

Future for red squirrels

This page introduces key organisations aiming to protect red squirrels and is followed by sections on red squirrel conservation, grey squirrel management, and potential for pine martens to suppress grey squirrel numbers in some areas.

Saving Scotland's Red Squirrel

The Saving Scotland's Red Squirrels (SSRS) project aims to protect the red squirrel in the only region of mainland UK where it remains the only resident squirrel species: Grampian, Argyll and the Highlands.

A second aim is to protect red squirrels in a number of large landscapes across southern Scotland. Here populations of the native species are mostly intermixed with the invasive grey squirrel, but are still widespread and contiguous with the largest English red squirrel populations.

Building on the work of earlier local red squirrel projects, SSRS was launched in 2009 to deliver the grey squirrel control and public engagement elements of the Scottish Government's 2006–2011 Red Squirrel Action Plan, which had been urgently formulated to address the continuing decline of the red squirrel in Scotland. Complementary action by Scottish Forestry (formerly Forestry Commission Scotland) includes forest management to favour red squirrels in 19 Red Squirrel Stronghold forest areas, as well as Scottish Government agency support for red squirrel conservation research.

The SSRS project is run by the Scottish Wildlife Trust in partnership with Scottish Natural Heritage, Scottish Forestry, Scottish Land & Estates, RSPB Scotland and the Red Squirrel Survival Trust.

<https://scottishsquirrels.org.uk/>



UK Squirrel Accord

The UK Squirrel Accord (UKSA) is a partnership of 37 leading conservation and woodland organisations, including the RSFS, Government agencies and companies. Created at the invitation of HRH Prince Charles, UKSA works collaboratively to preserve the UK's wooded landscapes and associated biodiversity through:

- Securing and expanding the UK's red squirrel populations
- Ensuring woodlands flourish and deliver multiple benefits for future generations of people and wildlife.

UKSA is committed to the effective and targeted management of grey squirrels, and protection of red squirrels by:

- Producing communications, including through landowners and local volunteer groups, to ensure the public understand the importance of its work
- Working with and building on existing partnerships to ensure all relevant landowners are aware of the impact of grey squirrels
- Offering practical support and advice on grey squirrel management and red squirrel conservation
- Securing a long-term commitment to practical action and scientific research, developing and testing innovative management methods, publicising case studies of exemplary management, and bringing groups together to ensure they work effectively and to a common purpose.

<http://squirrelaccord.uk/>



Red squirrel © Jo Foo Wildlife Photography

The European Squirrel Initiative

The European Squirrel Initiative (ESI) was established in 2002 by a group of concerned conservationists, foresters, scientists and landowners. The objectives of the organisation are restoring the native red squirrel and protecting the natural environment by removing the alien grey squirrel from Europe. The role of ESI is to:

- Persuade conservation bodies and governments of the absolute necessity of ridding Europe of grey squirrels
- Continue to commission research into the impact of grey squirrels on local ecosystems
- Facilitate research to find an effective and acceptable method of control.

ESI believes this will be achieved by:

- Conserving and restoring the native red squirrel species together with its woodland habitats and by removing the impact and threat of the alien grey squirrel
- Advancing and promoting the education of the public in the conservation restoration of the native species and the detrimental impact of the grey squirrel
- Carrying out research into the promotion and restoration of the red squirrel
- Raising funding for research into acceptable method of grey squirrel control

<https://www.europeansquirrelinitiative.org/>



Ten years of Saving Scotland's Red Squirrels

Conservation of red squirrels cannot be successful without addressing their primary threat: replacement by grey squirrels through resource competition, accelerated by squirrel pox disease where it is present. In Scotland, grey squirrel control is carried out by live-catch cage-traps combined with humane despatch of the target animal at the trap-side, so that red squirrels may be released unharmed.

The scale of the grey squirrel control task falling to SSRS demanded a strategic approach from the outset, focussing effort where it was likely to have the greatest beneficial impact on Scotland's red squirrel population. Thus the project has three different geographical regions of operation, each with its own aims:

In Aberdeen City and Aberdeenshire the long-term goal is eradication of an isolated population of squirrel pox-free grey squirrels.

In the Central Lowlands (Tayside, Stirling and the Trossachs) the aim is to prevent northward encroachment of grey squirrels into core 'red only' areas through a programme of grey squirrel control coast to coast along the Highland Line.

In South Scotland, the initial aim was to contain or significantly slow



Family engagement in the spring feeder-box surveys. © Jo Foo Wildlife Photography

the spread of squirrel pox northward from the English border. More recently the aim of grey squirrel control here has been to protect red squirrel populations in 'priority' areas.

SSRS is now in the latest of four phases. In Phase 1 (2009–12) we set up landscape-scale grey squirrel control networks in Aberdeenshire and the Central Lowlands through a combination of project staff, agri-environment funded landowners and trap-loan volunteers. It was critical to be able to judge the effectiveness of grey squirrel control on this scale, so we also established systematic monitoring and evidence collection.

In 2012 SSRS merged with the long-running Red Squirrels in South Scotland project, which was working to combat the spread of the squirrel pox virus that had newly arrived across the Cumbrian border. By 2014 we were able to show that red squirrel decline had been halted or even reversed in all three project regions, and in South Scotland we had significantly slowed down the spread of squirrel pox virus. Unfortunately, we were not able to contain it altogether and the virus continued to extend its range through resident grey squirrels as far as Edinburgh and Glasgow.

At this stage we refocussed control effort in South Scotland towards

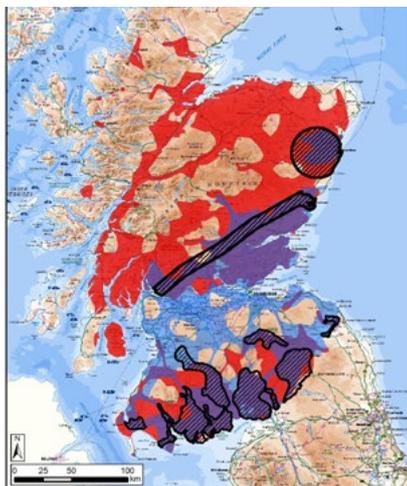
red squirrel protection in a limited number of landscapes, where existing protection networks were successfully enabling red squirrels to thrive **despite** the presence of squirrel pox virus. Mathematical modelling of the disease dynamics in red and grey squirrels in southern Scotland (White *et al*, 2016) confirmed that red squirrels in a landscape could recover and thrive if grey squirrel population densities were kept very low.

Our work has always depended on a great deal of public support, particularly the active participation of landowners and volunteers in delivering both our grey squirrel control and annual survey programs. The current five-year 'Developing Community Action' project (2017–22), supported by funding from the National Lottery Heritage Fund, sees us providing our volunteers with an enhanced programme of support and training in the skills needed to create successful long-term red squirrel protection networks. The main focus of this is South Scotland, while we continue our established conservation work in Aberdeen and the Central Lowlands.

Commercial forestry still provides a huge amount of habitat for red squirrels, and Forestry and Land Scotland (formerly Forest Enterprise

Saving Scotland's Red Squirrels Priority Areas

-  Priority Areas for project activity
-  Red squirrels
-  Grey squirrels
-  Red and grey squirrels



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➤➤➤ Scotland) assist red squirrels by including their needs in many long-term forest plans, as well as contributing to SSRS's control work in the national forest estate. Private woodland managers in priority areas can help by permitting access to project staff and trained volunteers for surveys and grey squirrel control work or, where eligible, by carrying out control work themselves through the Forestry Grant Scheme. One of the simplest things everyone across Scotland can do to help is report sightings of both squirrel species on the project's website. Advice on the available support for woodland managers in red squirrel priority areas can be downloaded at scottishsquirrels.org.uk/publications

Whilst the SWT is committed to red squirrel conservation over the long term, the contribution made by ordinary people is crucial if future generations are to see red squirrels in Scotland's woodlands.

Mel Tonkin

Saving Scotland's Red Squirrels

Reference

White A. *et al* (2016) *Modelling disease spread in real landscapes: Squirrel pox spread in Southern Scotland as a case study*. Hystrix <http://www.italian-journal-of-ammalogy.it/article/view/11657/pdf>



Tree damaged by grey squirrel. © ESI

Grey squirrel management and control

Grey squirrels damage woodland by stripping the outer bark from the main stem and the branches of trees to eat the soft inner tissue beneath. The tree eventually develops a callous over the wound, concealing the loss of timber quality. In severe cases, bark is removed in a complete circle around the tree, known as ring barking or girdling, preventing a flow of nutrients up the tree. This leads to the death and/or wind snapping of the tree above the wound, causing gross deformation and, in older trees, the loss of the entire tree. Grey squirrels also damage the base of root buttresses of mature thinner-barked trees such as beech, and branches in the crown of thicker-barked species such as oak and pine. Serious damage may be caused in just a few days. There is evidence that squirrels return to particular trees over several years. Repeated damage impairs cambial growth and allows decay into the stem. When the tree is felled and the result of several years' worth of bark damage can be seen on the stem, it may be necessary to move a section of the stump before the log can be presented for sale.

Controlling grey squirrels presents a challenge and various methods of control are available including:

- Shooting /drey poking
- Live trapping/single cage traps, multi-cage traps
- Kill traps

New methods of control are in the pipeline such as fertility control, improved lures and biological methods based on predators such as pine martens.

Shooting and drey poking – Normally carried out through the winter months it has variable results. Grey squirrels are not always in dreys, more often in holes in trees. The best time to shoot is on a wet day as grey squirrels will be in their dreys. Shooting can deliver part of an overall solution when well co-ordinated and with the establishment of group shooting clubs can be effective.

Live traps must be used where red squirrels are present. The positioning of traps is vital as grey squirrels move from residential areas to feeding areas, often along regular corridors following scent trails. These corridors should be targeted for traps for both young squirrels moving into a woodland in June and September, and for resident squirrels. Indiscriminate siting of traps has little value.

Traps must be pre-baited for a few days before setting. Grey squirrels must then be humanely dispatched, ideally by encouraging the squirrel into a bag and then administering a swift blow.

Kill traps can only be used where grey squirrels only are present. Again, they must be pre-baited. Currently the most popular kill traps are the Mark4 and Mark6 fenn spring trap and the Magnum trap.

All traps, both live and kill traps must be checked on a daily basis.

A recent innovation is the Good Nature kill trap developed in New Zealand. As of 1 January 2019, the GN18 is now fully licensed and available to be used for grey squirrel control.

Work is going on into fertility control, but an effective solution is a few years away.

Andrew Kendall,

The European Squirrel Initiative



The pine marten may help reduce numbers of grey squirrels in some areas. © ESI

The pine marten and grey squirrels

Amidst all the challenges for SSRS, a new ally for red squirrel conservation work in Scotland appears to be emerging in the form of the pine martens, now rapidly recovering from near-extinction. There is accumulating evidence that this native predator can benefit red squirrels by suppressing competing grey squirrel populations.

Some examples of this apparently in action are: mid-Tweeddale, where red squirrels have persisted despite long-term grey squirrel presence; Galloway Forest Park, where grey squirrels have been extremely slow to invade; and Strathyre, in the Trossachs, where established grey squirrel populations crashed when pine martens arrived, followed by the return of reds.

Caution is needed at this stage as we do not know if pine martens will be helpful in all circumstances.

Meanwhile grey squirrel control must continue by human agency.

ESI recognises that pine martens can be an effective, method of biological control for grey squirrels in the mix of options available to land managers, foresters and conservationists. Recent research, in part supported by ESI, carried out by the Universities of Aberdeen and Galway, shows that pine martens cause a decline in grey squirrels but has yet to determine why.

“Recent evidence obtained during a field visit to Northern Ireland helped us to further define our position on the role pine martens may have,” said Charles Dutton of ESI.

“While there is evidence to show that the presence of pine marten reduces grey squirrel numbers we were concerned about potential collateral damage. However, we were reassured

from the evidence we saw that pine martens had very little impact on other fauna, in particular game birds and other woodland nesting birds.”

ESI appreciates that while there are positive benefits of pine marten, their spread needs to be treated with caution and recognises that there are only certain parts of the UK mainland where they would have a meaningful role, particularly the uplands and semi-upland areas, while their presence in the lowlands may be less effective or not tolerated for a number of reasons. Part of the concern is that as pine martens are heavily protected, there are no mechanisms to control populations should numbers get out of hand. In line with other conservation organisations ESI does not support any illegal releases of wildlife or release of pine martens in an uncontrolled way. 



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