

THE GREY SQUIRREL REVIEW

**Profile of an invasive alien species
Grey squirrel (*Sciurus carolinensis*)**

Louise Huxley



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FOREWARD

The menace of grey squirrels is worsening. Although only introduced in Victorian times, they have spread throughout much of Britain displacing the native red squirrel and causing often irreparable damage to broadleaved trees like beech, oak and sycamore.

In this book Louise Huxley has assembled all that is known about grey squirrels and attempted dispassionately to evaluate the threat that they represent. She concludes that they threaten the future of successfully growing broadleaved woodlands for anything other than amenity. Grey squirrels may kill trees, degrade timber quality, raid birds' nests and harm other wildlife. And, they have few predators to control their numbers. In summary, they have found, like the coypu did in the Norfolk Broads, a habitat so congenial and so available that they are over-running it. The damage they cause is making many people now wish that the grey squirrel could share, too, for the sake of our woodlands, the coypu's fate. If elimination is unattainable, the grey squirrel must at least be controlled effectively where it matters so that its harm can be curtailed.

I write these remarks as an owner of a small broadleaved woodland and as a scientist. It is to the latter community of forest scientists and wildlife ecologists that my comments here are first addressed since they hold the key to successful control. The success of warfarin-based control since the mid 1970s shows what sound research can accomplish, and the promise of immuno-contraception demonstrates that new approaches are feasible albeit if not adequately deliverable at the moment. But both these control strategies are or are about to be discontinued, and what is offered in their place? Nothing, only trapping and the daily expense that requires.

This matter of expense has another side. This book attempts for the first time to estimate what grey squirrel damage is really costing. From whatever way one looks at it, the figure comes to several million pounds per year! The worry is not only the scale but how it detracts from all that the Forestry Commission and other public bodies are trying to achieve through funding woodland initiatives which themselves only amount to around £30-40 million per year. Added to this is that much of the grant aid supports new woodlands of native broadleaved species. This is greatly welcomed by most people, but they are the very woods the success of which grey squirrels will undo.

The appeal for renewed effort to control this pest is heightened by the worrying spread of grey squirrels in northern Italy and the inevitability of further spread into the great beech and oak forests of France, Germany and elsewhere in Europe. There is a political imperative to address the problem. Mrs Huxley's book presents the facts, the onus is now on the state, private sector and scientific community to tackle this menace to ensure the health and well-being of the woodlands that grace our countryside.

Professor Julian Evans OBE

INTRODUCTION

The protection of woodland in Europe, and especially in Britain, against the ravages of the grey squirrel is far more serious than most will appreciate. The introduced alien American grey squirrel (*Sciurus carolinensis*) is fast assuming the role and occupying the habitat of the native, red squirrel (*Sciurus vulgaris* L.) Europe wide. This review seeks to dovetail all material that has been produced on the species and provide a comprehensive study of its ecological profile, its impact on the red squirrel, and the causal mechanisms that may result in widespread devastation of European woodlands.

Since the North American grey squirrel was introduced to Britain in the late 19th century it has become a serious pest, first to broadleaved woodlands, then coniferous forests, orchards, garden crops, roofs, electric cables, birds eggs and nestlings, and most recently woodland conservation, biodiversity and social and environmental benefits. Over 40 years ago the Forestry Commission recognised the grey squirrel as a woodland pest, but today it considers that people enjoy the grey squirrel as a regular and approachable resident of our woodlands, parks and gardens. This paper sets out to illustrate the shortcomings of that approach, identifying the devastation that has both occurred and is anticipated in European woodlands to flora and fauna alike.

Grey squirrel damage to trees became apparent quite soon after the species establishment in British woodlands it was 50 years before a connection was made between the expansion of the grey squirrel and the diminishing red squirrel numbers. By 1955 red squirrels were absent from large parts of southern and central England, as well as Yorkshire and parts of Wales. This decline is now almost complete to the point of extinction in Britain and Ireland and there are now threats to red squirrels in continental Europe as greys spread out from their place of introduction near Turin in Italy. Conservation of the native red squirrel is of paramount importance, and the threat to their survival posed by the grey squirrel through competition for food and potential infection from the Parapoxvirus is overwhelming their fragile existence. In order to survive in an alien environment, a non-native species is, by definition, invasive. So the grey squirrel will multiply with ease in this soft European environment away from the harsh realities of its native north east American predators and climate, taking over the red squirrel's habitat and consuming far more successfully those food resources that are available.

The potential loss to biodiversity is examined. No longer is it sensible to plant thin barked broadleaved species despite continued encouragement by the Forestry Commission to do so particularly in the community forest areas of Britain. Most conifers are now also at risk, as the breeding success of the alien grey squirrel increases their density resulting in expansion into all woodland.

This will impact on the continuation of the indigenous and ecological landscape and high forest not just in Britain, but across Europe as well.

There are five stages to the scale of damage, the earliest stages, or trials, are frequently overlooked but provide an important indicator to the forest manager where and when control must be applied. The costs of control can be calculated, but the costs of damage need clearer identification and quantification. A survey is needed to provide an understandable measure of damage to trees, biodiversity, and the societal benefits of forestry. Then the extent of existing damage should be fully assessed.

That grey squirrel damage can commonly touch every person's everyday lives is itself a measure that the control and removal of this pest needs to be addressed. If the fragile red squirrel and accompanying traditional broadleaved woodlands in this temperate environment are to survive and thrive, eradication of the grey squirrel may ultimately be the only option.

This review provides a summary of research that has been done and does not necessarily indicate the author's views, but the views of those who did the research. It is designed to provoke thought and discussion, and should not be taken as conclusive.