



Advice Note

Squirrel Poxvirus – general information

May 2004

What is Squirrel poxvirus?

Squirrel poxvirus is a potentially 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 this 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 currently felt that pox virus may be 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 poxvirus in red squirrels have been reported from East Anglia, Cumbria, Lancashire, Northumberland and Durham

Where did it come from?

The origin of squirrel poxvirus in red squirrels is unknown. Research shows that the antibodies to the virus are common in some grey squirrel populations but only one case of disease has been found in a grey squirrel, whilst very few red squirrels carry the antibodies to the virus. It is therefore possible that grey squirrels act as a reservoir host (carrier) for the virus whilst the majority of red squirrels affected with poxvirus appear to die within a week of becoming infected.

How is it transferred?

As yet we do not know the route of transmission. Possibilities include being passed by ectoparasites, fleas, lice, ticks and mites, which may transfer from animal to animal in the dreys. The virus may spread through the air or via saliva which is then transferred at feeders (please see advice note on supplementary feeding, and how to reduce the risk of poxvirus spread), or squirrels picking it up when they investigate scent marking. Further research in this area is needed.

What does it look like?

Visible symptoms of squirrels with poxvirus include wet, discharging lesions or scabs around the eyes, mouth, feet and genitalia: squirrels generally become increasingly lethargic as the disease progresses.

What is being done?

Further studies will investigate whether, and if so how, the virus is transmitted between grey and red 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:

England - NW 01539 816300, NE 0191 5843112, Isle of Wight 01983 823891

Northern Ireland - 028 90 520841

Scotland – Borders 01750 23446, Dumfries &

Galloway – 01387 860442

Wales - 01248 385500

If you find a recently dead red squirrel with lesions please contact Tony Sainsbury at the Institute of Zoology email: t.sainsbury@ucl.ac.uk



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Alternatively, to help us identify potential areas of a poxvirus epidemic, you can send a recently dead red squirrel to be tested. Please follow the guidelines over leaf.

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.

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 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 cool place, a fridge is ideal - a freezer can be used as a last resort until it is ready for postage.

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 contact as soon as possible.

If you have any queries about the information of this advice note please contact:

Countryside Council for Wales (CCW)
01248 385500
Environment & Heritage Service (EHS)
028 9052 0841
English Nature (EN)
01733 455000
Scottish Natural Heritage (SNH)
0131 554 9797

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 refers to the squirrel 'Parapoxvirus' which has since been shown to be inaccurate by Thomas et al. (2003)