



## Advice Note

### Squirrelpox virus – general information

May 2006

#### What is Squirrelpox virus?

Squirrelpox is a fatal disease currently affecting red squirrel populations in some areas. Epidemics of disease caused by an unidentified agent have been described in Britain since early last century. In the 1970's Ian Keymer investigated causes of diseased red squirrels in East Anglia and as a result of his work a pox virus was identified in eyelid lesions (Scott, Keymer & Labram, 1981). It is now certain that this pox virus is a significant factor in the decline of the red squirrel population in the UK.

#### Where has it been found?

In the UK confirmed cases of squirrelpox in red squirrels have been reported from East Anglia, Cumbria, Lancashire, Northumberland and Durham

#### Where did it come from?

The origin of squirrelpox virus in red squirrels is the introduced American grey squirrel. Research shows that the antibodies to the virus are very common in many grey squirrel populations in England & Wales (although not in Scotland until recently – 13 grey squirrels have tested positive for antibodies since June 2005) but only one case of disease has been found in a grey squirrel. Red squirrels are not found to carry the antibodies unless they are already succumbing to squirrelpox disease. It is therefore thought that grey squirrels act as a reservoir host for the virus. All wild-living red squirrels observed to be affected by squirrelpox virus appear to die within 2 weeks of becoming infected.

#### How is it transferred?

As yet we do not know the route of transmission. Possibilities include transfer via saliva or scent-marking secretions at feeding or scent-marking sites, or perhaps by ectoparasites (fleas, lice, ticks and mites) which may transfer from animal to animal in the dreys. The virus is unlikely to spread through the air if it behaves like other pox viruses. Further research in this area is needed.

#### What does it look like?

Visible symptoms of squirrels with squirrelpox include wet, discharging lesions or scabs around the eyes, ears, mouth, feet and genitalia: squirrels generally become increasingly lethargic as the disease progresses, chiefly due to inability to feed properly.

#### What is being done?

Further studies will investigate how the virus is transmitted between squirrels, the origins of the virus, presence of antibodies in the blood and its impact on red squirrel populations.

To further aid in identifying and possibly preventing any more outbreaks of the poxvirus in red squirrel populations, grey squirrels are being tested to see if they are carriers of the virus in South Scotland and North England. Where the virus is found the trapping effort is increased to prevent the spread.

#### What should I do if I think I see a diseased squirrel?

If you suspect that you have seen a case of squirrel poxvirus infection please seek immediate advice from your nearest Red Squirrel Conservation Officer:

##### Scotland

Borders - 01750 23446,  
Dumfries & Galloway – 01387 711804  
Elsewhere in Scotland – either of the above

##### England

NW - 01539 816300,  
NE - 0191 5843112,  
Isle of Wight - 01983 823891  
**Northern Ireland** - 028 90 520841  
**Wales** - 01248 385500



If you find a recently dead red squirrel with lesions please contact

**Scotland:** Anna Meredith at Royal (Dick) School of Veterinary Studies, University of Edinburgh.  
email: [annam@miscorp.ed.ac.uk](mailto:annam@miscorp.ed.ac.uk) Tel: 0131 650 6247

**England & Wales:** Tony Sainsbury at the Institute of Zoology  
email: [t.sainsbury@ucl.ac.uk](mailto:t.sainsbury@ucl.ac.uk)

Alternatively, to help us identify potential areas of a squirrelpox epidemic, you can send a recently dead grey squirrel or a sample of its blood to be tested. Please follow the guidelines below.

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Properly packing the squirrel is extremely important. The Post Office has stated that you **must** do the following:

1. You should wrap the squirrel in absorbent paper towels
2. Place it inside at least two well-sealed plastic bags.
3. Place these within a rigid box to prevent squashing (a modified tissue box will do).
4. Placed inside a rigid parcel or 'Jiffy' bag.
5. Write 'Pathological Sample' and your name and address clearly on the outside.
6. Include a piece of paper with the *date* and *location* and *circumstances* under which it was found, together with your own name and address.

Send 1st Class and ensure it arrives on a weekday  
**- a dead squirrel must not sit in the letter box over the weekend.** Send to:

Dr Colin McInnes or Dr Peter Nettleton at  
Moredun Research Institute  
Pentlands Science Park,  
Bush Loan, Penicuik,  
EH26 0PZ

Tel: 0131 445 5111

or

Dr Tony Sainsbury  
Institute of Zoology  
Royal Zoological Society of London  
Regents Park  
London  
NW1 4RY

If you need to keep the animal for a day or two in order to avoid the weekend, please place it in a fridge - a freezer is not ideal but can be used as a last resort until it is ready for postage.

For procedures for taking and sending blood samples, please speak to your nearest Red Squirrel Conservation Officer.

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Red squirrel conservation bodies needs to hear about any pox outbreaks, or identify areas at risk of an outbreak. If you do suspect a case then please notify your nearest Red Squirrel Conservation Officer as soon as possible.

#### References:

Scott, A.C. Keymer, I.F. & Lebram, J. (1981) Parapox infection of the red squirrel (*Sciurus vulgaris*) Veterinary Record, 109, 202.

(Please note that much of the past literature referred to the squirrel 'Parapoxvirus'. Subsequent work has shown that the virus is not one of the parapox group, but on its own in a new group called Squirrelpox virus.)

*Scottish Squirrel Survey*  
*May 2006*

(Based on the leaflet  
produced by  
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