers were active for most of this period. An attempt was made to use volunteers working from their homes and training was given to two volunteers. However, the huge size of the files generated by the trail cameras and bat detector, together with software licence restrictions, meant that this proved impracticable. By the time that restrictions permitted a return to the office, both trained volunteers had moved on, and due to the limited time remaining for the project, it was deemed not worthwhile to recruit and train new volunteers. As a result, virtually all of the input expected from volunteers into the project, came instead from staff.

Equipment

The following equipment was purchased for the project:

- Browning Recon Force Elite HP4 Trail Cameras
- BTC-7A Browning Recon Force Advantage Trail Cameras
- Elekon Batlogger A Bat Full Spectrum Passive Bat Detector

Methods

Target: 30 different locations, geographically spread throughout the area

Trail cameras/bat detectors were be loaned to interested residents in the Galloway Glens area. Participants for the project involved were recruited following articles in the SWSEIC monthly e-newsletter, social media, and the Glenkens Gazette, the latter being particularly productive. Others joined the project as a result of word of mouth. Participants were asked to sign for the equipment and to confirm that they had ownership and/or permission for all locations where equipment was placed.

Sites for trail cameras and bat detectors were located in the following areas: Carsphairn, Dalry, New Galloway, Balmaclellan, Crossmichael, Mossdale, Laurieston, Castle Douglas, Kirkcudbright and Borgue. Note that one additional site used at Palnackie (with permission from the Partnership Manager) was located a short distance outside the Galloway Glens area.

The Project Officer visited all sites and assisted with advice and placing of equipment. Bat detectors were left in place for 1-3 nights, trail cameras for up to 3 months, before being collected by the Project Officer. Where confident in doing so, participants were encouraged to occasionally change the locations of trail cameras.

Trail cameras were placed at 19 sites for a total of at least 775 days. Two cameras were unfortunately stolen from one site, so the number of days they were active, along with the results, will never be known, though prior to the theft we did manage to collect some footage from that site.

The bat detector was placed at 14 sites for a total of 19 nights.

Some sites had both a trail camera (sometimes more than one) and a bat detector, some sites had either one or the other. Sites covered a range of habitats, including two working farms, two community woodlands and a range of private gardens from small, urban ones to large (2ha+) rural ones.

All video recordings were analysed by the Project Officer, deleting the many false triggers, but saving the best mammal (and other wildlife) footage to be shared with participants.

Bat recordings were analysed by the Project Officer using Elekon BatExplorer software. Due to software restrictions, it was not possible to share bat recordings with participants, but information was fed back to them.

All confirmed wildlife records of mammals and other species were added to the SWSEIC database. In order to maintain privacy of participants, records will only be made available at 1km x 1km Ordnance Survey grid square resolution, rather than named sites or addresses.

A map showing the location of 1x1 squares used in the project is shown below, a total of 19 different squares. Note that some large sites covered more than one square, and several small sites were within the same square.

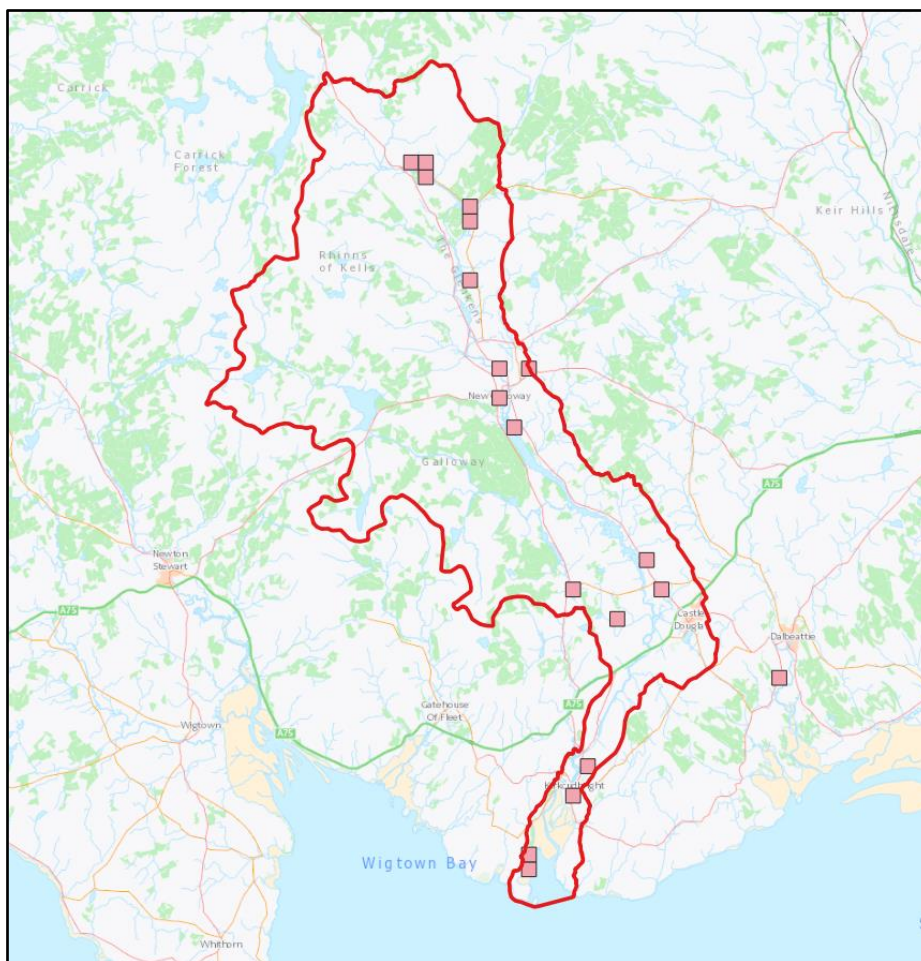


Fig 1. Location of 1x1km squares where equipment was placed.

Results

Terrestrial Mammals

A total of 16-18 terrestrial mammal species was recorded as a result of the project (it was not possible to distinguish between records of Field/Bank Voles and Common/Pygmy Shrews).

The following species were not recorded during the project, even though there is evidence of them being present in the area: Mole, Mountain Hare, Water Vole, Harvest Mouse, House Mouse, Stoat, Weasel, Polecat/Feral Ferret, Wild Boar, Sika Deer and Fallow Deer. The reasons for them not being recorded are various, but mainly that the species concerned are rare in the area, or they live in habitats not covered by the project, or they have habits which make them unlikely to be captured by trail cameras, or (in the case of Stoat and Weasel) we were just not lucky enough!

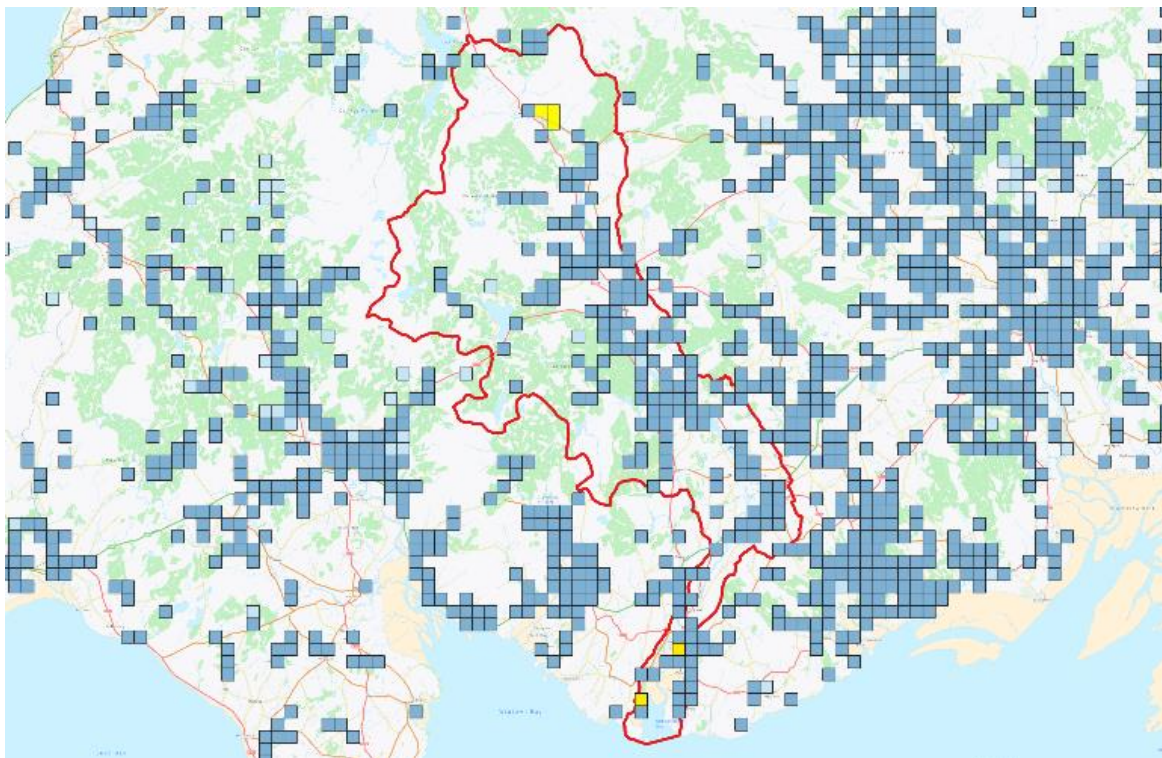
The following species accounts summarise the results of the project for each of the mammal species recorded. In each case, the maps show previous SWSEIC records prior to 2000 (light blue), previous SWSEIC records post-2000 (dark blue), and new records as a result of the Mammals at Home Project (yellow). The red boundary on the maps denotes the Galloway Glens area. As is often the case, the maps tell us as much about the distribution and behaviour of wildlife recorders, as they do about the distribution of the animals.

Remarkably, **each and every record resulting from the project was located in a 1x1km grid square where the species had never been previously recorded**, even for seemingly ubiquitous species such as Rabbits.

Red Squirrel *Sciurus vulgaris*

Recorded in 5 new squares as a result of the project.

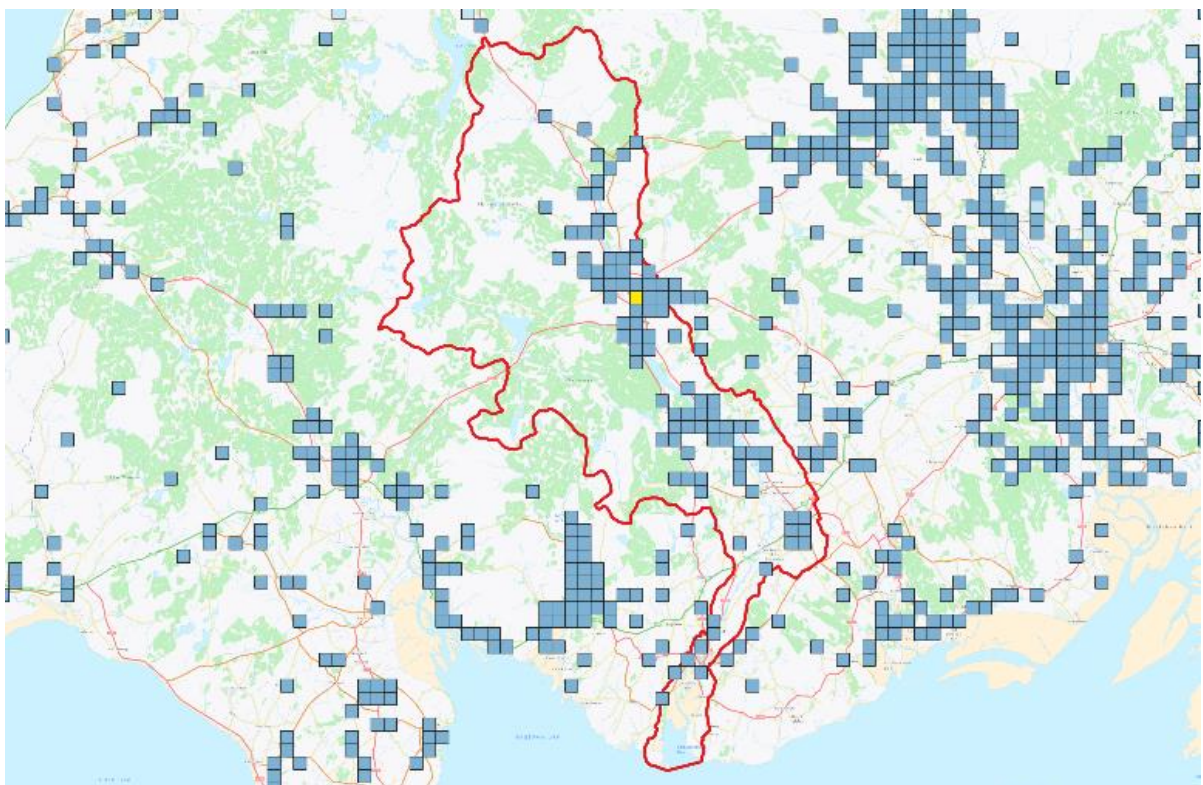
Previous survey information is more comprehensive for Red Squirrel than most other mammal species, largely thanks to public recording campaigns stretching back over more than two decades, so it was welcome to receive records from new squares. Unsurprisingly, Red Squirrels are concentrated in river valleys, which has the most suitable areas of woodland and the largest number of observers. But this is the same pattern as for Grey Squirrels, so the impact of the non-native invader on the native species will be interesting to monitor in the coming years.



Grey Squirrel *Sciurus carolinensis*

Recorded in 1 new square as a result of the project.

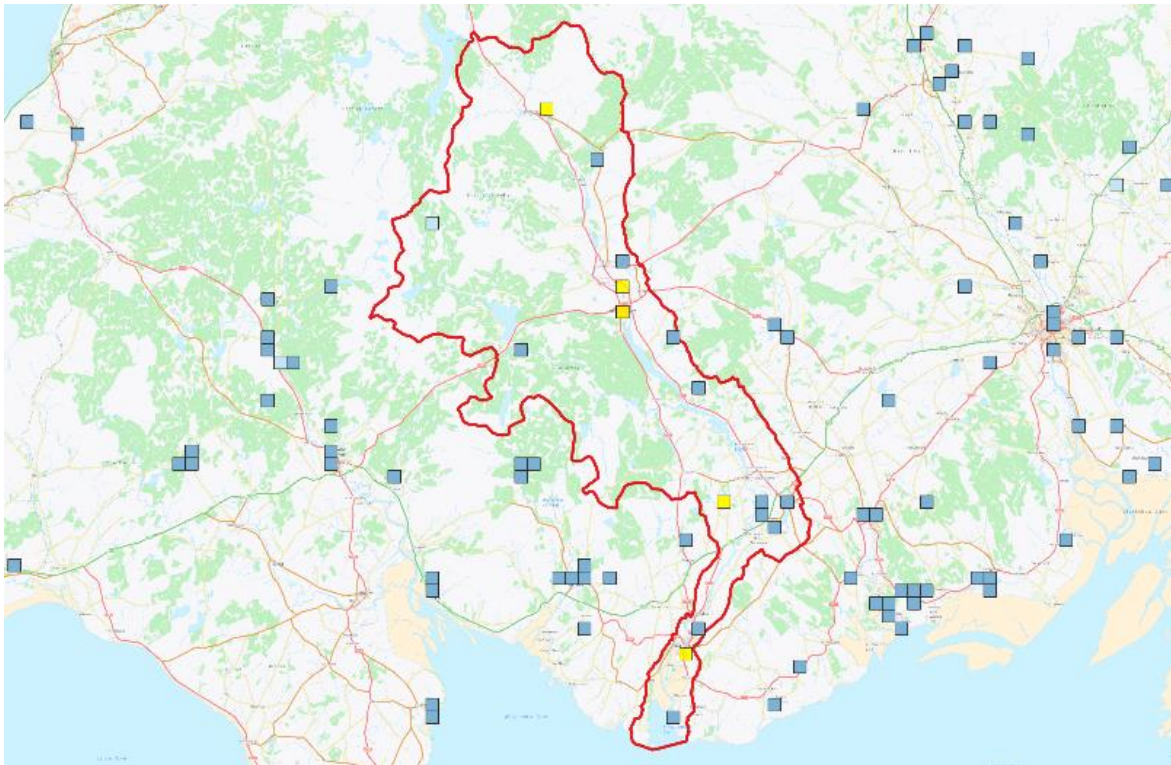
Grey Squirrels were introduced to Britain in the late 19th century, but remained very rare in Dumfries & Galloway right until the 21st century. Since then, their spread has been rapid, especially in river valleys with a concentration of woodland, as found in the Galloway Glens area. The map of previous records is likely to be reasonably accurate as a result of various past recording campaigns, and the single record from the project probably reflects accurately the current status of Grey Squirrels in the area – widespread but not yet common.



Wood Mouse *Apodemus sylvaticus*

Recorded in 5 new squares as a result of the project.

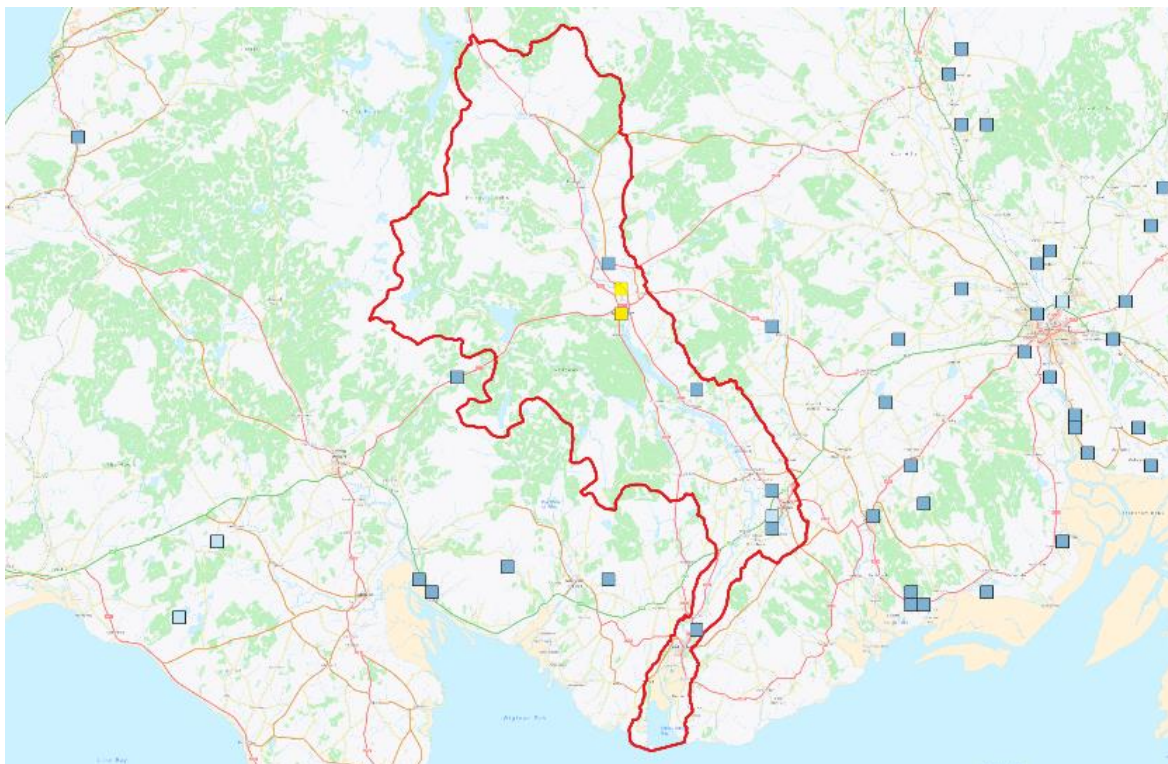
Wood Mouse is likely to be very common and widespread throughout the area. Even mice within buildings are far more likely to be this species than House Mouse, though accurate identification can be difficult. However, as the map of previous records show, it is greatly under-recorded, so the number of new records is welcome.



Brown Rat *Rattus norvegicus*

Recorded in 2 new squares as a result of the project

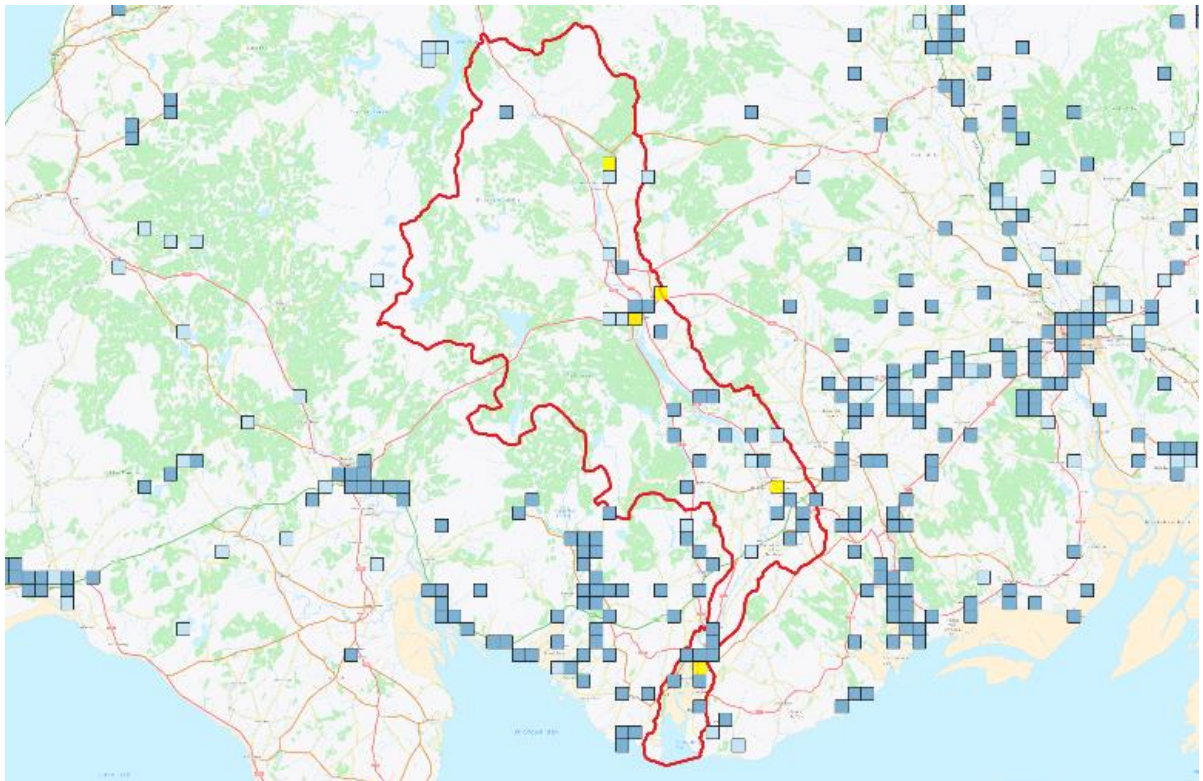
Brown Rats were introduced to Britain in the 18th century but are now considered to be ubiquitous, especially in association with human activities in urban areas and on arable farms. There are relatively few previous records in Dumfries & Galloway, possibly because a shortage of urban/arable habitat prevents high population densities, but it is more likely that they are reported to pest control authorities rather than wildlife organisations. Their true distribution is likely to be much more widespread than the map shows.



Rabbit *Oryctolagus cuniculus*

Recorded in 5 new squares as a result of the project.

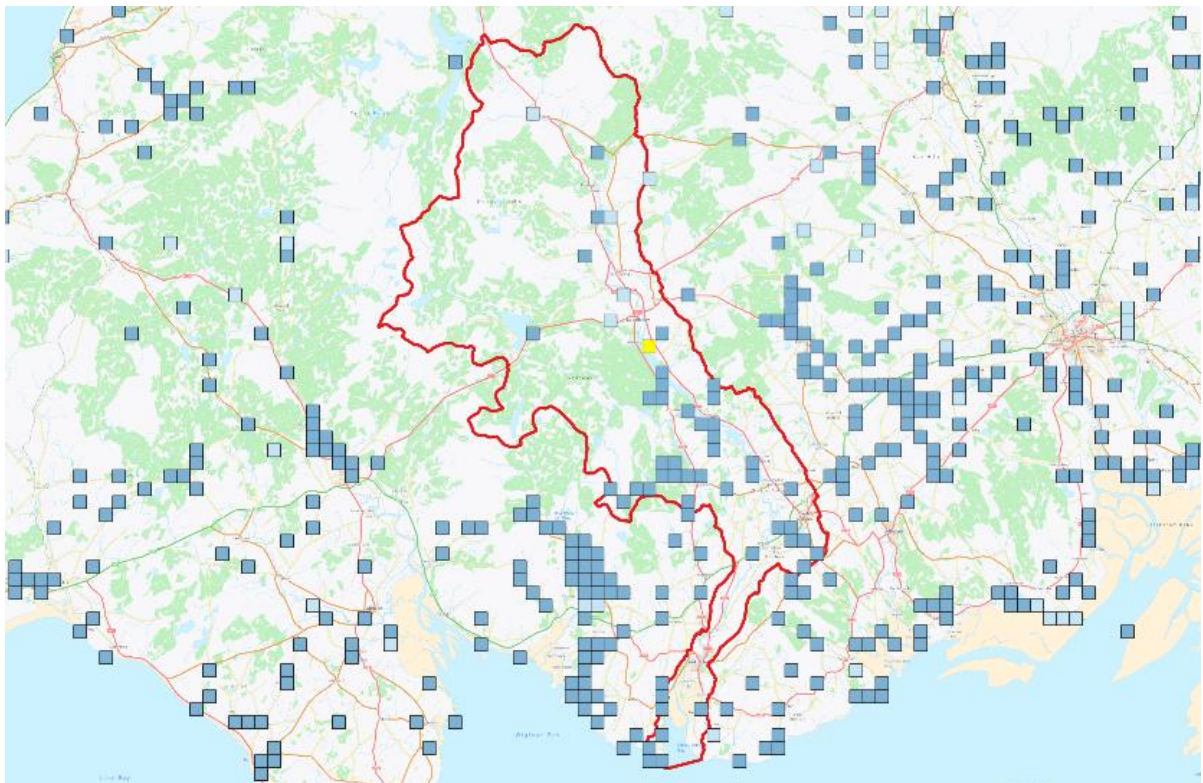
An historical introduction to Britain, probably in the medieval period, Rabbits are now considered widespread and ubiquitous, and often considered a pest – factors which can lead to its under-recording. However, previous records show a strong lowland tendency in the region and it was not recorded as frequently in the project as might have been expected. Perhaps some gardens in the project employed a deliberate Rabbit exclusion policy?



Brown Hare *Lepus europaeus*

Recorded in 1 new square as a result of the project.

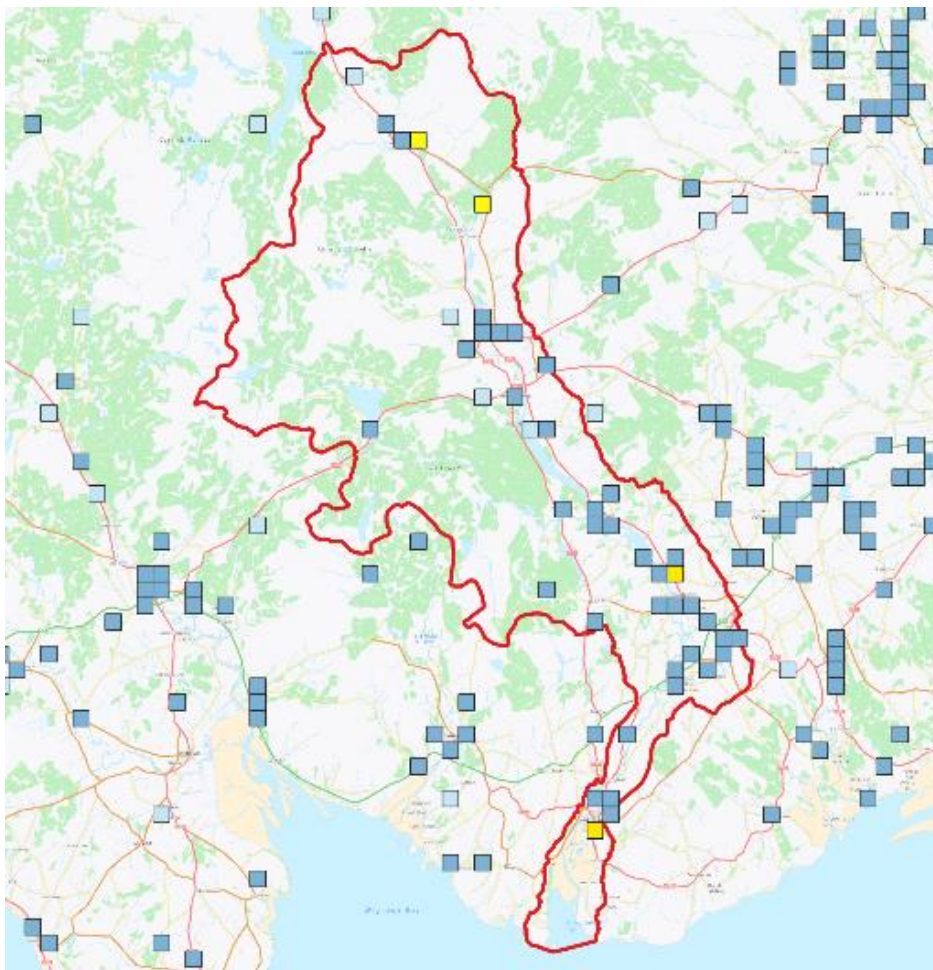
Brown Hares are believed to be a prehistoric introduction to Britain, but in Dumfries & Galloway they have long been considered to be widespread and common away from the higher hills. Current trends for local populations are not known, but the fact that it was recorded only at a single site in the project may be a reflection that the cameras were generally not placed in ideal habitats for Brown Hares.



Hedgehog *Erinaceus europaeus*

Recorded in 4 new squares as a result of the project.

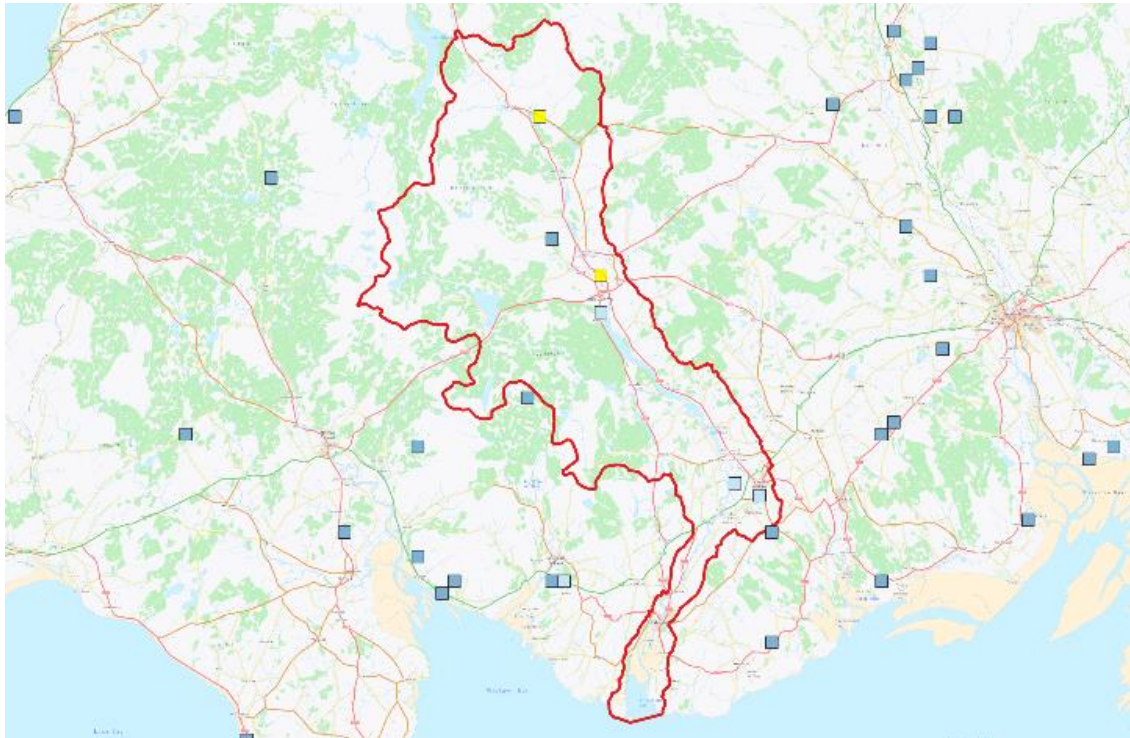
Hedgehogs are considered to be undergoing a significant national decline, and it is noticeable that records of road casualties do not feature on the map as prominently as for Badgers, which may not have been the case if records were available from the mid-late 20th century. All the new project records came from gardens, mostly where Hedgehogs were being fed. This may simply reflect the camera positions chosen, but it might indicate that Hedgehogs are more common in gardens than the wider countryside as a result of garden feeding?



Water Shrew *Neomys fodiens*

Recorded in 2 new squares as a result of the project.

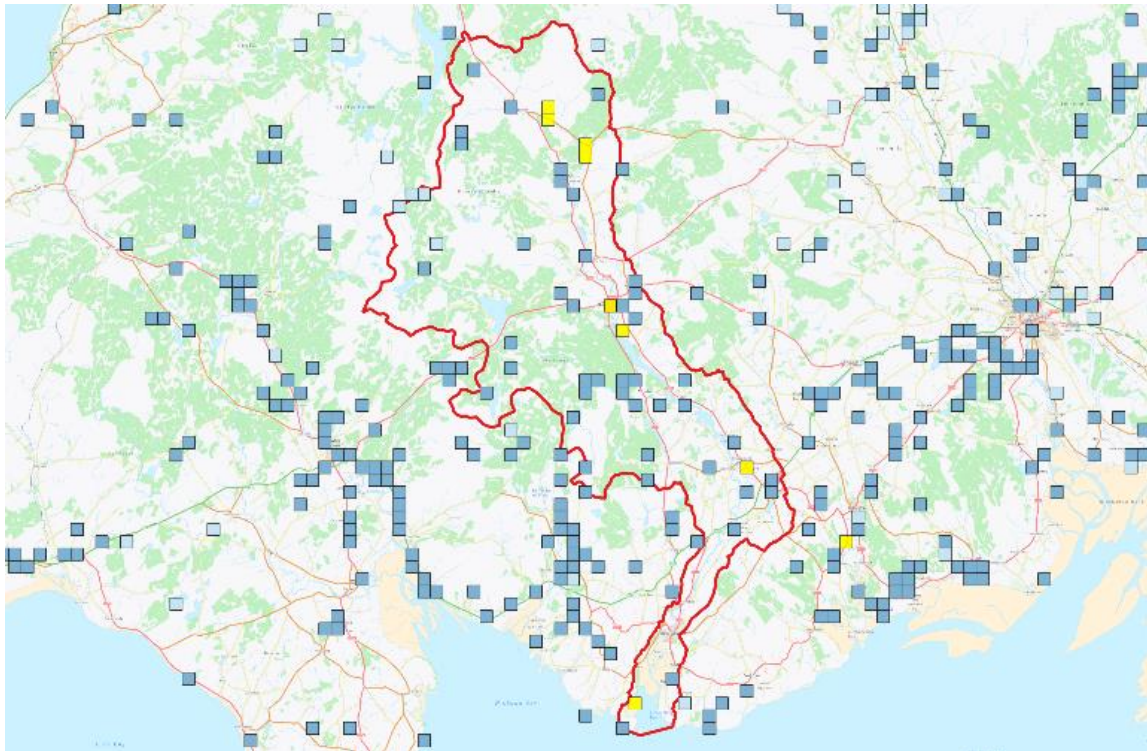
This species is probably widespread and common in Dumfries & Galloway, but its small size, secretive nocturnal habits, and the difficulty of distinguishing it from other shrews, results in it being rarely recorded. The two new squares were therefore very welcome additions to the records.



Red Fox *Vulpes vulpes*

Recorded in 8 new squares as a result of the project.

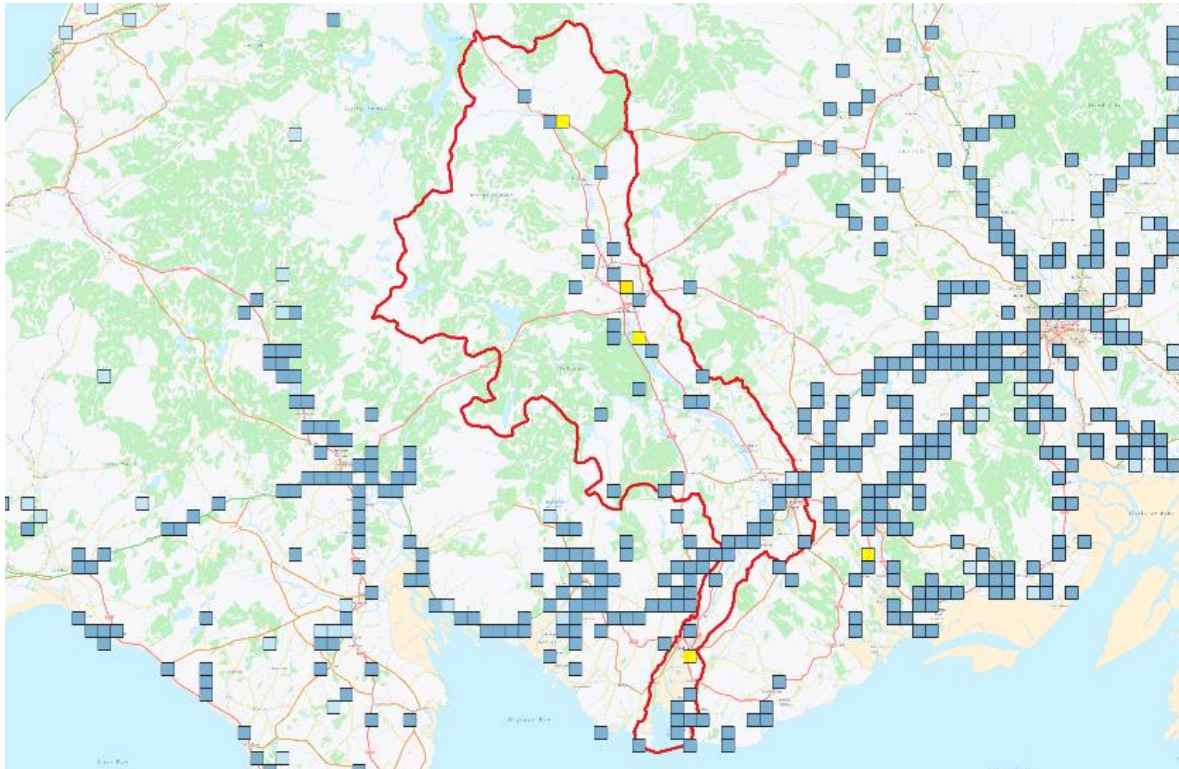
Foxes are thought to be widespread and common throughout Dumfries & Galloway, but their nocturnal behaviour results in relatively infrequent sightings and only scattered records. Rural Foxes have not acquired the bold diurnal behaviour that they exhibit in some cities.



Badger *Meles meles*

Recorded in 5 new squares as a result of the project.

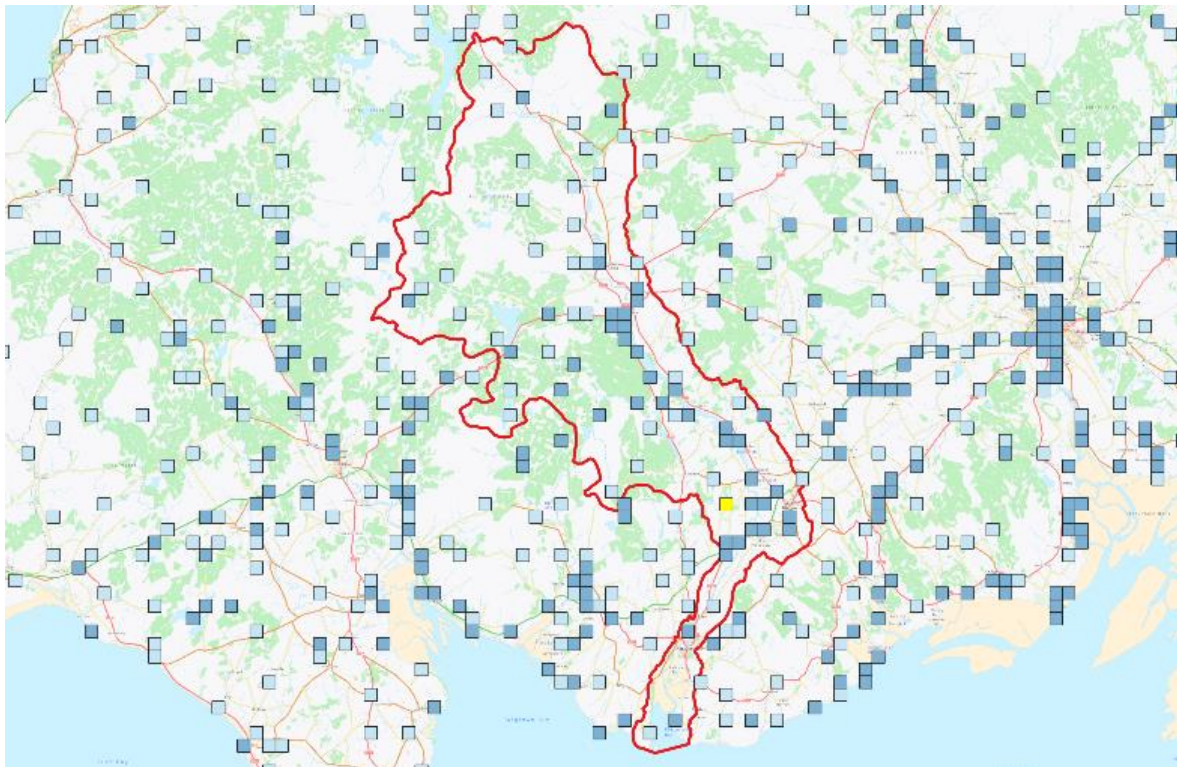
Badgers are widespread in Dumfries and Galloway and have been increasing in recent decades. However, due to their nocturnal behaviour, the majority of previous records came from reports of road casualties, which is reflected in the distribution map. It was therefore welcome to add new records of living Badgers as a result of the project.



Otter *Lutra lutra*

Recorded in 1 new square as a result of the project.

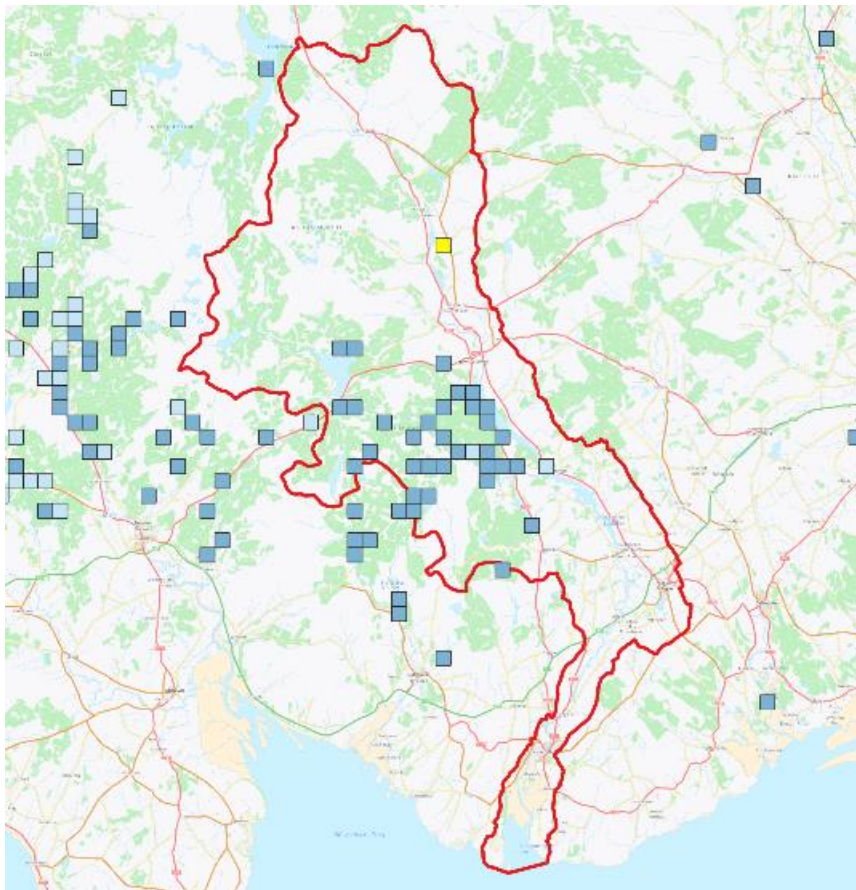
The map of previous records shows a widespread and even distribution of Otters across the region, but this is largely based on a late 20th century national survey which systematically searched for Otter tracks and signs. It is believed that Otters remain just as widespread today, but the fact that they live at low population densities and are mainly nocturnal, means that sightings of the animals are few, and often restricted to known vantage points. Records of Otter tracks and signs are not commonly submitted by the public.



Pine Marten *Martes martes*

Recorded in 1 new square as a result of the project.

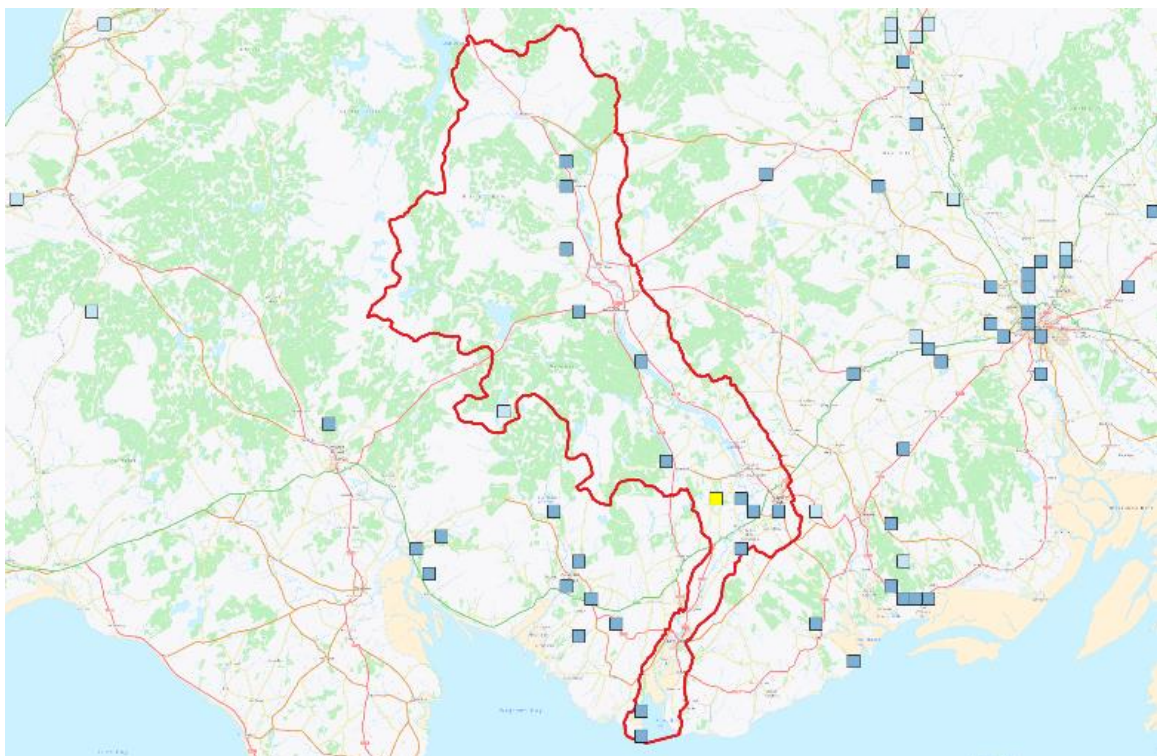
It is believed that the entire population of Pine Martens in Dumfries & Galloway is descended from 12 animals reintroduced in 1980/81 at Glentroll and near Clatteringshaws, the latter being within the Galloway Glens area. The current population and distribution in the region is not accurately known, despite continuing work by professional ecologists, but most records come from areas close to the reintroduction site. The animals are rarely observed due to their secretive nature and their favoured habitat of dense coniferous plantations. However, they occasionally visit garden feeding stations, which was how the species was recorded during the project.



American Mink *Neovison vison*

Recorded in new 1 square as a result of the project.

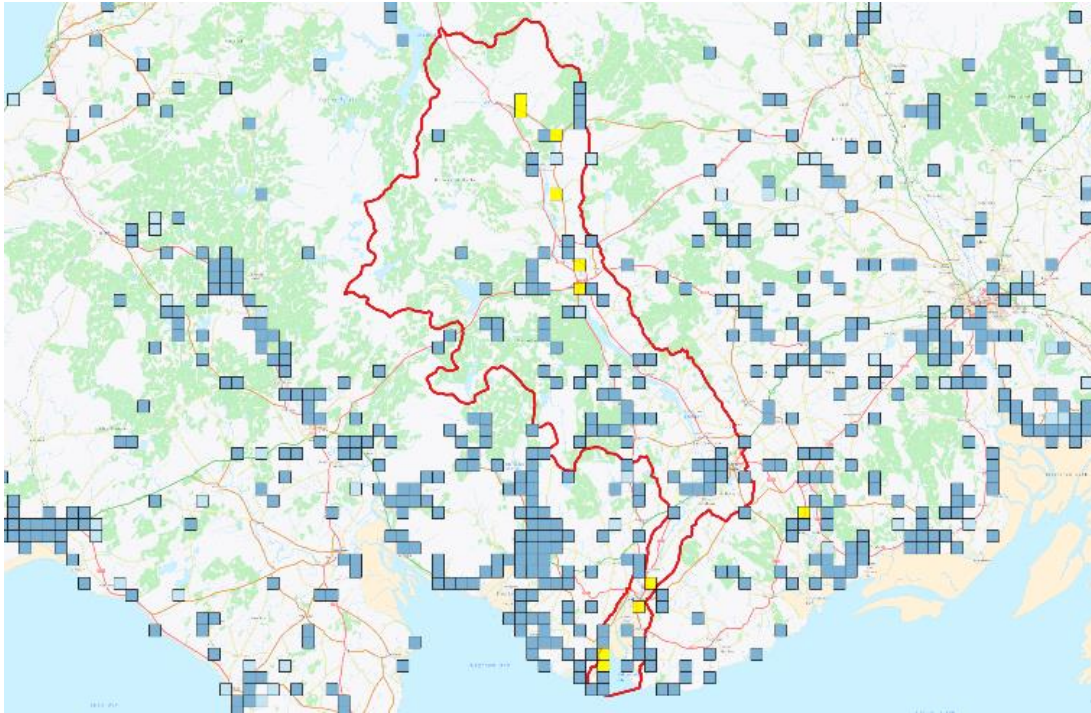
American Mink in Britain all result from escapes from fur-farms from the 1930s onwards, from where they spread to most other parts of the country, including Dumfries & Galloway. Mink are likely to be under-recorded due to their largely nocturnal habits, but there is a suspicion that populations are in decline in many places. The single project record may give weight to this theory, but a stated reason for the possible decline being competition from increasing Otter populations was not supported, given that they were both recorded at the same single site.



Roe Deer *Cervus elaphus*

Recorded in 11 new squares as a result of the project.

The most frequently reported mammal as a result of the project, which is not surprising given that it is a large and widespread animal, which although mainly a nocturnal woodland creature, is also frequently a daytime visitor to open habitats, including larger gardens.



Bats

A total of at least 5 bat species, and possibly 9 or more species, was recorded.

Soprano Pipistrelle *Pipistrellus pygmaeus* was the most frequently recorded species, being present at every project site, usually in greater numbers than other species (note however, that greater number of recordings does not necessarily relate to greater number of bats).

Common Pipistrelle *Pipistrellus pipistrellus* was also recorded at every site, usually in smaller numbers, except for two sites where it was the most frequently recorded species.

Leisler's Bat *Nyctalus leisleri* and **Noctule Bat** *Nyctalus noctula* were recorded at most sites, but rarely was it possible to confidently distinguish between them. Both are rare species in Scotland. Similarly, it was not possible to distinguish the four species of 'Myotis' bats which all have very similar calls - **Whiskered Bat** *Myotis mystacinus*, **Brandt's Bat** *Myotis brandtii*, **Daubenton's Bat** *Myotis daubentonii* and **Natterer's Bat** *Myotis nattereri*. All but Daubenton's are rare in Scotland.

Brown long-eared Bat *Plecotus auritus* was the other species identified, but only confirmed at a single site.

A selection of bat recordings will be sent away to be professionally analysed. This will enable the records to be distinguished between the potential confusion species of Leisler's/Noctule Bats and *Myotis* species. There is also the possibility that recordings may include rare bat species such as **Nathusius' Pipistrelle** *Pipistrellus nathusii* and **Alcathoe Bat** *Myotis alcathoe*.

Other species

Though not the main purpose of the project, records of other species were collected in addition to mammals, and added to the SWSEIC database.

A total of 37 or 38 bird species was recorded (not possible to distinguish between Willow Warbler and Chiffchaff). They consisted of Blackbird (13 sites), Robin (8), Chaffinch (7), Blue Tit (7), Song Thrush (6), Pheasant (6), Woodpigeon (6), Great Tit (6), Collared Dove (5), Coal Tit, Dunnock, Crow, Nuthatch, Wren, House Sparrow, Jackdaw, Heron, Great Spotted Woodpecker, Jay, Magpie, Moorhen, Willow Warbler/Chiffchaff, Redwing, Siskin, Pied Wagtail, Grey Wagtail, Mistle Thrush, Mallard, Shelduck, Little Grebe, Canada Goose, Stock Dove, Sparrowhawk, Tawny Owl, Starling, Bullfinch, and Dipper.

One amphibian, Common Frog, was recorded at one site.

Feedback

Target: involve a minimum of 200 different participants

A minimum of 28 participants were met in person during the project, and more will have been involved but were not met in person due to restrictions imposed by COVID-19. Results from individual sites were shared directly with participants from those sites via Dropbox online file sharing.

An end of project presentation was delivered by the Project Officer on 11 February 2023 at Balmaclellan Smiddy, as part of the Galloway Glens winter presentation programme. **The end of project presentation attended by 30 people in person plus around another 80 via live streaming on the internet.** Another presentation is scheduled for Castle Douglas in April.

Short articles, including links to short video clips placed on YouTube (for example see <https://www.youtube.com/watch?v=dv2r6oEtCEQ>), regularly appeared in the SWSEIC monthly e-newsletter, sent to around 650 people per month (for example see <https://us1.campaign-archive.com/?u=bf2d3ba2098de8ed6740e1346&id=32f9441c37>). Video clips also featured on SWSEIC's social media feeds.

It had been planned to use an intern from Glasgow University to prepare a compilation video for the project, but modifications to the project and to the University's plans for an intern resulting from COVID-19 meant that this was no longer possible. Instead, SWSEIC commissioned Lucy Hadley, a local wildlife artist and graphic designer, to make a short compilation video. This will be shown at SWSEIC's annual wildlife recorders' gathering in April 2023, and then shared with the wider community via SWSEIC's website.

This project report will be shared with the wider community via SWSEIC's website.

Legacy

The equipment purchased for use in the project will continue to be made available by SWSEIC for the public to borrow free of charge, the only requirement being the collection of further wildlife records. At the time of writing, five trail cameras are currently out on loan at different sites to those covered by the project, and three of them are located in the Galloway Glens area. The expectation is therefore that the project will continue to collect and make available wildlife information in SW Scotland for many years into the future, as well as providing educational benefits and giving pleasure to those who make use of the equipment.