

## Red Squirrel (*Sciurus vulgaris*)



*Red squirrel*

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The native red squirrel has been replaced over much of England and Wales during the last 100 years by the grey squirrel that was introduced to this country from North America in 1876 <sup>(1)</sup>.

Grey squirrels appear to out-compete the native species in lowland deciduous woodland and have been known to displace the red squirrels completely within 7 years of arrival in a wood <sup>(2)</sup>. Loss and fragmentation of woodland as well as disease have also been factors in the red squirrel's decline.

In the presence of introduced grey squirrels, research indicates that red squirrels are most likely to survive in large (over 200 ha) blocks of coniferous woodland rather than in broad-leaved woodland.

This is because the red squirrel is better adapted than the grey to feeding on small tree seeds (such as found in pine cones). Red squirrels will also eat nuts, berries, mushrooms, insects,

birds' eggs and young birds. It is the autumn seed harvest, however, that is vital in determining survival into the spring and subsequent breeding success. Five out of six young squirrels die in their first year from causes including starvation, predation and road deaths<sup>(3)</sup>.

**Main Habitat(s):** Woodland, urban gardens and parks, hedgerows.

### **National status**

Once ubiquitous in the UK, the red squirrel is now absent from most of southern and central England. Populations remain in Merseyside, West Lancashire, Cumbria, Northumberland, parts of Scotland, Northern Ireland, North Wales, Thetford Forest in Norfolk, the Isle of Wight and three small islands off the Dorset coast<sup>(2)</sup>.

Red squirrels are protected under Schedules 5 and 6 of The Wildlife & Countryside Act 1981 (as amended) and Article III of the Bern Convention. The red squirrel is the subject of a Species Action Plan in the UK BAP.

### **Regional status**

The North West is a stronghold for the species but red squirrels are declining in many areas. Cumbria still retains red squirrels throughout most of its area but greys are invading from both south and north. The population is stable and self-sustaining at the present in the pinewood plantations on the Sefton Coast.

### **Local status**

Red squirrels are now absent from most of Lancashire. They remain in West Lancashire, but are highly endangered since grey squirrels are also present.

The areas around Ormskirk & Aughton, Burscough, Rufford, Scarisbrick and Halsall retain small red squirrel populations.

### **Current factors affecting the species**

As outlined above, the main causes of decline have been due to pressure from grey squirrels. However, other factors have tended to reduce populations of red squirrels and make them more vulnerable to replacement by greys.

Parapox is a disease that afflicts red squirrels to a far greater degree than it does grey squirrels. The virus has depleted populations of red squirrels and even caused local extinctions but it rarely affects grey squirrels<sup>1</sup>. The origins of the virus are obscure, but it may have been introduced with the grey squirrels from North America. If this is the case, it would not be surprising if grey squirrels have acquired a degree of natural immunity to the disease.

Destruction of hedgerows, loss of woodlands and changes in management of woodland habitat make it more difficult today than in the past for red squirrels to colonise sites. Grey squirrels, being less arboreal than red squirrels, are better able to move through treeless landscapes.

Red squirrels live at low densities (less than two per hectare on average compared with up to nine grey squirrels)<sup>4</sup>. When the 'surplus' population disperse they are prone to being killed on roads. The extent of road mortality in Lancashire is however, unknown.

### **Current Action / Mechanisms**

A UK Species Action Plan and UK Strategy have been produced and their implementation is co-ordinated by the UK Red Squirrel Group.

NPI Red Alert North West provides conservation advice and maintains a database about red squirrels in the region. It has local groups which co-ordinate action. Based in Cumbria, key partners in the project include the Wildlife Trusts, English Nature, National Trust and Forestry Commission. The public is encouraged to report squirrel sightings to be included in the red squirrel database.

NPI Red Alert's Regional Strategy <sup>(5)</sup> outlines actions required throughout the North West from 1999-2003. This proposes that the Sefton Coast should be established as a "Red Squirrel Refuge Site" where efforts should be focused to protect the self-sustaining population in the pinewoods. Parts of West Lancashire form a provisional buffer zone for the refuge and resources should be targeted here to prevent grey squirrel incursion to the coast.

Advice on woodland management for red squirrels can be obtained from a guide written by NPI Red Alert - "Woodlands for Red Squirrels" <sup>(6)</sup>. Advice is also available from the organisation grey squirrel control.

The Wildlife Trust has been monitoring squirrels at its Mere Sands Wood reserve since 1995 <sup>(8)</sup>. A number of studies have taken place here including research into the use of supplementary feeders <sup>(8)</sup>, interactions between reds and greys <sup>(9)</sup> and control of and disease carrying in grey squirrels <sup>(10)</sup>.

There is an ongoing publicity campaign to raise awareness of red squirrel conservation. This includes NPI's annual National Red Squirrel Week.

Red squirrels are considered in the designation of Biological Heritage Sites (Guideline Ma1a) <sup>(7)</sup>.

### Objectives, targets and proposed actions for red squirrel in Lancashire

<b>Broad Objective:</b>	<b>A. Maintain current red squirrel distribution in West Lancashire</b>			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Monitor red and grey squirrel populations through regular surveys and public records.	1. Regularly monitor red and grey squirrels at selected sites using standardised techniques (e.g. hair tubes, time/area observation counts). (High)	NPIRA, WT	O	RM
	2. Collate public sightings on a centralised database and produce annual distribution maps. (High)	NPIRA	O	RM
2. Safeguard important sites for red squirrels in West Lancashire	1. Consider designation of all regular breeding and feeding sites as Biological Heritage Sites. (Medium)	W LDC, BHS P/ship, LCC, WT	M	P
2. Encourage	1. Liaise with woodland	NPIRA, EC	O	A, LM

woodland management that favours red squirrels in areas where populations persist.	owners and managers to promote measures that would benefit red squirrels. (Medium)	WLDC		
	2. Ensure that red squirrel requirements are considered in dealing with applications for Woodland Grant Scheme or felling licenses and that (where appropriate) mitigation measures are put into place. (Medium)	FC	O	LM
	3. Ensure that targets for red squirrels are included in appropriate forestry strategies. (Medium)	FC	O	P
<b>Broad Objective:</b>	<b>B. By 2002, establish mechanisms to maintain an effective buffer zone that protects self-sustaining red squirrel populations on the Sefton Coast.</b>			
Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Identify those parts of West Lancashire to be included within a buffer zone for the Sefton refuge.	1. By end of 2001, map the desired buffer zone and identify land ownerships in the zone. (High)	NPIRA, BHS P/ship, W Lancs DC, PCs	S	RM
	2. Approach landowners for help in establishing the buffer zone. (High)	NPIRA, BHS P/ship, W Lancs DC, PCs	M	A
2. Develop and maintain grey squirrel control programme in the buffer zone for the Sefton refuge.	1. Promote and implement humane grey squirrel control in the buffer zone. (High)	NPIRA, FC	O	LM
	2. Monitor grey squirrel control effort. (High)	NPIRA, FC	O	RM
3. Seek to discourage the planting of large-seeded broadleaved tree species in the refuge buffer zone where it might encourage grey squirrel colonisation.	1. By the end of 2001, draw up guidelines for tree wardens and woodland owners and managers on appropriate species and planting schemes. (High)	NPIRA, FC, LCC, BHS P/ship	S	PR
	2. Distribute guidelines to wardens and land managers. (High)	NPIRA, FC, LCC, BHSP	M	A
<b>Broad Objective:</b>	<b>C. Raise awareness of the plight of the red squirrel</b>			

Operational Objective	Action Required (Priority)	Partners	Time-scale	Type
1. Raise awareness of red squirrel conservation through an ongoing public relations campaign.	1. Encourage public participation during Annual National Red Squirrel Week. (Medium)	NPIRA	O	PR
	2. Produce press releases (at least one per year) based upon data collected in A.1.1 and A.1.2 to highlight red squirrel conservation in West Lancashire/ North Merseyside. (Medium)	NPIRA	O	PR
	3. Raise awareness in schools through promotion of NPI Red Alert Teachers' Pack. (Low)	NPIRA	O	PR

#### Related Action Plans:

- Broadleaved and mixed woodland HAP

#### References & additional reading:

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5. NPI Red Alert (Date?) Red Alert North west England Regional Strategy.
6. NPI Red Alert (Date?) Woodlands for Red Squirrels. Advisory leaflet.
7. Lancashire County Council (1998) Biological Heritage Sites - Guidelines for Site Selection. Lancashire County Council.
8. Tyson, L. J. (1997) A study into the effectiveness of various red squirrel only feeding hoppers and associated feeding behaviour. BSc Thesis Edge Hill University College, Ormskirk.
9. Lello, J. & Shuttleworth, C. M. (1998) A study of inter-specific behaviour patterns in red and grey squirrels at Mere Sands Wood, Rufford. Preliminary Report. Lancashire Wildlife Trust.

10. Lello, J. (1999) Grey Squirrel (*Sciurus caroliensis*) control and Red Squirrel (*Sciurus vulgaris*) monitoring at Mere Sands Wood, Rufford, Lancashire. 1998 – 1999. Final Report. Lancashire Wildlife Trust

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