JLM QQR7 statement 23/6/2021
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Wildlife and Countryside Act (1981) Quinquennial Review 7

Case for recommending that Pine Marten (*Martes martes*) remains on Schedule 5

If the species is removed from the protection currently offered by the WCA its conservation status will deteriorate, leading to it becoming Endangered or worse. Pine martens meet the revised decision criteria, in that they are demonstrably "subject to the following Sections 9 and 13 of the WCA offences:

9(1): intentionally or recklessly kills, injures or takes

9(2) possesses or controls; or 9(4) intentionally or recklessly damages, destroys, disturbs or obstructs its place of shelter"

It can be clearly demonstrated that scheduling addresses these causes of their endangerment.

Pine martens underwent a catastrophic decline in the 19th and early 20th centuries, largely due to intensive predator control. When gamekeeping was reduced after the first world war, pine martens began to recover some of their former range in Scotland[1]. However, pine martens continued to be trapped and killed. Records of carnivores from northern Scotland submitted to Macpherson, the taxidermist at Inverness between 1912 and 1970 show that 198 pine martens ended up there, 40 from Assynt alone. Macpherson's was the largest taxidermist in the area for this period but there were several others. It is reasonable to assume that similar numbers of martens were submitted to them too. In the first national pine marten survey published in 1983, 230 records were of dead pine martens, with trapping, shooting and snaring listed as the most frequent cause of death [2].

There was a negligible difference in reported range between the two 30-year periods prior to 1988, when pine martens were added to Schedule 5. From 1929-1958, there are pine marten records from 57 hectads in Scotland, compared with a slight increase to 94 hectads in the following 30 years, 1959-1988 (Figure 1), despite a significant increase in forest habitat during the 1970s and 1980s [3].

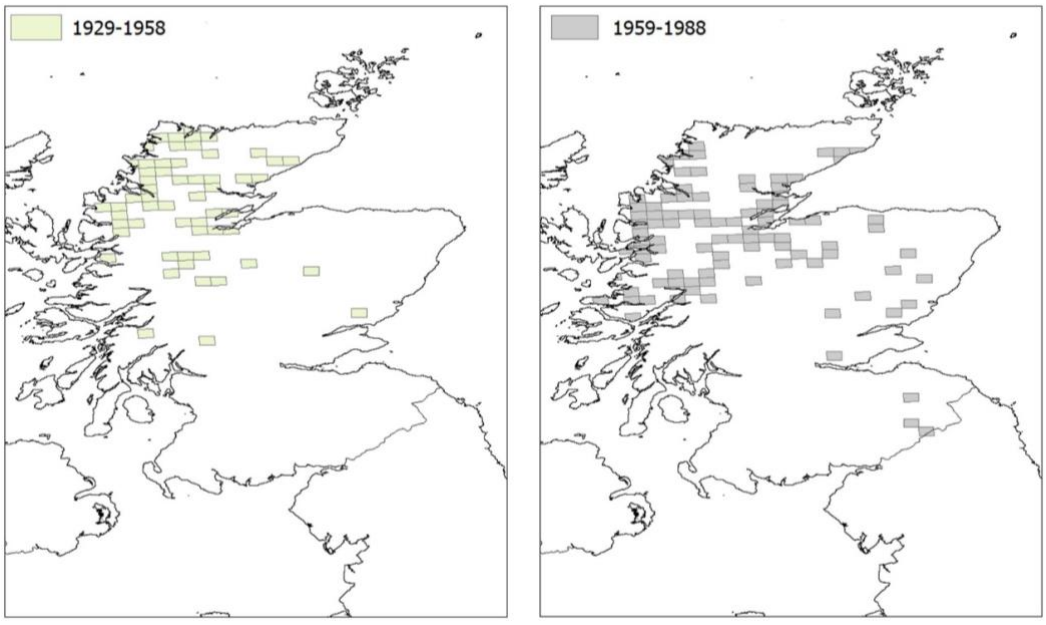

Figure 1. *Hectads in Scotland with records of pine martens for the 30-year period 1929-1958 (left) and 1959-1988 (right). Occurrence data from Global Biodiversity Information Facility GBIF.org (accessed 19 June 2021).*

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Since pine martens were added to Schedule 5 in 1988, their distributional range in Scotland has significantly increased from the 94 hectads in the 30 years prior to 1988 to 448 hectads in the 30 years after (Figure 2). This is presented as evidence that lethal predator control of pine martens (intentional killing), which became illegal in 1988, was having a significant limiting effect on the species' recovery in the years prior to legal protection. Some of the recent range expansion in southern Scotland can be attributed to a reintroduction which took place in Galloway Forest, in the 1980s [4], and a very small number of recent releases of rehabilitated martens into the Scottish borders [5], but these account for a fraction of the newly occupied 10km squares.

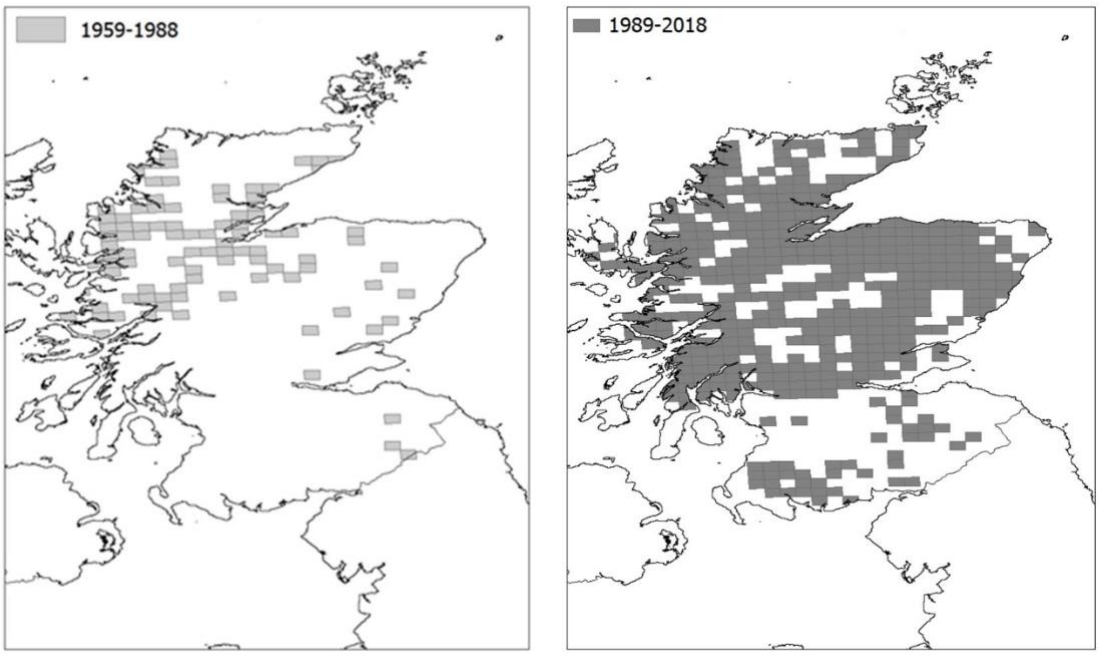

Figure 2. *Comparison of hectads in Scotland with pine marten records in the 30-year periods 1959-1988 (left) and 1989-2018 (right). Occurrence data from Global Biodiversity Information Facility GBIF.org (accessed 19 June 2021).*

While the pine marten is now classed as *Least Concern* in Scotland, it is nonetheless still recovering from a catastrophic decline during which it went extinct in most of England and Wales, as well as central and southern Scotland. Natural recovery has been slow in some parts of Scotland and did not occur at all in England and Wales, where the species is classed as *Critically Endangered*. As a result, a number of conservation initiatives are underway, some of which include conservation translocations of pine martens into regions of southern Britain which were considered too remote for natural recolonisation to occur.

The status of pine martens in the three devolved nations cannot be separated, as the recovery of the 'relict' population in Scotland is integral to the recovery of the species across Britain. The recently published long term conservation strategy for the species, relies on the current rate of natural expansion from Scotland to drive the recovery of the species in England and Wales, where it is still critically endangered, through a combination of translocations and natural range expansion [6]. If this is disrupted, as it would likely be, by the removal of pine marten's protected status across GB, there would be significant negative effects.

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If their current legal protection is removed, pine martens will inevitably be added to the list of predators that are targeted for lethal control under the auspices of protecting game birds, poultry and other species. The majority of modern gamekeepers adhere to the letter of the law, so far as protected species are concerned, although there is still undoubtedly some level of illegal killing of protected predators (e.g. birds of prey). However, in December 2005, the Shooting Times published an article which named thirty species including pine marten, which were described as 'voracious predators' that affected the economics of the game shooting and fishing interests. This is an indication of the attitude prevalent on many shooting estates that would drive a widescale increase in lethal control of pine martens if legal protection is removed. There have also been calls in recent years to cull pine martens along with badgers, in attempts to increase capercaillie breeding success. This is despite very limited evidence to suggest that pine marten predation – in comparison with poor weather and degraded habitat - is an important factor influencing capercaillie breeding success. Under the current licensing system, proposals for predator removal experiments such as this, are subject to appropriate scrutiny to ensure scientific rigour and the validity of any results and conclusions. However, if pine martens are removed from Schedule 5, that would no longer be the case.

Removing legal protection from pine martens in Scotland would have a detrimental impact on the conservation status of the species across Britain. It would send a mixed message, that lethal control is acceptable in Scotland but not in England and Wales. This would be a particular concern in the Scottish borders/northern England where natural range expansion and recolonisation are a major objective to secure the species' resilience in the long term.

An additional threat is unregulated translocations of martens from Scotland. There is increasing interest in reintroductions of pine martens as a means of controlling non-native grey squirrels (*Sciurus carolinensis*). A recently published long term strategic recovery plan for pine martens recommended that only the long-established and robust populations of pine martens in the northwest highlands are considered as donor sites for translocations, and only in a managed, monitored and sustainable way. There is a high risk that pine martens would be trapped and removed from vulnerable populations further south in Scotland and released into unsuitable recipient sites if there is no scrutiny of translocation proposals as there is under the current licensing system.

The low reproductive potential of pine martens leaves them highly vulnerable to over harvesting. Females do not usually breed until their third year and can only have a maximum of one litter per year. Litter sizes are small compared with most other vertebrate predators, so a slight increase in anthropogenic mortality is bound to have a more significant impact. If the rate of removals (lethal or otherwise) exceeds the population growth rate, then the population will decline, as has been amply demonstrated in the past. This takes decades of conservation action to reverse. As part of the donor site monitoring associated with pine marten translocations to Wales, the pre-harvesting population size of the sites trapped in 2015 (green in fig 3) and 2016 (red in figure 3) was investigated using DNA analysis from scat and hair samples in CAPWIRE [7]. CAPWIRE yielded estimates of 192 (95% CI = 99 -502) for the pre-removal population in year 1 and 191 (95% CI = 102 -311) for the pre-removal population in year 2. Based on these estimates, the relatively small numbers of 20 and 19 animals removed in 2015 and 2016 represent a maximum of 20% and 18% of the population, based on the lowest end of the confidence interval, or 10% in both years based on the estimate [8]. However, these are percentages of the total population, and an unknown proportion of those will be juvenile and sub-adult animals, therefore the percentage of adult animals removed will be higher.

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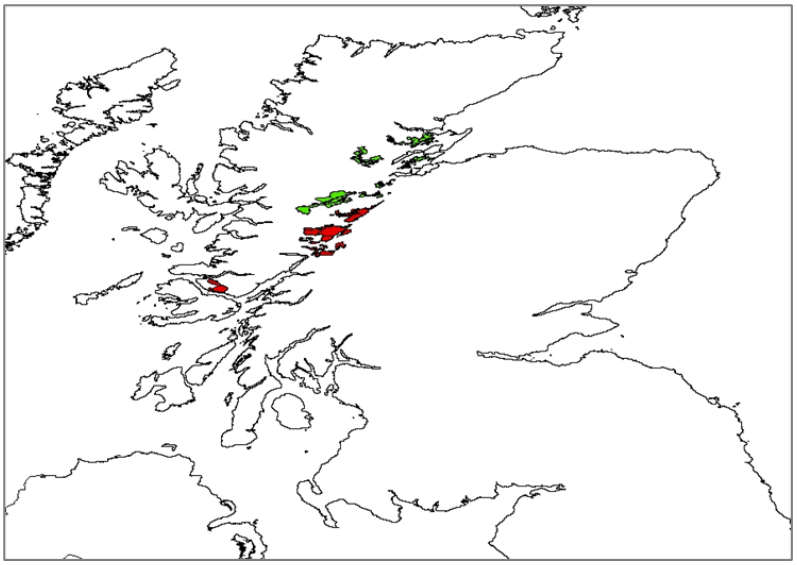

Figure 3. *Donor sites from which pine martens were removed for translocations to Wales in 2015 (green) and 2016 (red).*

This illustrates that the removal of a relatively small number of pine martens over a large area can still represent a significant proportion (10-20%) of the population. In an age-structured population viability model for pine martens, it has been shown that as the proportion of the population removed increases from 10% to 25%, the probability of a population decline increases. For a local population of 20 pine martens, removal of 3 adults (15%) gave a 21% probability of an immediate decline in population size. This increased to 43% when 20% of adults and sub-adults were removed. A similar effect was seen for a pine marten population of 50 [9]. If removals are managed so that only small numbers of animals are removed intermittently and sufficient time is allowed (minimum of 5 years) for the population to recover, then this can be sustainable. However, continual unmanaged removals scaled up over a large area will impact on the viability and genetic integrity of the population and inevitably result in a decline.

Comments on the changes to criteria for inclusion on Schedule 5

We strongly disagree with the underlying message that a species is considered worthy of protection only when it is on the verge of extinction. While it is undeniable that the IUCN Red list has an important role to play in raising conservation awareness, under the IUCN criteria, species are not listed until they are in high peril. By this time, the chances of conservation success are reduced [10] and will inevitably take more time, money and other resources than if steps are taken sooner to pre-empt decline. The IUCN categories have been described as ambiguous and fail to reflect the distance of an extant population from a risk averse minimum population size required for the long-term viability and evolutionary potential of a population [11]. A further drawback is that the relatively short trend period covered since implementation of Red Lists means that trends for species in decline since the 1970s that have now levelled off may not show up in the data and therefore elude red list inclusion, despite being vulnerable to, or at risk of, extinction.

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