



ALL-IRELAND SPECIES ACTION PLAN FOR THE RED SQUIRREL (*SCIURUS VULGARIS*)

Introduction

A draft all-Ireland Species Action Plan (SAP) for the Red Squirrel *Sciurus vulgaris* has been prepared by Environment and Heritage Service (EHS) and National Parks & Wildlife Service (NPWS)¹. This is one of a number of Northern Ireland Action Plans or all-Ireland Action Plans which have been prepared for priority habitats or individual species under the Northern Ireland Biodiversity Strategy. A UK Species Action Plan for the Red Squirrel was published in 1995² and following that an Implementation Plan was produced by DOE(NI)³.

This briefing paper describes the context of the Red Squirrel Action Plan and presents a review of the measures contained therein.

Status and distribution

The Red Squirrel is an exclusively woodland species found in a wide range of woodland types across much of Ireland. A contraction in range since the middle of the 20th century has resulted in a fragmented population estimated currently at around 40,000 individuals⁴.

The decline and contraction in range has coincided with an increase and expansion of its conspecific the Grey Squirrel *Sciurus carolinensis*. This species is native to eastern North America and was introduced from there to England and Wales from

¹ EHS/NPWS (2007) All-Ireland Species Action Plan: Red Squirrel *Sciurus vulgaris* Draft for Consultation, November 2007. Available at:
<http://www.ehsni.gov.uk/redsquirrelsapnov07public-2.pdf>

² Biodiversity: The UK Steering Group Report - Volume II: Action Plans (December 1995, Tranche 1, Vol 2, p91); Available at: <http://www.ukbap.org.uk/UKPlans.aspx?ID=565#8>

³ McGhie J & Milburne J (2000) UK Strategy for Red Squirrel Conservation: Implementation in Northern Ireland 1999-2004. http://www.ehsni.gov.uk/uk_stgy_red_squirrel_conservati.pdf

⁴ O'Teangana D. *et al.* (2000) Distribution and status of the Red Squirrel *Sciurus vulgaris* and Grey Squirrel *Sciurus carolinensis* in Ireland. *Mammal Review* 30: 45-56.

1876 to 1929, to Scotland from Canada between 1892 and 1920⁵ and thereafter into Ireland from England in 1911 at Castle Forbes, Co. Longford⁶.

Prior to the first comprehensive survey in Ireland between 1994 and 1996⁷ the previous report by Ni Lamhna (1979) suggested that the Red Squirrel was widespread, although localised, in the north and west. The Grey Squirrel in contrast was restricted at that time to north Leinster and south Ulster, with sparse records from north Munster and just one from Connacht⁸. Two limited surveys in Northern Ireland concluded that the Grey Squirrel had expanded its range there and encompassed every county with the exception of Antrim; they also concluded that the Red Squirrel's range had remained similar to that found by Ni Lamhna's (1979).

In Northern Ireland the Grey Squirrel is now more widespread than the Red Squirrel, having replaced Red Squirrels in woodlands in all six counties⁹, and apparently overcoming the natural barriers of Lough Erne, Lough Neagh and the River Bann and penetrating into previously unoccupied Co. Antrim and north through Co. Londonderry¹⁰.

In the Republic of Ireland Grey Squirrels are now present in 16 of the 26 counties, all of which are to the east of the River Shannon.

Factors affecting the population

The continued contraction in range and decline of Red Squirrels is a cause for concern. The principal factors considered to be important in conservation of the species include:

- Competition from Grey Squirrels – wider dietary range, larger body size, wider range of habitats utilised and higher resistance to Squirrel Pox appear to be explanatory factors underlying the fact that Grey Squirrels normally displace Red Squirrels when both species occur together;
- Woodland availability and species composition – the relatively low levels of forestry cover are a potential limit to range expansion and population increase; the increases in broad-leaved species in new forestry (the Forest Service in the Republic of Ireland requires woodland owners to plant 30%+ broadleaved species), especially where large-seeded species are planted, is likely to offer a competitive advantage to Grey Squirrels;

⁵ Gurnell J. (1991) The Grey Squirrel. In: *The Handbook of British Mammals* (Ed. GB Corbet & S Harris), pp. 186-190. Blackwell, Oxford.

⁶ Watt HB. (1923) The American Grey Squirrel in Ireland. *Irish Naturalist* 32: 95-353.

⁷ O'Teangana D. *et al.* (2000) Distribution and status of the Red Squirrel *Sciurus vulgaris* and Grey Squirrel *Sciurus carolinensis* in Ireland. *Mammal Review* 30: 45-56.

⁸ Ni Lamhna E. (1979) Provisional distribution Atlas of Amphibians, Reptiles and Mammals in Ireland, 2nd ed., An Foras Forbatha, Dublin.

⁹ Huxley L. (2003) The Grey Squirrel Review. Profile of an invasive alien species. Grey Squirrel (*Sciurus carolinensis*). ESI, Dorset.

¹⁰ O'Neill K. & Montgomery WI. (2003) Recent changes in the distribution of red squirrels in Northern Ireland. Report to Environment & Heritage Service, Queen's University Belfast.

- Forestry practise – the availability of conifer-dominant forest of 25-35 years old (depending on species composition) is a limiting factor as this is the preferred age class for Red Squirrels;
- Grey Squirrel Control – The Forestry Commission¹¹ suggest that control needs to be targeted, intensive, timely and long-term;
- Translocation – Following IUCN guidelines, the results of pilot projects in Mayo and Galway have yet to be published;
- Supplementary Feeding – this approach may be effective at local scales through increasing breeding success and survival (positively correlated with food availability)
- Disturbance – the potential negative impacts of high-impact recreational disturbance has received little attention;
- Woodland restoration – the restoration of conifer-dominated to native woodland has the potential to conflict with the conservation of the Red Squirrel (potential for conflicts with other habitat/species action plans)

Action plan

In addition to identifying current on-going actions towards conservation of the Red Squirrel in Ireland, the draft Species Action identifies a range of planned actions, timescales, and stakeholder groups with a responsibility for implementation.

The specified targets for the Action Plan are:

- (1) Restrict the contraction in range of the Red Squirrel to a minimum;
- (2) Extend the range of the Red Squirrel to areas of favourable habitat not currently populated by either squirrel species; and
- (3) Increase the density of Red Squirrel populations in Red Squirrel Areas (RSPAs)

Review of Species Action Plan process and measures

The framework for the development of this action plan appears to be sound, with clearly defined objectives, and targets which are SMART (Specific, Measurable, Achievable, Realistic and Time-Bound). This draft plan is the fifth all-Ireland Species Action Plan and the fact that the plan has been developed at the biogeographic scale of Ireland will maximise the probability of Action Plan objectives being met. Given the continued range expansion and increase in the non-native Grey Squirrel, and the contraction of the range of the native Red Squirrel to the 26 counties, conservation of this species in Northern Ireland and maintenance of the genetic diversity of the population will depend on a robust all-island approach.

Attainment of Action Plan targets is likely to be best achieved through early establishment of the Red Squirrel Action Plan Steering Implementation Group (action

¹¹ Forestry Commission (2006) Grey Squirrel's and England's woodlands: Policy and Action. Forestry Commission, England.

5.6.1) and frequent review of progress towards implementation of measures within the plan.

Whilst a combination of approaches as specified in the plan are most likely to meet Action Plan objectives, the development of careful management of forestry practise and selective planting of different tree species may have more beneficial effects on Red Squirrel conservation than any attempt to control Grey Squirrel populations¹². Such management should be underpinned by the necessary research in Ireland and elsewhere and may including development of studies looking at *inter alia* feeding ecology, red/grey interactions, and habitat manipulation (in addition to that specified in Section 5.6).

An additional area of research which may be worthy of consideration in the context of the all-Ireland population is the development of a landscape scale spatially-explicit population model (integrating population dynamics and GIS) which would underpin implementation of aspects of the plan.

December 2007

¹² O'Teangana D, Reilly S, Montgomery WI & Rochford J. (2000) Distribution and status of the Red Squirrel and Grey Squirrel in Ireland. *Mammal review* 30: 45-56.