



Main reasons for the red squirrel population decline in the UK

Habitat destruction

1. Even though red squirrels have been protected in the UK for over 40 years still their habitats are widely destroyed. For over 5 decades, for "economic reasons", habitats favourable for red squirrels have been shrinking at a rate of 8-14% per decade (Lurz et al. 1998, Forestry Commission 2006, 2007-2015). Trees deemed favourable habitat for red squirrels (larch, Norway spruce, lodgepole pine, etc.) are felled and replaced with tree species deemed "very unsuitable for maintaining a stable population of red squirrels" (mixed woodlands, Sitka spruce, etc.).

Forestry policy in the last 50 years causes rapid decline of red squirrel population because every year less and less squirrels are able to find enough food for them and their young on their own (Lurz et al.1998, Bryce et al. 2002, Bryant 2011, Forestry Commission 2007-2015).

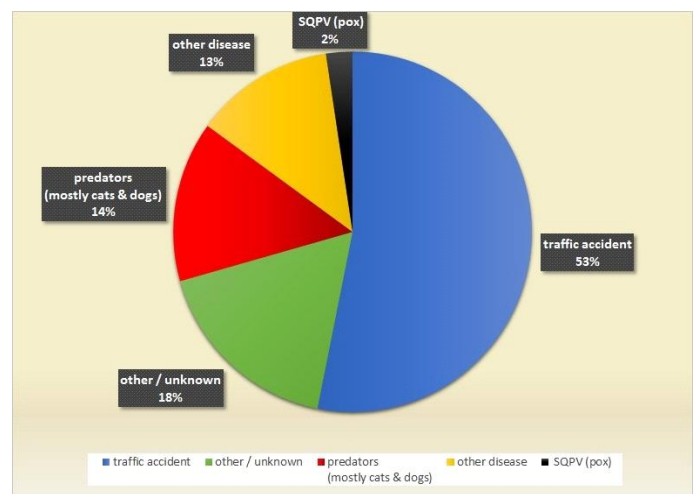
Lack of regulations protecting red squirrels during forest clearing

2. Every year thousands of red squirrels die because they don't have "woodland corridors" enabling animals getting to other habitats after woodland clearing in the area. What's worse the tree felling done this way very often takes place in the UK during the season when kittens, completely dependent on their mothers, are nursed by female squirrels which usually leads to their death from starvation.

Urbanisation

3. All scientific studies conducted in the last 25 years confirmed that human activities are responsible for definite majority (61-94%) of unnatural red squirrel deaths. The illustration on the right presents combined results of the biggest studies from the last 25 years about "unnatural deaths in the red squirrel population" (Shuttleworth 2001, Dutton 2004, LaRose et al. 2010, Simpson et al. 2013).

The research results showing that the majority of unnatural deaths among red squirrels in the UK happen on roads are known for over 15 years. In this time millions of pounds from our taxes were spent for so called "red squirrel conservation" (and in fact for killing grey squirrels with methods which are deemed torture; see the other page). Please guess how many air bridges there are in the UK that enable red squirrels to cross to the other side in a habitat cut by a road?



Answer A:

Installation of one bridge for squirrel is a cost of £250⁽¹⁾. Even if less than 1% was donated for that purpose from the money spent from our taxes for "red squirrel conservation in the UK", certainly there would have been at least 500 air bridges installed so far to save lives of thousands of squirrels each year.

Answer B:

In the last 15 years 4 air bridges for red squirrels were installed, including one which "collapsed" last year⁽²⁾. Some of those bridges were funded by private persons⁽²⁾.

Unfortunately those of you who chose Answer B were right. We need to ask the question then, where do those millions of pounds of taxpayers money go, said to be spent on "red squirrel conservation in the UK". Usually into the pockets of people in the business of killing grey squirrels which is supposed to "save red squirrels".

Our goal is to change the approach to red squirrel conservation in the UK and tackling real problems, described above. **Join us and help save squirrels in the UK:**

www.i-csrs.com

 StopSquirrelCull

www.grey-squirrel.org.uk

Thank you for your time.

All references to scientific research are available on the page of Interactive Centre for Scientific Research about Squirrels, at: www.i-csrs.com/red-squirrels-decline-0

⁽¹⁾ Costs determined by designers sending offers for ICSRS campaign "Bridge of Life"

⁽²⁾ Data collected from scientific studies and publicly available sources shared by public benefit institutions



Every day, in a cruel manner (including killing nursing females which makes their young starve to death – a crime which is deemed animal torture) and for our taxes, over 500 of those wonderful and beneficial animals are killed. To "justify" this cruelty to the public opinion people who benefit financially from killing grey squirrels spread many myths about them completely inconsistent with scientific research.

Myths about grey squirrels contrary to scientific research

Myth: *Red squirrels die out in the UK because grey squirrels infect them with pox.*

Scientific research dispelling this myth

1. Pox (scientific name SQPV) is responsible for 2% of unnatural deaths among red squirrels. For comparison, road accidents account for 53% on average (in the last 25 years of research) and predators including ill guarded pets account for 14% (Shuttleworth 2001, Dutton 2004, LaRose et al. 2010, Simpson et al. 2013.).

2. The biggest known so far pox outbreak among red squirrels which covered 14 districts took place when grey squirrels were present in only 4 of them. (Middleton 1930, Haris et al 2006).

3. Studies showed that **red squirrel infected with pox can transmit pox to another squirrel quite easily via saliva, faeces, lesions caused by the disease** (Warnock et al. 2012, Collins et al. 2014, Fiegna et al. 2016).

The same research confirmed that grey squirrel infected with pox, considering they don't develop symptoms of the disease, cannot transmit pox to red squirrel (Warnock et al. 2012, Collins et al. 2014, Shuttleworth et al. 2014, ICSRS 2016a).

Based on the current knowledge about pox (SQPV) **the only way of pox transmission from infected grey squirrel to other squirrels are sexual contacts as other routes were excluded scientifically. Sexual contacts do not occur between grey and red squirrels** (ICSRS 2016a).

Myth: *Red squirrels die out because of the competition for food with grey squirrels*

Even leaving aside "competition for habitat" with humans described on the other page, this myth is not confirmed by any scientific study. All "competition" studies conducted in the last 20 years confirm that *competition between grey and red squirrels is minimal* (Wauters et al. 2000, Gurnell et al. 2004)

Low competition between grey and red squirrels is also the result of the fact that grey squirrels use mainly food sources that red squirrels don't. Not without an impact is also the fact that grey squirrels are the world's greatest forest regenerators (Steele et al. 1996, Goheen & Swihart 2003, ICSRS 2016b) and their presence in the area causes in the long term increase in habitat quality (more seed availability from trees planted by them) for other animals (Harris et al. 2006)

Myth: *Grey squirrels are a serious threat to song birds in the UK*

This myth was used recently as a reason to kill red squirrels in the UK that only in 1970s changed status from "pests" to "protected species". Natural England and British Trust for Ornithology in the biggest study of squirrel impact on birds population (hundreds of reports collected from across England) dispelled this myth. Let's give the voice then to the scientists summarising this study.

"Grey squirrels don't have a significant impact on the bird populations in the UK"

It's also relevant that the study was done to "gain arguments for grey squirrel cull in the UK" – which was admitted by the scientists conducting the study.

The newest research from 2014 about the relationship between grey squirrels and bird populations confirmed the results from 2009 adding at the same time that:

"the presence of grey squirrels was positively related to the diversity and populations size of birds most vulnerable to predation"

Although so far there is no explanation why "grey squirrels have positive influence on population of birds most vulnerable to predation (small birds), some environmentalists presume that the reason is that grey squirrels bury about 90% of seeds in the ground and in this way "protect" supplies that would have been eaten by bigger birds. Grey squirrels "loose" about 20% of food a day during eating (about 10g) which is not substantial amount for bigger birds but for small birds especially in winter it could be a matter of survival. However this positive effect on small song birds needs further research.

Myth: *Grey squirrels cause huge losses by damaging trees that's why they need to be culled.*

This myth was also the main "reason" for killing hundreds of thousands of red squirrels (Ritchie 1920, Shorten 1954, Tittensor 1970, Harris et al. 2006, Lovegrove 2007).

All squirrels (and many other animals) during times of hunger can cause damage to a tree saving themselves from starvation but the scale of such damage is demonised on purpose. Usually the number of trees that die as a result is not more than a few percent.

For decades **much cheaper, and not involving killing animals, methods to prevent such damage are known** (Kenward et al. 1989, Mountford 1999, Huxley 2003, Forestry Commission 2006, Harris et al. 2006, Mayle et al. 2009), **effectively used around the world.**

In the UK, outside the scientific world, a well-known fact confirmed many times has been pushed out of the public debate – that **grey squirrels are the world's biggest forest regenerators, planting millions of trees a year** (Steele et al. 1993, 1998, Vander Wall 1990, 2001, Goheen & Swihart 2003, ICSRS 2016b). The newest studies confirmed also that in the UK grey squirrels "didn't change their minds" (as many skeptics suggested) and as the only researched mammal they bury over 90% of seeds (and don't find about 30% of them) and they bury mainly healthy seeds, eating damaged and infested ones first, "contributing even more to forest regeneration" (Steele et al. 1998, ICSRS 2016b).

Because of the limited space we could only discuss the main myths spread by people benefiting from killing grey squirrels in the UK. Even though the same circles proved in the case of badgers and foxes that they do not care for scientific facts we'd like to ask that you **don't just take us at our word but check yourself the research studies available in references mentioned below.**

Our goal is to change the approach to red squirrel conservation in the UK and dealing with real, described on the other page, problems. **Join us and help save squirrels in the UK:**

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Thank you for your time.

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www.i-csrs.com/red-squirrels-decline-0

or www.i-csrs.com and then select "Squirrels and forest regeneration" or "Red squirrels mortality" or "Red squirrels decline", etc.