

Fixed monitoring point: Baited trail camera recording form



Tetrad ID (e.g. NZ06K):		Please fill in all sections. Thank you.		
Site name:		Surveyor's name:		
Date camera & feeder installed:		Date of 2nd pre-bait:	6 fig grid ref (e.g. NZ 054 618) (10 fig if using GPS, e.g. NZ 05400 61800):	
Habitat type (G=Garden B=Broadleaved woodland C=Coniferous M=Mixed):				
Highest number of each squirrel species in any one image in three windows recorded below. ALL images must be viewed and all three observation windows must be recorded or the data may be discarded.				
FIRST OBSERVATION WINDOW (DAY 1 UNTIL MIDNIGHT ON DAY 5)				
Date first day of window:				
	Red	Grey	Unknown species	Comments
Highest number of squirrels seen in any one image				
SECOND OBSERVATION WINDOW (MIDNIGHT ON DAY 5 UNTIL MIDNIGHT ON DAY 10)				
Date first day of window:				
	Red	Grey	Unknown species	Comments
Highest number of squirrels seen in any one image				
THIRD OBSERVATION WINDOW (MIDNIGHT ON DAY 10 UNTIL MIDNIGHT ON DAY 15)				
Date first day of window:				
	Red	Grey	Unknown species	Comments
Highest number of squirrels seen in any one image				
HAIR SAMPLE RESULTS				
Hair on sticky pads (Y/N)		Hair results: Red, Grey, Both, Unsure, None (only if trained in hair analysis)		

Submit your results on this form by post (please keep a copy/scan) to the address below, including the hair samples by 30th June.

Results may also be submitted online – email records@rsne.org.uk to request a user name.

RSNE, c/o Cumbria Wildlife Trust, Gosling Sike Farm, Houghton Road, Houghton, Carlisle, Cumbria, CA3 0LD

Example

In one window you find an image with 1 red & 1 grey squirrel, another with 3 reds, another with 2 greys, another with 2 reds, one with 1 grey and one with 1 red.



This window's results would be recorded like this:

	Red	Grey	Unknown species
Highest number of squirrels seen in any one image	3	2	0

Guidance Notes and Information: Baited Trail Cameras

1. Introduction

Red Squirrels Northern England have established a program of standardised red and grey squirrel monitoring at selected sites across Northern England, which started in 2012. Each monitoring point is located within a defined tetrad (a 2 x 2km square). The network of tetrads (approx. 300 sites) are surveyed each year using either baited visual transects, baited trail cameras or observed feeding stations. The collection of data using these methods contributes towards a detailed understanding of red and grey distribution over time across the project area, helping us to gauge the success of red squirrel conservation activity.

2. Survey Rationale

Each method involves repeated visits over a short period of time. Designing the monitoring programme in this way enables the calculation of detection probabilities associated with each method and habitat type. For example, if you saw a red squirrel on one out of three visits, you know that you missed red squirrels that *were actually there* on two out of three visits. This piece of information improves the robustness of our statistical analysis. The implicit assumption is that no squirrels have entered or left the tetrad (either by immigration/emigration or birth/death) during the two weeks of the survey period. For this reason, monitoring should only be undertaken at a site when no control activities are underway there, if at all possible.

3. Methodology for baited trail cameras

Surveyors will need the following equipment:

- A detailed map of the woodland
- Flip-top lid feeder box and motion-activated trail camera
- Disinfectant (Trigene or Virkon S)
- Sticky “hook & loop” pads (at least 20mm x 20mm)
- Bait (squirrel mix containing approximately 45% sunflower, 45% maize and 10% peanuts)
- Self-seal bags for collecting hair samples (with waxed paper for protecting hairs)
- RSNE baited trail camera recording form

Sticky pads should be attached to the underside of the feeding box lid (Fig. 1a). This provides a backup in the event of camera failure or unclear images. Any hairs left should then be sent to RSNE to confirm species present (red or grey).

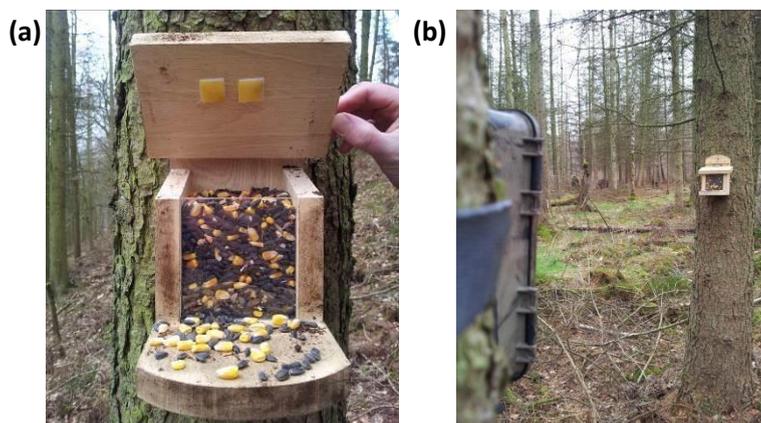


Fig. 1. (a) Baited squirrel feeder with sticky hair pads on the underside of the lid. (b) Trail camera (foreground) directed at feeder (background) at distance of about 4m.

Activity timeline for baited trail camera surveys:

- **The two week survey is to be conducted at any time between March and May, so long as it begins on or after 1st March and is complete by 31st May.**
- Once a location has been identified, ensure access permission has been granted.
- Locate the feeding box and camera in good quality squirrel habitat, such as mature woodland containing some or all of oak, beech, hazel, pine, larch or non-native mature coniferous species. If you find a spot with signs of squirrel activity (dreys or chewed cones, gnawed hazelnuts etc), this would be very suitable for a feeding box and camera.
- Day 1: erect feeding box in a suitable position where it can be easily monitored, positioning it on a tree at around eye-height to allow for easy feeder filling and cleaning. Make sure to choose a spot away from public footpaths or other areas where the equipment is at high risk of theft. Fill the feeder with suitable squirrel mix.
- Attach the camera opposite the feeder at a distance of 3 or 4 m (Fig. 1b). Take a test image to make sure the feeder is in the frame.
- Record the exact location of the feeder. A 6 figure grid reference will suffice, or record the full 10 figure grid reference if using a GPS.
- Attach two sticky pads to the under-side of the feeder lid. Retain the sticky pad backing paper to re-cover them when putting in sample bags later.
- Re-bait the feeder as needed around day 7 (do not allow the feeder to become completely empty).
- After 15 days, remove the feeder and camera, discarding any unused bait. Remove the sticky hair pads, cover with the original backing paper (**the waxy, shiny side!**) or loosely with baking parchment. Put in sample bag labelled with the grid reference, date, site name and your name. Clean and disinfect the feeder.
- **Review the camera images in three blocks of five days:** Days 1 – 5 (Window 1), Days 6 – 10 (Window 2) and Days 11 – 15 (Window 3). Remove the SD card from the camera and plug into a computer. View each image, recording on the form the highest number of squirrels of each species in any one image within each window.
- **What to do if the camera date/time resets.** If the camera date/time resets, work backwards from the final image, with window 3 being the last five days, window 2 the second five days and window 1 the first 5 days. **If in doubt, contact RSNE before deleting the data as it is very important that the data is recorded in these three windows.**
- **Please post form and hair sample bag to RSNE by 30th June.** The form can be submitted to us on our online system but the hair samples will still need to be sent to us. Arrange equipment return as appropriate.

Many thanks for taking part. If you have any questions, please get in touch with Simon O'Hare at records@rsne.org.uk.