

P-06-1332: Fund vaccine research to protect red squirrels from deadly Squirrelpox virus.

Y Pwyllgor Deisebau | 15 Mai 2023
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Reference: SR23/5702-6

Petition Number: P-06-1332

Petition title: Fund vaccine research to protect red squirrels from deadly Squirrelpox virus.

Text of petition: Squirrelpox virus is carried and spread by grey squirrels. It doesn't harm them. When red squirrels are infected they develop open extensive skin lesions and die a painful death within 2 weeks

In North Wales, 70-80% of the Gwynedd red population was lost in a 2020/21 outbreak <https://theconversation.com/squirrelpox-outbreak-detected-in-north-wales-without-a-vaccine-the-disease-will-keep-decimating-red-squirrels-196811>

Promising research by Moredun Institute into a vaccine ran out of funds

The Wales Red Squirrel Conservation Plan (Page 9) highlights that most Welsh red squirrels are in forests inhabited by grey squirrels. Pox virus is thus a major threat in Wales. <https://cdn.naturalresources.wales/media/691092/eng-red-squirrel-conservation-plan-for-wales.pdf>

In Bangor, there have been repeated Squirrelpox virus outbreaks in the period 2017-2022. Dead red squirrels have been found in woodland close to the Britannia Bridge and Telford's Suspension Bridge. It is only a matter of time before the infection is spread across the Menai Strait and onto Anglesey. The island contains the largest red squirrel population in Wales.



The infection causes graphic symptoms:

<http://www.britishredsquirrel.org/red-squirrels/disease/>

We need Welsh Government to commit to funding research such as the stalled vaccine research of Moredun/Wildlife Ark Trust:

<https://www.dailyrecord.co.uk/news/local-news/red-squirrel-vaccine-under-threat-2540293>

1. Background

The threat to red squirrels from squirrelpox

Red squirrels were once widespread across Wales. However UK populations have suffered significant declines following the release and spread of the North American grey squirrel in the 19th century. This is due to the spread of disease (predominantly the squirrelpox virus) and competition for resources.

According to the Wildlife Trusts, in about 150 years, red squirrels have declined from around 3.5 million to 140,000 across the UK. In 2020 the Mammal Society released a Red List for British Mammals, highlighting species most at risk. The red squirrel is classified as 'Endangered' and is one of the 19 species considered at risk of extinction in Britain.

The three focal populations of red squirrel in Wales are on Anglesey, in the Clocaenog Forest in north Wales, and Clywedog in mid Wales.

The squirrelpox virus is carried by the invasive, non-native grey squirrels without impacting their health (greys have developed immunity to the disease having been exposed to the virus for centuries), but it is fatal to red squirrels. The first squirrelpox case was detected in a red squirrel in Norfolk in 1980, but the virus may have been present, but undetected, in the population for a number of years. By 2018, 525 cases had been detected across the UK.

The Wildlife Trusts report that recent studies have shown up to 100% of grey squirrels in an area can be carrying the virus. Population decline in red squirrels is estimated to be 17 to 25 times higher in regions where the virus is present in greys (compared to competition from greys alone). Study of a population in northern

Gwynedd showed that in 2020/21, the disease caused a loss of 70%-80% of its red squirrel population.

Other threats to red squirrels include predation by domestic cats and dogs, roadkill and habitat loss and fragmentation. There is increasing awareness of the emergence of other disease risks. In particular, adenovirus has been recorded in dead red squirrels at locations across the UK.

Actions to tackle squirrelpox

Squirrelpox vaccine

A few years ago the Moredun Institute began work on a vaccine for squirrelpox. The Wildlife Ark Trust charity provided funding for the squirrelpox vaccine development programme. Insufficient funding meant this research stopped.

Challenges in developing the vaccine included identifying protective forms of the virus for vaccine development and finding ways of delivering the vaccine. The ideal delivery mechanism is orally, so that the vaccine can be incorporated into food sources. The Moredun Institute said although oral vaccines currently exist for some wildlife species, for example rabies vaccines for foxes in the EU, vaccines for oral delivery pose biological and logistical challenges. Dr Colin McInnes, who led the original research programme, said there was "still quite a bit of work to be done".

Dr Craig Shuttleworth, of the Red Squirrel Trust Wales, said "Of all the current conservation initiatives, I consider the squirrelpox vaccine research the one most likely to prove to be the saviour of the red squirrels." Dr Shuttleworth estimated tourists coming to see the red squirrels on Anglesey is currently worth about £1m a year and added "What about the wellbeing value?"

The 2018 Red Squirrel Conservation Plan for Wales, prepared by the Wales Squirrel Forum (made up of statutory, non-statutory organisations and local squirrel groups) provides an update of actions set in 2009 (Annex 2). Action 5.4 (page 26) is "Research into squirrelpox virus" described as "Promote the need for funding into squirrelpox virus research and vaccine development, and facilitate co-operation between the relevant departments of the different UK administrations". **It highlights funding to support research as a constraint.**

In 2015, DEFRA Minister, George Eustice, told the UK Parliament "Defra is contributing a total of £50,000 between 2014 and 2016 to research into the

Squirrel Pox Vaccine that will help to secure the long term future of red squirrels in the UK”.

The issue was discussed in the Scottish Parliament in 2013. The (then) Minister for Environment and Climate Change, Paul Wheelhouse, told the Parliament that (then) Scottish Natural Heritage (SNH) contributed funding to the Moredun Research Institute to develop the vaccine. He went on to say:

The institute has costed the next phase of further exploring attenuation and dosage at approximately £160,000. It is likely that the cost of developing and trialling a vaccine for use in the field would be a further £500,000 and that it would take five to 10 years. The trials will also require wild-caught red squirrels.

The Scottish Government and SNH have not yet been approached for funding for the next phase of the trial.

Grey squirrel population control

Controlling the key vector of squirrelpox, the grey squirrel, has helped tackle squirrelpox in red squirrels in some areas.

The Wales Squirrel Forum’s Red Squirrel Conservation Plan for Wales and the Welsh Government’s Grey Squirrel Management Action Plan for Wales describes various methods including culling, fertility control of grey squirrels and reinstating natural predators, including pine martens.

Legal protections for red squirrels and control of greys

Red squirrels receive protection in the UK under the Wildlife & Countryside Act 1981. Grey squirrels are listed on Schedule 9 of this Act, which makes it illegal to release a grey squirrel or allow it to escape.

Red squirrels are on the Environment (Wales) Act 2016 Section 7 list of species deemed “of principal importance for the purpose of maintaining and enhancing biodiversity” in Wales. Under the Act Welsh Ministers must “take all reasonable steps to maintain and enhance the living organisms” on that list and “encourage others to take such steps”.

EU Regulation (EU) No 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species (the IAS Regulation) requires a list of invasive alien species of Union concern to be drawn up. Member States

must put in place management measures for the eradication, control or containment of listed species. Grey squirrels are on the [Invasive Alien Species of Union concern](#) list. The [Welsh Government's Grey squirrel management action plan for Wales](#) addresses the requirements of the IAS Regulation in an aim to control grey squirrels.

2. Welsh Government action

[Welsh Government's Grey Squirrel Management Action Plan](#) (2018) aims to develop an integrated approach for managing grey squirrels and meet obligations under the Invasive Alien Species (IAS) Regulations. The Wales Squirrel Forum is the steering group that co-ordinates, supports and provides advice on the Action Plan.

The Welsh Government's [Nature Recovery Action Plan for Wales](#) aims to 'reverse the decline in biodiversity, for its intrinsic value, and to ensure lasting benefits to society'. The [2020-21 Plan](#) lists the Wales Squirrel Forum's [Red Squirrel Conservation Plan](#) as a programme under the objective of "Maintaining and enhancing species of principal importance for Wales for their intrinsic value and to ensure the resilience of ecosystems".

3. Welsh Parliament action

There have been two Senedd petitions to protect red squirrel populations in recent years, however they did not relate specifically to the squirrelpox vaccine:

- [P-06-1208](#) 'New laws to protect rare red squirrels from habitat loss which causes population decline' (completed in 2022); and
- [P-06-1225](#), 'Make Natural Resources Wales undertake and publish annual wildlife surveys before felling woodland' (completed in 2022).

In 2021 the [Senedd declared a 'nature emergency'](#). This was in recognition of human induced declines in biodiversity. It called on the Welsh Government to:

- introduce legally binding requirement to reverse biodiversity loss through statutory targets; and
- legislate to establish an independent environmental governance body for Wales.

Every effort is made to ensure that the information contained in this briefing is correct at the time of publication. Readers should be aware that these briefings are not necessarily updated or otherwise amended to reflect subsequent changes.