

Saving Scotland's Red Squirrels Transition Phase

Background

Red squirrels (*Sciurus vulgaris*) are one of the UK's rarest mammals¹. In most of the UK the species has been replaced by the invasive non-native grey squirrel (*Sciurus carolinensis*). Grey squirrels are larger and live in higher densities than reds, and therefore, in the absence of either predation or human intervention, invariably outcompete reds for resources^{2,3}. Grey squirrels also carry squirrelpox, a virus that has little to no effect on them, but which in reds has a near 100% mortality rate^{2,4}. There is now thought to be only around 287,000 red squirrels in the UK¹, 75% of which are found in Scotland⁶.

Since 2007 the Saving Scotland's Red Squirrels (SSRS) partnershipⁱ project has been working in strategic areas to protect, maintain and promote existing red squirrel populations, and to defend these populations from the spread of squirrelpox. With support from project staff, professional Grey Squirrel Officers (GSOs) have been working with volunteers and landowners to deliver strategic grey squirrel control (consisting of a combination of trap-and-dispatch and shooting methods) in four priority areas: Argyll, the Trossachs and Stirling; Tayside (collectively the Central Lowlands); North East Scotland; and South Scotland.

The Scottish Wildlife Trust (hereafter referred to as 'the Trust') has assumed a leading role in the coordination of SSRS activities for more than 10 years. In this time SSRS has demonstrated that targeted grey squirrel control is an effective and necessary practice in the fight for the survival of our native red squirrel⁷. The Trust is now looking to the statutory agencies within the SSRS partnership and other publicly, or otherwise sustainably, funded bodies, such as local councils, for an agreement to embed grey squirrel control in their operations as part of a long-term, coordinated red squirrel conservation strategy. As such, SSRS entered a two-year transition phase in April 2022, the high-level objectives of which are outlined below.

Transition phase objectives:

- Work with other agencies to take on co-ordination and delivery of long-term grey squirrel control.
- Carry out targeted grey squirrel control in Aberdeen and in the Central Lowlands to prevent grey squirrel incursion into the UK's largest grey-free red squirrel population.
- In southern Scotland, co-ordinate, and support volunteer red squirrel networks to actively contribute to the protection of red squirrels in the priority areas for red squirrel conservation (PARCs) from replacement by grey squirrels.
- Monitoring: Implement volunteer-assisted feeder-box monitoring programme; continue to collect and verify squirrel sightings via the SSRS Hub; continue to carry out squirrelpox testing opportunistically across the landscape; gather key ecological monitoring information for analysis and interpretation.
- Maintain public awareness of the SSRS project and a healthy media profile.
- Produce a Legacy Plan detailing the post-transition phase process for grey squirrel control, eradication and monitoring and the process for handing over grey squirrel control and project coordination responsibilities to new/existing agencies.

The SSRS Programme Manager and Species Advocacy Officer are currently working with SSRS staff to work out what Scotland’s grey squirrel control strategy should look like post-transition phase and are in the process of identifying the most suitable agencies to take this work forward long-term. Each priority area has different aims depending on the nature of the grey squirrel incursion it is battling. Below is a grey squirrel control profile of each priority area:

Priority Area Profiles:

North East	The Central Lowlands	South Scotland
<p>The grey squirrel population in North East Scotland is isolated to a small pocket in and around Aberdeen City, the rest of the North East is a red-only zone. The project team in this area are working towards complete eradication. This is a major challenge, as greys in lower densities are much harder to find and it is difficult to know when eradication has been achieved. Specialist and novel techniques are being considered for tracking down the final few greys in an area, including the use of trained detection dogs.</p> <p>The North East team are now also managing grey squirrel control in the Mearns and East Angus with the aim of preventing immigration into Aberdeen city from the South.</p> <p>Aberdeen City Council have been a valuable partner to the project team to date and are committed to further supporting the SSRS effort to protect the red squirrel populations in the North East.</p>	<p>The project teams in Argyll, The Trossachs, Stirling and Tayside are working to defend the Highland Line in the Central Lowlands, which forms the frontier between the grey-only Central Belt and the red-only territory of the Scottish Highlands. This is no mean feat, as grey squirrel densities south of the Highland Line are high and it doesn’t take much of a gap in the defences to allow greys to begin to leak northwards.</p> <p>So far there have not been any cases of squirrelpox detected in red squirrels on the Highland Line. To make sure that this remains the case, the teams here are engaged in strategic squirrelpox sampling of red and grey squirrels. When the virus is detected in a grey squirrel in the area the teams deploy a rapid response monitoring and control protocol. Preventing the spread of squirrelpox north of the Highland Line is essential for the protection of to the UK’s core red squirrel population.</p>	<p>In the Scottish Borders and Dumfries and Galloway the project team is battling northerly and southerly grey incursion from the Central Belt and Northern England, respectively. As most of this area has established red and grey populations, the aim here is to suppress grey squirrel numbers enough to allow red squirrel populations to thrive, as opposed to eradication or exclusion.</p> <p>South Scotland’s project team are supported by a large volunteer network. This is a necessary support system given the relentless nature of grey squirrel incursion in this area. Employed coordination and control staff are also vital in this relationship as there are large parcels of private and agency land in the south that would be difficult to manage with volunteer trapping alone.</p>

Insights from project staff

Despite the differences in grey squirrel ecology among the priority areas, the experienced staff on the ground all agree on one thing: the need for employed, professional GSOs to be in post long-term. Effective grey squirrel control requires a consistent, targeted, and dynamic approach, which in turn requires it to be implemented by experienced people who can dedicate sufficient time to the job. It has also been expressed that GSO posts should be year-round, or at least extended seasonal (i.e. >8 months), contracts to maximise trapping and shooting efficacy and ensure coverage during the critical grey squirrel breeding seasons.

Another common theme in these discussions has been the system of awarding grants to landowners for grey squirrel control through the Forestry Grant Scheme (FGS). It seems that in many cases the administration of

the grant to estate owners results in large parcels of land adjacent to the GSOs' territory becoming problematic grey squirrel sources that they have no access to. In some areas GSOs are working with FGS landowners to ensure control is carried out effectively, but this is not always possible. FGS has the potential to be a useful tool in long-term grey control, but especially as SSRS involvement is reduced, it requires essential updates and changes to deliver on the promise of effective grey control by landowners.

Conclusions

The SSRS partnership project is in the process of reshaping itself to be best positioned to achieve sustained red squirrel conservation into the future. The ever-present threats of grey squirrel competition and squirrelpox will continue to negatively impact red squirrel populations post-transition phase, and a gap in resourcing of grey squirrel control operations is likely to undermine the work done by SSRS thus far. If we are to succeed in conserving the red squirrel for future generations, grey squirrel control must be embedded in organisations with suitably reliable funding streams and a commitment to invasive species control and native biodiversity conservation, such as statutory and publicly funded agencies, as part of a long-term strategy for red squirrel conservation.

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¹The Mammal Society (2022) *Red List for Britain's Mammals*. Available at: <https://www.mammal.org.uk/science-research/red-list/> (Accessed 15th August 2022)

²Saving Scotland's Red Squirrels (2022) *Scotland's Red Squirrels*. Available at: <https://scottishsquirrels.org.uk/scotlands-red-squirrels/> (Accessed 15th August 2022)

³UK Squirrel Accord (2022) Distribution. Available at: <https://squirrelaccord.uk/squirrels/distribution/> (Accessed 15th August 2022)

⁴UK Squirrel Accord (2022) Squirrel pox and diseases. Available at: <https://squirrelaccord.uk/squirrels/squirrel-pox-disease/> (Accessed 15th August 2022)

⁵Red Squirrels United (2022) Red Squirrels United. Available at: <https://www.redsquirrelsunited.org.uk/> (Accessed 15th August 2022)

⁶Scottish Wildlife Trust (2022) Red Squirrel. Available at: <https://scottishwildlifetrust.org.uk/species/red-squirrel/> (Accessed 15th August 2022)

⁷Porton, G., McHenry, E., Nuttall, M., Lambin, X. (2020) Evaluation of the progress of Saving Scotland's Red Squirrels towards its region specific management aims, accounting for imperfect detection. University of Aberdeen, Saving Scotland's Red Squirrels and People's Trust for Endangered Species.

ⁱ SSRS Partners: The Scottish Wildlife Trust; NatureScot; Forestry and Land Scotland; Scottish Forestry; Scottish Land and Estates; The Red Squirrel Survival Trust; RSPB Scotland; Heritage Lottery Fund; The European Agricultural Fund for Rural Development; Dumfries and Galloway Leader Programme; Loch Lomond and the Trossachs National Park Authority; Galloway & Southern Ayrshire UNESCO Biosphere
