



Guidance for woodland creation where red squirrels are present

September 2015

1. Introduction

Red squirrel populations have declined catastrophically in recent years and in most places have been completely replaced by the North American grey squirrel. The range of the red squirrel is now restricted to a small number of isolated populations, predominately in mid and north Wales. A similar decline has been seen in England and, to a lesser extent, Scotland.

2. Biology & Ecology

The red squirrel is the UK's only native squirrel and inhabits woodlands. Increasing fragmentation and degradation of woodlands and the loss of hedgerows may have led to a decline in red squirrel populations in the past (Gurnell, 1987). However, the planting of large areas with conifer trees has provided a habitat that favours red squirrels, although these habitats support lower densities of red squirrels than optimal habitats.

3. Type of habitat

Conservation of red squirrel populations depends upon maintaining sites free of grey squirrels and ensuring a suitable habitat for sustaining red squirrels.

On mainland sites, red squirrel conservation is focussed on conifer woodlands where grey squirrels are more easily excluded and where red squirrel populations are better able to persist. Habitat management in these sites is focussed on minimising suitability for grey squirrels, whilst maintaining the red squirrel population.

On Anglesey grey squirrels are being eradicated and so red squirrel habitats can be managed to maximise red squirrel suitability. In general, private forest owners and managers should consult their forest neighbours to produce complimentary forest plans which benefit red squirrels, and when managing grey squirrels. Forest owners and managers should seek advice and guidance from local red squirrel groups and experts at an early stage in forest planning and also prior to all high impact operations.

4. Woodland creation schemes in areas identified as important for red squirrel should include the following measures

The Welsh mainland

The Glastir Woodland Creation Categories 'Native Woodland – Carbon' and 'Native Woodland – Biodiversity' are not appropriate within the identified core red squirrel areas on the mainland.

For Enhanced Mixed Woodland, the following measures apply:

- Avoid planting large seeded broadleaved tree species such as oak, chestnut, beech, ash sycamore or hazel where these are not already present.
- Design the planting scheme to avoid linking woodlands with grey squirrel to woodland with red squirrels.
- Adjacent to existing red squirrel habitat provide complimentary planting of 15% Pine (Scot's or Lodgepole) and 15% Norway Spruce in a matrix of small seeded broadleaves and Sitka Spruce.

The Conservation Plan for Red Squirrels in Wales prepared by the Wales Squirrel Forum <https://naturalresources.wales/media/2855/wales-red-squirrel-conservation-plan.pdf> gives further advice on managing woodlands for red squirrel. Key points are:

- Areas which contain Norway spruce and all pine species provide important food sources for red squirrels and should be managed as key areas for red squirrels by minimum intervention or according to continuous cover forestry principles.
- Fragmentation of the forest and isolation of key areas should be avoided and arboreal connectivity maintained between key areas through the use of continuous cover, long-term retentions, natural reserves and a series of connected restocking sites of various ages.
- On stable sites continuous cover silviculture (CCF) should be used to maximise stand diversity (avoid using uniform systems).
- Ideally 50-60% of the forest should contain conifers of seed producing age. In a commercial forest managed using clear-felling, a structure should be developed so that approximately one third of trees are below seed bearing age, one third are 'middle aged' and one third are older.

Anglesey

All woodland categories are appropriate for consideration on Anglesey.

- Preferred species for planting are oak, beech, sweet chestnut, hazel, lime, rowan, and pine (e.g. Scots, Lodgepole, Maritime, Stone and Mountain).
- Continuous cover systems should be used to emphasise spatial diversity within the standard to reduce canopy fragmentation, with an emphasis upon small scale coupe felling and restocking rather than a uniform approach to thinning.
- Early thinning can be relatively heavy, but as the stand develops the emphasis should be on lighter and less frequent thinning. Heavy late thinning should be avoided, as fragmented canopy is unsympathetic with the requirements of the red squirrel.

Further Reading

Bryce, J., et al. (2005) Habitat use by red and grey squirrels: Results of two recent studies and implications for management. Information Note 076. Forestry Commission, Edinburgh.

Gurnell, J. (1987) The natural history of squirrels. Christopher Helm, London.

Gurnell J. et al. (2007) Developing a monitoring strategy for red squirrels (*Sciurus vulgaris*) across the UK. Final report for JNCC and PTES. JNCC (1996). UK strategy for red squirrel conservation.

Halliwell E.C. et al (2015) Striving for success: an evaluation of local action to conserve red squirrels (*Sciurus vulgaris*) in Wales p172-192 in Shuttleworth CM, Lurz PWW, Hayward M (eds) Red Squirrels: Ecology, Conservation & Management in Europe. European Squirrel Initiative, Woodbridge, Suffolk

Wales Squirrel Forum (2009) Conservation for red squirrels in Wales

<https://naturalresources.wales/media/2855/wales-red-squirrel-conservation-plan.pdf>

Dr. Liz Halliwell, Mammal Ecologist Woodland and Farmland Mammals, Terrestrial Ecology Group, Natural Resources Wales