

## **9 Standard operating procedures – Methodology guidelines & photographs**

This section details the actual field methods used for trapping grey squirrels that may be converted into print material to be passed on to landowners. It is largely based upon the findings of the project team, combined with best practice from the UK as described in Mayle, *et al.* (2007) together with advice relating to squirrel control in Ireland contained in Lawton (2003) and Teagasc Farm Forestry Series No.8 (2005).

### **9.1 Trapping**

#### ***9.1.1 Trap design / recommended model***

Standard mink traps are the best option for trapping grey squirrels, as shown in Figure 9.1. These are available from a range of suppliers in Ireland (see Section 11.2); the recommended model is supplied by Dingle Poultry & Farm Supplies, County Kerry, owing to its ease of use, strength and long-term durability. These are ‘live’ cage traps, where an animal is caught and held without harming it; any non-target species such as red squirrels may easily be released, while grey squirrels can be dispatched humanely.



**Figure 9.1 – Standard mink trap used for trapping squirrels**

### ***9.1.2 Timing of control***

Trapping of grey squirrels should be carried out between January and May. Natural food resources are at their lowest levels during this period and consequently squirrels will be drawn to any artificial food supplies. Trapping during the summer and autumn usually results in very poor capture rates and is considered a waste of resources. Trapping during the late winter and spring has the added benefit of disrupting the breeding cycles of a resident grey squirrel population. By removing as many pregnant or lactating females as possible, the capacity of a grey squirrel population to rapidly increase its numbers is greatly reduced. The risk of damage to trees during the following season is consequently minimized.

### ***9.1.3 Trap operation***

Traps are operated via a treadle connected to a wire (strand or rod) that holds the trap door open. The wire is released when an animal puts weight on the treadle and the door then shuts and is held in place by a sprung bar (see Figure 9.2).



**Figure 9.2 – Spring mechanism in trap**

### ***9.1.4 Bait***

Live trapping involves attracting squirrels to a trap with bait. Whole maize (also sold as pigeon corn) is recommended for this purpose, as it very visible to squirrels when scattered on the ground (see Figure 9.3). Grey squirrels only eat the central germ of the maize grain and

discard the remainder. This has the advantage of showing whether squirrels have visited a trap and not been caught. Whole maize is available from animal feed suppliers nationwide.



**Figure 9.3 – Whole maize used for baiting traps**

#### ***9.1.5 Laying traps***

Traps should be set in a woodland at an approximate density of 1 per hectare. However, in sites that exceed 20ha, the number of traps would become unmanageable; in these situations, traps should be concentrated in areas of damage, blocks of high risk tree species (such as sycamore, oak and beech), or adjacent to ‘holding habitat’ i.e. areas consisting of mature trees where squirrels are most likely to build their dreys. Traps may be placed in pairs if preferred.

Traps should be set where road or path access is reasonably good, but efforts should be made to ensure they are not conspicuous, this being of particular importance in areas of high public access. Traps may be camouflaged to a degree by building up foliage and dead branches around the sides, but leaving the trap clearly visible from above. Figure 9.4 depicts what an appropriately positioned trap should look like.



**Figure 9.4 – Appearance of trap in situ**

Grey squirrels forage frequently on the woodland floor, so traps may be set on the ground (tent pegs or similar may be used to secure the traps to the ground). Where it is found that non-target species such as rats are caught, or traps are disturbed by predators such as foxes or badgers, traps may also be set on tree stumps or on artificial platforms. Maize should then be scattered in the immediate vicinity of the trap and most importantly, inside the trap behind the treadle.

Where grey squirrel trapping is to take place in areas also containing red squirrels, it may be advisable to build nest boxes for attachment to the cage trap. Red squirrels are prone to rapid body heat loss and the addition of such a nest box will eliminate the risk of harm to any red squirrels caught during trapping. A hole in the wire mesh should be cut at the opposite end to the trap door, and a wooden box secured to the cage using screws or ‘u-nails’ (see Figure 9.5).



**Figure 9.5 – Trap with nest box attachment at opposite end to door**

One should aim to trap the majority of a grey squirrel population in the shortest possible time to minimise labour costs. ‘Pre-baiting’ is essential to give the squirrels a chance to find the traps and become used to feeding. It should last for a minimum of five days. During the pre-bait period trap entry doors should be fixed open securely so that there is no possibility of accidental capture. Maize should be scattered liberally around the trap and behind the treadle. It is not necessary to visit pre-baited traps daily; twice or three times during the five days should be sufficient to ensure that any bait taken can be topped-up as necessary. Squirrel activity at traps may be identified by the presence of maize grains with the central germ removed.

#### ***9.1.6 Setting traps***

Once the pre-bait period has elapsed and there is definitive evidence of squirrel feeding activity at the majority of traps, active trapping should be initiated. Traps should be set as close to dawn as possible to maximize capture success. Traps are set by swinging the door up into the trap (see Figure 9.6) and securing it by the treadle wire (see Figure 9.7). The mechanism should be set as lightly as possible, to minimize the risk of a grey squirrel entering a trap but not being captured. If necessary, more bait should be added behind the treadle, but very little should be scattered around the trap. When set, traps need to be checked once daily to minimize the length of time any captured animal spends inside; if possible, checking traps

twice a day is recommended, especially where a squirrel population is particularly high, as trapping success is likely to increase if traps can be used more than once a day.



**Figure 9.6 – Trap set with door open**



**Figure 9.7 – Trap setting mechanism, with trigger highlighted**

### **9.1.7 Dispatch**

Trapped squirrels may be disposed humanely using an air rifle or pistol applied through the roof of the trap, directly against the head of the animal; trapped squirrels will tend to press themselves into the top corners of a trap, making such a dispatch method the quickest and simplest to apply (see Figure 9.8). Death is instantaneous, following which the door of the trap can be levered open and the body tipped from inside. Dead squirrels may then be disposed of in the undergrowth for carrion feeders such as foxes and corvids to find. Use of other firearms for dispatching grey squirrels in traps is not advised on safety grounds. Traps may then be baited and reset for another trapping session.



**Figure 9.8 – Grey squirrel dispatch with air rifle**

Where dispatch of animals using the above method cannot be applied, squirrels may also be humanely killed using the following method. A medium weight hessian sack is used to extract the squirrels from the trap. After first checking that there are no holes in it, the open end of the sack is placed around the trap exit door and the width of the sack rolled up to form a tunnel. The operator should be positioned so as not to deter the squirrel from entering the sack. The trap door is then opened, and the squirrel encouraged out of the trap and into the sack. The squirrel is then moved into the corner of the sack and killed rapidly and humanely

by a single blow to the back of the head with a blunt instrument. It is recommended to wear sturdy gloves whilst handling squirrels to avoid the risks of bites.

### ***9.1.8 Duration of trapping***

If the pre-bait process has been adhered to, several squirrels should be caught on the first day of active trapping and on each subsequent day. Between 5 and 10 days of such work should be required to remove the majority of animals from a local population. When the number of animals caught on a single day is seen to drop significantly, it can be assumed that most of the grey squirrels in a woodland have been dispatched. If capture numbers drop to zero before 10 days of trapping have been completed, it may not be necessary to continue.

### ***9.1.9 Licensing***

No licence is required to trap or kill grey squirrels; a current gun licence will be needed to use an air rifle for dispatch. Red squirrels are protected under the Wildlife Acts of 1976 and 2000; in areas where grey squirrel control using trapping is to take place in the presence of red squirrels, individuals should inform their local Conservation Officer in advance. Also see Section 9.2.4.

## **9.2 Shooting**

Shooting of grey squirrels may be a useful alternative to trapping for some landowners, particularly in woodlands where there are artificial food resources (such as pheasant feeders) or favoured tree species that will attract grey squirrels during fruiting (such as sweet chestnut). Good access roads or tracks are also beneficial when embarking on a control programme using shooting; if access is particularly good, control may be carried out from inside a vehicle, firing a .22 rifle through an open window.

### ***9.2.1 Timing***

The control period using shooting is generally the same as for trapping (see 9.1.2), as removing squirrels during this time will maximize disruption to the population's breeding cycle. An exception occurs when squirrels are attracted to fruiting trees in the autumn; several days of intensive control around such trees has been shown to reduce damage in the following year.

### **9.2.2 *Gun types***

Each woodland owner or their appointed pest controller will have their own personal preference for the type of gun used for control. Both shotguns and low-velocity rifles with silencers may be used in this regard. Shotgun cartridges of shot size 4 (3.05 mm) or 5 (2.79 mm) are recommended by professionals in the field. Sub-sonic .22 rounds are ideal for short to mid-range grey squirrel control.

### **9.2.3 *Safety***

Control is best carried out early in the morning, when squirrels are most active and there is less chance of encountering members of the public. Public safety is always a concern when dealing with guns; when using a rifle to dispatch squirrels, one should ensure that the background landscape is safe for shooting into. Grey squirrels are most easily targeted when they are on the ground; this is the most advisable location to target them with rifles. Grey squirrels in the canopy may be better dispatched using a shotgun.

### **9.2.4 *Licensing***

No licence is required to trap or kill grey squirrels; an appropriate gun licence will be needed to use a firearm for dispatch. Red squirrels are protected under the Wildlife Acts of 1976 and 2000; in areas where grey squirrel control using shooting is to take place in the presence of red squirrels, individuals responsible should familiarize themselves with how to distinguish the two species at a distance. It is not always easy to distinguish red and grey squirrels by visual appearance alone, even though adult grey squirrels are about a third larger than red squirrels. In particular, general fur colour is not a reliable guide as both species can exhibit a range of tones. An identification guide is shown in Figure 9.9.



***Red squirrel identification:***

- Coat: above – russet red to grey brown; below – white or off-white
- Tail: red, red with black tinges (may be white-tipped)
- Ears: Large tufts prominent in winter; red-brown to white
- More likely to be seen in trees than on the ground



***Grey squirrel identification:***

- Coat: above – grey in winter, grey with chestnut in summer; below – white
- Tail: brown and black with white fringe
- Ears: Never develop tufts – more closely resemble those of rats and mice
- More likely to be seen on the ground than in trees

**Figure 9.9 – Squirrel identification guide**

### **9.2.5 *Gun club cooperation***

Where a landowner does not wish to carry out control themselves, they may wish to contact their local gun club. Grey squirrels are now included on the NARGC's vermin list; prizes are awarded on a local basis to individuals who shoot the highest numbers of squirrels.

### **9.2.6 *Squirrel calls and drey poking***

Squirrel calls and drey poking may be used in conjunction with shooting to maximize efficiency. Squirrel calls are a sonic device that consists of a rubber bulb and a reed, similar to a duck call (see Figure 9.10). Shaking or squeezing the bulb causes a loud squeaking noise that mimics the feeding or distress calls of a squirrel. Squirrels are drawn out from hiding to investigate the source of the noise, making for an easier shot. Squirrel calls can be purchased/ordered from the majority of gun shops in the country.



**Figure 9.10 – Squirrel call**

Drey poking involves locating squirrel dreys (see Figure 9.11) and disturbing them with a long pole. Any squirrels inside the drey will attempt to escape and can be shot as they do so. This is best carried out by a professional pest controller or gamekeeper, in order to minimize disturbance to other wildlife, whose nests may resemble squirrel dreys.



**Figure 9.11 – Squirrel drey**

### **9.3 Poisoning with warfarin**

Poisoning with warfarin is not recommended for grey squirrel control in Ireland; for details see Section 8.4. For reference purposes, a detailed description of its application in the United Kingdom is contained in Mayle *et al.* (2007).

### **9.4 Red squirrel conservation**

The conservation of red squirrels in Ireland requires a multi-disciplinary approach from various state agencies and stakeholders. Many of the components that may combine to achieve this are detailed in the All-Ireland Red Squirrel Species Action Plan. The text of this document is available for download from [www.npws.ie](http://www.npws.ie).

Individuals or conservation groups often enquire if there is anything they can do to protect local populations of red squirrels. Most frequently this involves a request to introduce (or re-introduce) red squirrels to a woodland. Such introductions must adhere to strict criteria as defined by the IUCN, and may only be carried out in Ireland under licence by NPWS. The feasibility of any future red squirrel translocations is dependent on the findings of two trials in

Connacht (Derryclare, Co. Galway and Beleek Wood, Co. Mayo) which are currently being monitored by researchers at NUI Galway.

However, individuals and conservation groups may be encouraged to protect any local red squirrel populations in several ways:

- Local monitoring schemes may be put in place whereby members of the public can report sightings of either species of squirrel. This will allow any conservation programmes to be accurately targeted. Such schemes will also more easily facilitate the presentation of records in any future national surveys. Conservation Officers should make themselves available to archive such records
- Supplementary feeding of red squirrel populations can be very useful for maintaining/boosting numbers and improving survival over the winter. Such schemes can involve the general public and schools and help to publicise the threat posed to the red squirrel. Such feeding should only be carried out where red squirrels are found in isolation, as grey squirrels would also benefit from additional food. Specially designed hoppers that exclude grey squirrels but not red squirrels have proved to be limited in their application, and are also expensive to purchase
- People may be encouraged to embark on planting schemes of red squirrel-friendly tree species such as Scots pine and Norway spruce
- The public should be encouraged by various stakeholders (NPWS, Coillte, Forest Service) to report any sightings of grey squirrels from areas where they have not been previously recorded to their local Conservation Officers. Landowners in such areas should be encouraged to control such frontier grey squirrel population to slow the spread of the grey squirrel into currently uncolonised parts of the country
- Individuals and groups should be informed by various stakeholders (NPWS, Coillte, Forest Service) about squirrel pox virus and how to recognize its symptoms in red squirrels; they should also be willing to collect any bodies displaying symptoms, or at the very least, report such cases to their local Conservation Officers.