

## ***Sightings Transects Practice Notes***

The sightings transect method described here is the standard method suggested by Gurnell *et al* (2001) in the Forestry Commission Practice Note "*Practical Techniques for Surveying and monitoring Squirrels*".

Your Local Squirrel Group transect co-ordinator will tell you which sites need surveying. To find out who to contact, please get in touch with the Scottish Squirrel Survey Co-ordinator (details below).

### ***Mapping***

Your Local Squirrel Group transect co-ordinator should have obtained stock maps from the local Forestry Commission District Office. If the forest is privately owned, then the best available habitat maps should be used (forest maps, estate maps, or other.) If none is available, then use an OS map of small scale and, with the help of foresters/rangers/estate managers, mark in approximate habitat boundaries. Habitat boundaries need to distinguish between areas of different species make-up and between blocks of cone-bearing vs. non-cone-bearing stage. Individual heavily-fruited trees with potential for attracting local concentration of squirrels will also need to be noted and mapped. (A simple system of habitat mapping is given in the appendix at the end of this note.)

Omit the following areas from the total area to be surveyed:

- Clear-fell
- Open ground / open water
- Young plantings <15 years
- Birchwoods without squirrel food species (oak, hazel, beech, conifers)
- Areas of low scrubby shrubs with no squirrel food species

Calculate number of transects required for the remaining area using the table below.

### ***The Transects***

Each transect should be 800 - 1000 metres long (pool small woods) and should between them pass through a representative cross-section of the different habitat types of the site as a whole. They also need to sample the whole geographical area of the forest. The following table summarises the minimum number of sightings transects for the size of woodland.

<b>Size of Woodland (hectares)</b>	<b>Number of Sightings Transects</b>
>100 to 500 ha	5 transects
>500 to 1,000	5 + 1 per each additional full 100ha
>1,000ha	10

The lines need not be straight.

The lines should be measured and marked out on the ground in 100m. sections (e.g. by coloured tape, coloured spraypaint, or other method). It may be useful to mark out the 50m. interval as well, as a direction guide for the surveyor: choose a different colour for this. Measurements should be by tape-measure or measuring wheel ideally; pacing can be used if you are confident that your paces can measure accurately. Don't guess.

The transect lines and 100m intervals should be marked on the habitat map, and the OS co-ordinates noted. If you have access to GPS, then co-ordinates and transect trails can be saved.

Volunteers may undertake either habitat mapping and transect marking or just the sightings transects, or both, as time and inclination permits. If someone else has marked out the transect, you will need to familiarise yourself with the transect and the site before actually carrying out the transects.

### ***Carrying Out the Transects***

#### ***Safety***

Basic precautions for observer safety should be practised.

- Inform the woodland manager or other relevant personnel when you intend to be in the woods.
- Tell someone at the office or at home where you are going (leave a map reference) and when you expect to be back. Make sure you call them to let them know you are back.
- Take a mobile phone, making sure it is charged, and in case of signal failure, a hill-walker's whistle. (Turn your mobile phone OFF unless you need to make a call.)

Further suggestions for risk assessment and safety precautions are appended.

#### ***Clothing***

Clothing should be of woodland-neutral colour, and of a fabric that allows you to move SOUNDLESSLY (waterproofs can be noisy!). Ears should be uncovered. Otherwise wear clothing appropriate to the season and the weather. Footwear should be soft-soled to allow silent stalking.

#### ***Equipment***

Transect map; binoculars; recording form; soft pencils (pens can be unreliable in the damp). Compass optional.

#### ***Timing***

The observer should aim to begin the transect at between 5.00 and 7.00am, depending on the time of year, since early morning is the time when you can expect to find most of the population out and about. From late morning (or even mid-morning in the long days of summer) a proportion of the population will have returned to the dreys.

#### ***Technique***

At the start of the transect, wait SOUNDLESSLY for 5 minutes, watching and listening carefully for squirrels. Record any that you see, or record "zero" if you see none.

Then walk SOUNDLESSLY and evenly for 100m., recording any squirrels seen, or "zero" if none. You should take 5 minutes to reach the next interval marker. (The pace should be practised beforehand on a marked out practice route.) Try to keep your body profile against a background of trees or shrubs so that it is less easy for squirrels (and other wildlife that might raise the alarm) to see you. If caught out in the open, a useful trick is to squat down (if your knees will stand it) to make your outline less humanoid.

Wait soundlessly for 5 minutes at the interval marker, watching, listening and recording.

Repeat until you reach the end of the transect.

Try not to brandish white recording sheets or maps around – you will scare off anything with eyes before you see them! Using a muted colour of paper for recording sheets helps, or a dark colour top-sheet of waterproof plastic to disguise a white clip-board, but a small hard-covered field note-book is ideal. Remember, you will also be carrying binoculars. If using a field note-book, make sure you record all the details that will be needed to complete the recording forms (as attached).

### **Recording**

On the recording forms (or in your field note book), record the species (red or grey) of each squirrel you see for each walked section and each stopping point on your transect. A note of what species of tree it is in and what it is doing would be useful additional notes, but not essential. You will also need to record the perpendicular distance of each squirrel from the transect line. Practice at estimating by eye a range of known distances in woodland habitat should be carried out beforehand until competence at judging distance is achieved.

Repeat the same transect twice more within the next 2 weeks.

### **Weather**

Recording forms should include space to record the basic features of the weather: temperature, wind, precipitation, cloud cover. General descriptions are fine.

If there is more than slight drizzle or light showers, or if there is a strong wind, call off the transect until the weather improves, as squirrels do not like to get soaked or unnecessarily blown about and they are likely to return to their dreys until things improve. The constant background noise of a strong or gusty wind makes squirrels nervous, as they can't listen out for predators or competitors.

Temperature (at least those we experience in Scotland) do not generally cause any change in the activity of squirrels. Exceptionally hot weather can cause them to cease activity to rest in the open. Cold temperatures (down to - 40 degrees C in Siberia) do not stop squirrels from coming out, though they may shorten their active time.

### **Reporting**

Once you have completed 3 repetitions of a particular transect, complete and return copies of your recording forms to your Local Squirrel Group's transect co-ordinator as soon as possible.

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**APPENDIX**

***Suggestions for Habitat Mapping***

The map should be on a scale of 1:2500, which can be fitted onto a sheet of A3 paper. Two copies should be kept, one for use by the surveyor and the other to be kept by the Group's survey co-ordinator. The maps may be coloured for clearer presentation.

The habitat map should be divided into areas which are identifiable as different habitats. The habitat descriptions summarised in the following table is suggested, [based on Godfrey (1997), "*Perthshire and Kinross Squirrel Group: Report on Transect Studies July 1994 - December 1996*", Perth & Kinross Council] although each Local Squirrel Group is free to adopt its own detailed method. The intention of this procedure is to monitor different habitats in relation to the squirrels' use.

Each habitat should be mapped and described by 4 elements taken from each of the 4 columns in the table below.

1. Basic Woodland Type	2. Woodland Structure	3. Main species	4. Percentage Cover
Mature Woodland (M)	Understorey present (UP)	Scots pine (SS)	100%-65% (a)
		Norway spruce (NS)	
		Sitka spruce (SS)	
	Understorey absent (UA)	Larch (L)	65%-35% (b)
Other conifer (OC)			
Oak (O)			
Scrub woodland (including newly established woodland) (S)	Groundcover present (GP)	Beech (B)	35%-15% (c)
		Hazel (H)	
		Sycamore (Sy)	
Conifer plantation (C)	Groundcover absent (GA)	Birch (Bi)	15%-1% (d)
		Other broadleaf (OB)	
		Open ground (Op)	

For each habitat, choose one item from Column 1 plus an understorey and a groundcover component from Column 2. Then choose the four commonest tree species from Column 3, each of which is assigned a, b, c or d from Column 4. Some habitats may have fewer than 4 tree species. Alternatively, forest stock maps may be used if available.