

European red squirrel (*Sciurus vulgaris*) population declined due to squirrel pox brought by the grey squirrel (*Sciurus carolinensis*) invasion

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Squirrelpox virus (SQPV) is a poxvirus that affects squirrel species. The affected species are the European red squirrel (*Sciurus vulgaris*), the American red squirrel (*Tamiasciurus hudsonicus*) and the Eastern grey squirrel (*Sciurus carolinensis*). *S. carolinensis* acts as a reservoir of SQPV but does not display clinical signs of the disease and is responsible for its transmission to native squirrels in Europe. The first grey squirrels were introduced in England in 1876. The first confirmed SQPV in Europe was in East Anglia in the 1980s, and since then has spread to other regions of the UK and other European countries. In *S. vulgaris* the disease is characterized by multifocal skin fibroma (tumours), ulcerative and exudative dermatitis with hemorrhagic scabs. Animals became lethargic, emaciated, and eventually died. SQPV to the moment has only been detected in red squirrel populations that have contact with grey squirrels. SQPV is believed to be transmitted horizontally through direct contact between infected and susceptible squirrels, contact with the infected lesions or contaminated crusts. The virus can also be transmitted indirectly through environmental contamination, such as contaminated feeders, surfaces, and mosquitos. In UK grey squirrels have been able to spread 17 to 25 times faster through competitive exclusion of the red squirrel due to increased mortality of reds from the SQPV. At the moment vaccines have been developing against this virus, but further work is required to develop a method of administering an oral vaccine to red squirrels in the wild to stop this disease and the decline of the population.
