



# NORTHERN IRELAND SQUIRREL FORUM STANDARD OPERATING PROCEDURE:

## CONTROL OF GREY SQUIRRELS FOR RED SQUIRREL CONSERVATION ~ A CODE OF GOOD PRACTICE.

### INTRODUCTION

Our native red squirrel (*Sciurus vulgaris*) is at significant risk of being displaced by the introduced eastern American grey squirrel (*Sciurus carolinensis*). The larger grey squirrel can easily outcompete the red squirrel for resources; including food and habitat. The grey squirrels are known carriers of diseases such as the squirrel pox virus and the adenovirus. Both viruses are fatal to the red squirrel whilst causing no known harm to the grey squirrel; the viruses are spread by direct and indirect contact between the animals. Grey squirrels are found across Northern Ireland particularly in the centre and east, at the time of writing they are largely absent from County Fermanagh. The Northern Ireland Squirrel Forum (NISF) agrees that grey squirrel control is carried out as a necessary part of the management prescription for the conservation of red squirrels.

This Code of Practice has been created to act as a guide to anyone who wishes to undertake grey squirrel control for conservation or tree protection reasons. The guide references NI legislation although similar principles apply across the UK and Ireland.

This document describes suitable control measures and their application. The timing of these measures should be determined by the landowner, and where appropriate, the squirrel group (with the landowner's permission). The methodology selected may be limited by the time of year or the target squirrel's previous experience of control efforts. Where it is deemed that grey squirrel control is necessary, the operator must do so in a professional and humane manner.

There are several recommended methods by which grey squirrels can be controlled. **The NISF would strongly advise that all persons intent on undertaking grey squirrel control undergo some practical training with an experienced person before embarking on a program of grey squirrel control.**

**Those persons operating on land with public access or land belonging to a third party and those working with staff or groups of volunteers must ensure that have appropriate levels of insurance.**

## **1. PERMISSION OF LANDOWNER TO CONTROL TARGET SPECIES.**

It is of the utmost importance before any control of grey squirrels is undertaken that the permission of the landowner (preferably written) is obtained. If the landowner does not control the sporting rights, it will also be necessary to seek the permission of the owner(s) of the sporting rights.

## **2. METHODS OF CONTROL.**

- a. The controller must be competent to be able to quickly identify red and grey squirrels.
- b. The person(s) using these methods of control must be aware of the various pieces of wildlife legislation which apply:

**The Wildlife (Northern Ireland) Order 1985 (As Amended).**

**The Wildlife and Natural Environment (NI) Act 2011**

**The Welfare of Animals Act (Northern Ireland) 2011 (As Amended).**

**The Spring Traps Approval Order (Northern Ireland) 2019.**

**The Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019.**

- c. The most effective methods of controlling grey squirrels in areas where they are known to co-habit with red squirrels is the use of live cage traps and/or shooting. The method applied will be determined by a range of factors including; public safety, volunteer training, volunteer availability, landowner wishes, squirrel densities, group policies, seasonal differences, financial constraints and legal restrictions. It may be that the site suits a combination of approaches.

## **3. LIVE CAGE TRAPS**

Cage-traps come in various sizes; depending on the target species. Make sure your traps are designed to live-catch squirrels. The traps are readily available from hardware stores and specialist retailers online. All are basically a wire mesh box constructed of with one or two open ends. The doors are triggered by an internal foot plate.

Traps must be set to protect captured animals from flooding, hyper- or hypothermia, adverse weather conditions and harassment by domestic animals, people and predators<sup>1</sup>.

Cage traps can be modified with polythene, plywood or Perspex walls and roofs to deflect rain, and shelter the captive animal.

Single-capture (one door) traps are preferred because these reduce incidents of trapped animals fighting – especially important where greys and reds occur together.

It is important that the cage trap is of the correct size to trap the target species. Squirrel cage traps for single captures are approximately 150x175x545mm (6x7x23"). Dimensions may vary slightly between manufacturers.

**Trappers should ensure they have the ability to safely dispatch the grey squirrel before they set the traps.**

#### **4. WHERE TO SET TRAPS**

Walking through the site will help you determine the best locations for trapping, these areas will be out of sight of the public, accessible and hopefully where the grey squirrels are found. Do not make the location or position too difficult for yourself or your team or you will quickly tire of the task. Talking to the landowner may help you gain insight as to where the squirrels can be found. In accordance with published guidance<sup>2</sup>: The best sites to place traps are generally under the largest trees in a wood, particularly those with branches extending well down the trunk with tips near to the ground or on known squirrel pathways. Yew, Holly trees or single conifers in predominately broadleaved woodlands will often make good sites, as do tree stumps that are regularly used as feeding sites.

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<sup>1</sup> Powell, R. A. & Proulx, G. (2003). Trapping and marking terrestrial mammals for research: Integrating ethics, performance criteria, techniques, and common sense. *Ilar Journal*, **44**:259-276.

<sup>2</sup> Forestry Commission – Practice Note: Controlling Grey Squirrel Damage to Woodlands FCPN4



Photo 1. A determined trapping effort at a favourite tree of some grey squirrels – clearly only suitable away from the public eye. Most trapping set ups would be more subtle.

The traps can also be mounted on platforms attached to posts or trees, which reduces interest from foxes, badgers and dogs etc. The ground around the trapping area should be largely bare so that bait can be easily seen. Squirrels tend to avoid areas of dense wet vegetation. Traps should be somewhat camouflaged to disguise their appearance using locally available plant foliage. This also provides a degree of shelter and warmth for any animal trapped. When trapping during a squirrel pox outbreak the best practice guides suggest the use of traps mounted on temporary platforms that can be easily disinfected.

**Avoid setting traps on or near public footpaths, public rights of way, and areas of common land used by people or persons exercising domestic animals.**

**Never set traps on land where livestock are grazing.**

**Traps must be firmly anchored using tent pegs or similar.**

**Where possible consider pre-baiting and using camera traps to determine the areas usage by wildlife prior to expending time setting traps.**

## **5. BAIT**

Pre-baiting either by scatter baiting around the trapping area and/or placing bait inside locked-open traps is not a requirement and really the choice of the individual or the group but probably beneficial when squirrel control first occurs in an area. Pre-bait for up to five days, but minimise visits to the traps during that period to reduce disturbance. However there are clear cost and time implications of pre-baiting and the trapping efficiency may not increase markedly after the initial round of trapping.

Grey squirrels will come to a range of food baits but Forestry Commission (FC) research suggests that yellow whole maize is one of the best. It is cheap, readily available and it stores well. Squirrels prefer to eat the germ of the maize, however you will not be able to tell whether it is reds or greys by the maize gnawing alone.



Photo 2. FC Practical Note FCPN4 (revised) Controlling Grey Squirrel Damage to Woodlands © Crown Forest Research/Mark Ferryman.

Peanuts and sunflower seeds can be used as bait but may attract more rats, birds or other non-target species. Adding these at <20% to the maize creates an attractive mix and it is worth remembering that if the squirrels see the birds are happy to visit a feeding station, then they are more relaxed and the probability of them entering the trap increases. Additionally use of apples, peanut butter or chocolate spread is also attractive to squirrels.



Placing the bait inside the trap in a container such as a yoghurt tub (see photo 1 above) with a loose lid suspended from the roof of the trap reduces the amount of bait lost to mice and reduces bait spoilage.

## 6. CHECKING TRAPS

To maintain high animal welfare standards and avoid breaches of 'The Welfare of Animals (NI) Act 2011' **traps must be inspected at least once every day between dawn and dusk.** NISF good practice recommends at least twice daily inspections (*or more frequently where the risk of catching red squirrels exists particularly during the breeding season*). During the warmer months traps can be set all night as long as they are suitably sheltered from the direct wind and rain. However during cold spells in winter when ground temperatures can get particularly very low at night and it is recommended to close or disarm traps during the hours of darkness.

## 7. SQUIRREL DISPATCH

Grey Squirrels are non-native animals listed under the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019. Listed animals may not be released into the wild once they have been captured and must be humanely dispatched.

## 8. CRANIAL CONCUSSION ('THE SACK METHOD')



Operators should wear thick leather gauntlet style gloves with waterproof nitrile gloves underneath. Isolate the squirrel at the rear of the trap using a temporary comb<sup>3</sup> through the wire mesh of the cage. Place a Hessian<sup>4</sup> sack over the door end of the trap. Make sure the sack is tightly closed around the outside of the trap to prevent escape. Open the door. Remove the comb, if necessary tilt

the trap using the handle. The squirrel should instinctively move so that its head goes into the corner of the sack, quickly gather up excessive sack cloth to reduce its movement options. Holding it firmly immobilising the squirrel,

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<sup>3</sup> The comb is constructed of metal or wooden rods which fit into the cage bars restricting access. Combs can be purchased through trap suppliers or made from timber dowelling rod or metal cut to shape.

<sup>4</sup> There are some grey controllers who prefer to use transparent polythene sacks to dispatch the greys because it allows them to ensure that the animals are in the correct position before striking and this enables a very clean kill. The NISF is happy to endorse this method but would encourage practitioners to carry another less transparent bag to carry soiled bags and carcasses out of the woodland discreetly.

confirm the position of the squirrel head<sup>5</sup>, place the sack containing the squirrel on a solid object such as tree stump or rock and using a hard, heavy club (e.g. a fishing priest) apply a single sharp blow delivered to the top of the squirrel's cranium (head). The blow must be delivered with 'follow through' to ensure enough force to cause a depressed fracture of the skull, thereby destroying the brain and causing death. The animal may twitch due to nervous discharge, but if correctly applied a single blow will ensure death. Where necessary a subsequent blow(s) may be required to ensure dispatch. **Good practise dictates; that you should have the equipment with you to carry out this method of dispatch even if your intention is to use one of the other techniques, as a backup method.**

## 9. SHOOTING DISPATCH

Experienced, licensed firearms users may choose to shoot the squirrel by placing the muzzle of the gun through the cage mesh. This method of control should only be carried out by competent persons with a valid firearms license, full insurance, written permission of the landowner, using appropriate firearms and ammunition.

The safest weapon for 'in cage' squirrel dispatch is an air rifle or air pistol<sup>6</sup>, the choice of calibre is largely irrelevant when used at 'point blank range', the ".177" ".22" or the less common ".20" are fine provided they produce sufficient power to ensure a clean dispatch. Shots must be aimed to enter the brain at 'point blank range' causing instant loss of consciousness. Shooters normally use combs to act as a crush to restrict the animal's movement, achieving a cleaner kill. Extreme care must be taken by anyone using this methodology. Pellets may deflect off the cage wire or stones on the ground. Place the cage on soft ground clear of stones before shooting. All additional observers should do so at a safe distance and have appropriate eye protection.

It is the responsibility of all shooters to ensure the safety of themselves, colleagues, members of the public and non-target species. Failure to do so may lead to criminal prosecution and or civil litigation.

## 10. THE USE OF A SPRING TRAP TO DISPATCH IN PARTNERSHIP WITH LIVE TRAPPING.

To improve dispatch efficiency the NISF members have lead the way in developing the spring trap dispatch method. Attaching a legal spring trap

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<sup>5</sup> This is much easier using the transparent bag.

<sup>6</sup> Possession of an air rifle or pistol in Northern Ireland requires a firearms certificate.  
[https://www.psni.police.uk/advice\\_information/firearms/](https://www.psni.police.uk/advice_information/firearms/)

housing to the entrance of the cage trap as a 'clean' method to dispatch. With a few minor alterations<sup>7</sup> to the Kania 2000 spring trap housing allow it to be fitted tightly to the entrance of the cage trap.



Photo 4. The Kania 2000 attached to a standard squirrel trap, two springs hold the two traps close together to avoid escapes.

With the squirrel restrained at the back of the trap using the trap comb as above. Arm the spring trap and attach it securely using the springs or bungee cords to the cage trap, ensuring that the squirrel cannot push past it. The door can then be lifted and locked open using a wooden dowel or tent peg, and the trap comb released. The squirrel should likely run toward the spring trap and be dispatched cleanly. The spring trap housing can be modified to have a Perspex window which encourages the squirrel to run toward the light, but this is not entirely necessary.

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<sup>7</sup> Modifications to the spring or kill bar mechanism of the trap would render it illegal, we have only added lugs to housing walls to attach shock cords and opened a window in the box to encourage the squirrel to enter the tunnel.





Photo 5. The Kania 2000 with the back cut out of the housing and Perspex window inserted to encourage the squirrel to run toward the light.

This method is a clean and efficient dispatch that is largely blood free and reduces chances of the squirrel escaping or the operator being bitten or scratched.

The future availability of Kania traps is in doubt so the use of other legal spring traps is being looked at.

## **11. EUTHANASIA BY VETERINARIAN.**

While this is unlikely to be an economical method of control, trapped grey squirrels may be dispatched by licensed vets using approved pharmacological products. Journey times should be kept to a minimum, i.e. under 1 hour, keep the trap covered but well ventilated, away from other animals and children. Carcasses must then be disposed of appropriately

## **12. SHOOTING**

An initial survey of the site must be undertaken to ensure safe and responsible use of any firearms, a written risk assessment should be retained. This method of control should only be carried out by competent persons with a valid firearms license and full insurance, using appropriate firearms and ammunition. Shooting with a sound modified small calibre rifle or powerful air rifle can be an efficient method of control in many circumstances and can be used in conjunction with trapping. It is particularly useful where there are some trap shy animals. Some shooters also use the .410 Shotgun particularly when approaching baiting stations, although the noise created may deter other animals visiting the site in the short term. Feeding stations with

appropriate built-in back stops can be useful to clear greys from a wood safely.

**Only shoot where you have the permission of the landowner or authorised tenant.**

Going on to private property, where you do not have permission, is trespassing. If you are carrying a firearm it becomes 'armed trespass'. Armed trespass is a serious criminal offence carrying heavy penalties.

**All shooting activities must be carried out in accordance with the Firearms (Northern Ireland) Order 2004, the Firearms (Amendment) (Northern Ireland) Order 2005 (and any subsequent amendments).**

Part VII 61 (1) amended by art 5(1) of the 2005 order and (2) shown below may be of particular interest. However all aspects of this order should be taken into account. When carrying or discharging firearm in a public place:

**Art 61(1) and amendment Art 5(1) A person who has with him in a public place -**

**a loaded shotgun;**

**an air gun (whether loaded or not);**

**any other firearm (whether loaded or not) together with ammunition suitable for use in that firearm; or**

**an imitation firearm,**

**shall be guilty of an offence unless he shows that he had lawful authority or reasonable excuse for doing so.**

**Art 61(2) A person who discharges any firearm on any public road or within 18 metres of the centre of any public road, or in any church, churchyard or burial ground shall be guilty of an offence unless he shows that he had lawful authority or reasonable excuse for doing so.**

Advice about firearms and the law in Northern Ireland can be sought from the PSNI Firearms and Explosives Branch.

<http://www.psni.police.uk/index/advice-and-legislation/firearms.htm>

Further guidance is published by [The British Association for Shooting and Conservation](#) (BASC) in the form of codes of conduct for using firearms, but remember these publications are aimed primarily at an audience in GB and the firearms legislation varies greatly between the two jurisdictions.

[BASC - Shotgun Code of Practice & BASC - Air Rifle Code of Practice](#) –  
**BASC NI run a grey squirrel course which deals with firearms use for this practise.**

***'Drey poking'***

This involves disturbance of grey squirrel dreys with long poles. Flushed squirrels may then be shot by with shotguns. This technique is not recommended for woodlands with both red and grey squirrels as it may be difficult to differentiate between species as they escape.

**It is the responsibility of all shooters to ensure the safety of themselves, colleagues, members of the public and non-target species. Failure to do so may lead to criminal prosecution and or civil litigation. All operators must ensure that they carry appropriate levels of insurance to cover themselves in event of any incident.**

13. *CONTROL AND DISPATCH METHODS, THAT ARE NOT APPROPRIATE AND ARE NOT RECOMMENDED BY NISF INCLUDE:-*

**SPRING TRAPS** - In many circumstances the use of approved spring traps is legal in Northern Ireland but is strictly controlled under The Spring Traps Approval Order (Northern Ireland) 2019. It must be stressed that this would be a very unsuitable method of controlling grey squirrels in areas where both reds and greys are found. With the exception of the use of Spring traps for in trap dispatch see above.

**POISONING** - the only rodenticide previously approved for used in the control of grey squirrel has been withdrawn from use by the EU. Currently there is no alternative on the market although this may change. NISF do not endorse the use of poisons to control grey squirrels in NI as this would be a very unsuitable method of controlling grey squirrels in areas where both reds and greys are found.

**DROWNING** - Drowning is not considered a humane method of dispatch and should not be used. Those who intentionally drown an animal may face prosecution under the Welfare of Animals (NI) Act 2011 as amended.

14. **CONFIRMATION OF DEATH.**

**To comply with animal welfare legislation you must ensure the squirrel is dead.**

**Unconsciousness and insensibility can be assessed through:**



**a. Loss of posture,**

- b. Fixed, dilated pupils,**
- c. Lack of papillary response and blinking to light shone in the eye,**
- d. Loss of coordinated movements.**

**Death is indicated by:**

- e. Loss of rhythmic breathing,**
- f. Loss of heart rate,**
- g. Onset of rigor mortis<sup>8</sup>.**

#### 15. *CARCASS DISPOSAL*

Displaying carcasses is not recommended and may offend other countryside users. Where small numbers of carcasses are collected they should be either buried or incinerated, if no other purposeful use can be found for them. If a major cull is likely to generate a large number of squirrels in a relatively short period of time contact the Northern Ireland Environment Agency (NIEA) : [Squirrels@daera-ni.gov.uk](mailto:Squirrels@daera-ni.gov.uk)  028 905 69551.

#### 16. *BY-CATCH*

Every effort must be made to avoid the capture of non-target species. Knowledge of the tracks and signs of both target and non-target species is essential. Any incidental captures should be released on site as soon as possible (with the exception of Wildlife (NI) Order 1985 {As Amended} Schedule 9(1) species which should be dispatched humanely).

To remove a non-target animal, the trap door should be levered open with a stick (if the animal is too big to be restrained by the trap comb) and locked open. The captured animal is likely to be stressed and it is advisable to wear appropriate gloves. If the animal is catatonic in the cage, open the door and leave it quietly for five minutes. If these options fail, gently persuade the animal to leave using the cage combs. Any red squirrel trapped by accident must be released. If hedgehogs are being repeatedly capture then consider mounting your squirrel trap off the ground.

#### 17. *TRAP HYGIENE AND MAINTENANCE*

Where there are traps and other equipment being used for grey squirrel management a hygiene regime must be enforced particularly where there are

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<sup>8</sup> Central Science Laboratory (2009). Review of methods of humane destruction of grey squirrels (*Sciurus carolinensis*) Scottish Natural Heritage – Commissioned report 317.

red squirrels within ~15 miles. When any animal has been captured in a trap there will certainly be traces of saliva, blood, urine and faeces. There are a range of pathogens that are transmitted by contact with these substances. Cleaning equipment, as per [NISF Standard Operating Procedure: Trap and Feeder Hygiene](#), reduces the risk of disease transmission between animals and between animals and humans. Where resources permit, use two or three traps per zone, remove one trap from the site for cleaning and replace with the second trap, while a third trap 'rests' following cleaning. If trapping in an area with no red squirrels within 15 miles then the trap hygiene regime is less important, but should be kept under review.

#### 18. *HEALTH AND SAFETY NOTE:*

Trapped animals will almost certainly urinate and defecate while in the trap and when trapping you may encounter rats or other rodents. Weil's disease or Leptospirosis is a serious and potentially fatal infection that is transmitted to humans by contact with urine from infected wildlife (especially rats) and farm animals. The bacteria can enter your body through ingestion, cuts and scratches. Leptospirosis is an infectious condition that can cause a range of different symptoms such as mild flu-like symptoms or, in severe cases, result in multiple organ failure and internal bleeding that can result in death. Make yourself aware of the symptoms and report to your GP if you display them, be sure to inform your GP of your work with squirrels.

<http://www.nhs.uk/conditions/Leptospirosis/Pages/Introduction.aspx>

Recent research in GB has indicated that squirrels can carry a strain of the bacterium *Mycobacterium lepromatosis*, the causal agent for Henson's Disease or Leprosy in humans. At this stage it is unclear if the bacteria can be passed from squirrels to humans. The main route of transmission of leprosy between humans is respiratory droplets, through coughs and sneezes, although it may also spread by ingestion or enter the body through cuts and bites. However it is worth noting that >95% of humans exposed to the leprosy agent do not react to it. Be alert for signs and symptoms of leprosy in humans. There can be a considerable lag between exposure to the bacterium and any physical symptoms which can extend to several years. Make yourself aware of the symptoms and report to your GP if you display them, be sure to inform your GP of your work with squirrels. Symptoms mainly affect the skin, nerves, and mucous membranes (the soft, moist areas just inside the body's openings).

#### **THE DISEASE CAN CAUSE:**

**Skin lesions that may be faded/discoloured**

**Growths on the skin**



**Thick, stiff or dry skin**

**Numbness on affected areas of the skin**

**Muscle weakness or paralysis (especially in the hands and feet)**

**Eye problems that may lead to blindness**

**Enlarged nerves (especially those around the elbow and knee)**

**A stuffy nose**

**Nosebleeds**

**Ulcers on the soles of feet**

**Since Hansen's disease affects the nerves, loss of feeling or sensation can occur.**

The disease can be successfully treated but can be misdiagnosed, as it is so rare in the UK/Ireland.

To reduce the risk of any infections wear suitable gloves (ideally using barrier waterproof gloves under thick leather gauntlet style gloves) when handling traps etc and maintain good personal hygiene. Washing hands regularly and use of alcohol hand-gels will reduce risk of transmission, outer clothes used during squirrel work should be regularly washed in a hot wash with an appropriate anti-bacterial detergent. Make sure your *tetanus* inoculation is up to date.

Eye protection and chemical proof nitrile gloves should be worn when using disinfectants to clean traps and feeders. Eye protection may also be advisable when using an airgun to dispatch animals.

Risk assessments for the tasks should be considered, especially for employees and volunteers where these may be a legal obligation for the controlling organisation.

#### **19. ADHERENCE TO BEST PRACTICE**

**RECORD KEEPING** – it is good practice to maintain trapping effort records, i.e. number of traps set and number of greys caught. Also record number of man hours spent hunting. **Appendix 1** details an example form.

Finally, anyone controlling grey squirrels for the Red Squirrel Groups will be given a copy of this document. They are required to read and adhere to the guidelines during control activities. Although this is a policy decision for each Red Squirrel Group it is recommended that each person will also be expected to sign a code of practice acceptance form. In doing so the Northern Ireland

Squirrel Forum can be confident that all persons carrying out grey squirrel control activities will do so in accordance with our Code of Practice.

This Code of Practice can be changed, amended or revised by The Northern Ireland Squirrel Forum. It is a guide to ensure that any volunteers carrying out control of the grey squirrel population do so in a professional and responsible manner.

All operators remain responsible for their own health and safety and that of their colleagues and members of public they may encounter during squirrel control operations. All operators must ensure that they carry appropriate levels of insurance to cover themselves in event of any incident.

Remember the landowners, the Northern Ireland Environment Agency, nor the Northern Ireland Squirrel Forum cannot be held responsible for your actions.

*CONTACT THE NISF:*

**☎028 905 69551**

**NI Squirrel Forum**

**c/o Dr Jon Lees**

**NIEA – BCS,**

**2nd flr Klondyke Building,  
Cromac Ave.**

**The Gasworks Business Park  
BELFAST BT7 2JA**

**💻:[Squirrels@daera-ni.gov.uk](mailto:Squirrels@daera-ni.gov.uk)**

## 20. APPENDIX 1

RECORDERS NAME: \_\_\_\_\_ Contact Tel: \_\_\_\_\_

Email \_\_\_\_\_ Number of staff involved: \_\_\_\_\_

Squirrel No.	Date	Site Name & Location	Grid Ref	No of traps set	No. of Captures	Trapping period in Days	By-catch	Notes