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Jun 02, 2022 **The UK Badger Cull: “Lies, Damned Lies and Statistics”**

By Mark Jones BVSc, MSc (Stir), MSc (UL), MRCVS

In England, so often dubbed a nation of animal lovers, close to 177,000 native badgers, a protected species under UK law, have been shot under license since 2013, ostensibly to control the spread of bovine tuberculosis in cattle.

There is no doubt that bovine tuberculosis (bTB) is a severe problem for cattle, farmers, and taxpayers. In 2021, over 72,000 herd tests, covering more than 9 million individual cattle, were performed across Great Britain. Almost 39,000 reactor cattle and their direct contacts were slaughtered under the compulsory test-and-slaughter program. More than 3,500 new herd incidents of bovine TB were recorded in 2021, and nearly 9% of cattle herds in the ‘High-Risk Area’ covering the West and South-West of England were affected and subject to movement and trading controls. The cost to the taxpayer of bTB testing and compensating farmers over the past decade is estimated to be more than £500 million (US\$630 million). A typical bTB breakdown costs a farmer many thousands of pounds, not forgetting the associated disruption to their herds and businesses.

However, the licensed killing of badgers as a means of controlling bTB, introduced in 2013, has been steeped in controversy, with veterinarians, epidemiologists, animal welfare experts, farming representatives, politicians, government scientists, officials, and the wider public arguing over the ethics and effectiveness of the policy.

Bovine TB

Bovine TB is a chronic, debilitating bacterial disease caused by *Mycobacterium bovis*. It is not a particularly fussy organism and can infect most mammalian species, although it is primarily considered a disease of

bovids. Bovine TB can also infect people. Before the advent of mandatory pasteurization of milk and the introduction of mass vaccination, bTB was responsible for a high number of deaths among the UK population. Today, the risk to the British population from bTB is considered negligible. Nevertheless, among farm animals in the first half of the 20th century, bTB was regarded as a more significant cause of production loss than all other diseases combined in the UK. A statutory test-and-slaughter program was introduced in 1950 and continues today to protect cattle farms and growing export markets.

Since the first bTB-infected badger identification in 1971, badgers have been considered potential wildlife maintenance hosts for the infection, partly because their highly developed social organization and behavior make them a candidate for maintaining the disease within their populations. In addition, badger distribution and land-use patterns facilitate direct or indirect contact with domestic cattle. As a result, they are regarded by some as a potential vector for cattle infection.

Badger culling

After several decades of intermittent badger controls that generated little evidence for the role of badgers as a source of infection in cattle, the Government set up the Randomised Badger Culling trial (RBCT). The trial ran from 1998 to 2005 and cost the taxpayer £50 million. During the trial, believed to be the largest field trial of its kind ever undertaken, 11,000 badgers were killed to investigate the impact of badger culling on bTB in cattle.

The Independent Scientific Group tasked with running the RBCT concluded in 2007 that bTB control policies, introduced in the 1970s, had failed. They also concluded that cattle-to-cattle transmission was the leading cause of disease spread. Furthermore, they stated that the focus of farmers and the veterinary community on badger culling was 'unfortunate' and that 'badger culling can make no meaningful contribution to the future control of cattle TB in Britain.'

Nevertheless, in 2010 the incoming Conservative-led government announced the introduction of a 'carefully managed and science-led policy of badger control in areas with high and persistent levels of bovine TB' in England. Culling began in two 'pilot areas' in 2013 to reduce culled populations by at least 70% in the first year and then maintain them at a low level for subsequent years while leaving enough surviving badgers to enable the population eventually to recover.

By 2021, the licensed culling zones covered an estimated 27,000km², an area roughly the size of the State of Massachusetts.

Humaneness concerns

The licensing conditions allow two methods of killing: trapping and shooting and so-called 'controlled shooting' (targeting free-roaming badgers at night with high-powered rifles). Both the Government's own Independent Expert Panel – which reviewed the killing methods after the first year of culling – and the British Veterinary Association expressed serious concerns about the humaneness of 'controlled shooting.' However, this method has been used to kill more than 70% of the almost 177,000 badgers killed to date.

Effectiveness

Opponents of the policy have long argued that the Government must at least be able to demonstrate a

substantial and predictable reduction in bTB among cattle herds to justify such devastation of a protected native mammal species. However, while Government ministers, Government advisors, and proponents of the policy have consistently claimed that badger culling is 'working,' evidence to substantiate these claims has been severely lacking. The vast majority of the badger victims of the cull have never been tested for bTB, making it impossible to judge the level of infection among targeted badger populations.

The Government tends to rely on an analysis [published in 2019](#) by scientists from its own Animal and Plant Health Agency (APHA), who examined data from the first three limited 'pilot' cull areas from 2013 to 2017. Based on extensive modeling, the authors claimed to have identified statistically significant decreases in bTB incidence rates among cattle herds within the cull zones compared to uncultured areas selected for comparison. However, the authors also warned of possible biases in their results and recommended that evaluation of the effects of culling should continue.

New analysis

With no further analysis forthcoming from Government, in 2021, independent ecologist Tom Langton, working with fellow veterinarian Iain McGill and me, set about analyzing the available Government data. We looked at published data on bTB incidence (rate of new infections) and prevalence (proportion of herds infected) among cattle herds from 2013 to 2019 and compared culled areas with uncultured areas within the High-Risk Area for each year. Our analysis was [published in March 2022](#) in the respected journal *Veterinary Record* following an extensive and robust peer review process. We reported that, while infection among cattle herds peaked and began to decline during the study period, there was no statistical evidence for any difference between the areas where badgers were being shot and the areas where there was no cull in place. Our findings suggested that the peak and gradual decline in bTB in the High-Risk Areas could not be attributed to badger culling. Instead, we argued that the progressive introduction of cattle-based measures, including more intensive testing requirements and stricter movement controls, was likely responsible. Our conclusions are further supported by data from Wales, where a similar pattern of bTB incidence and prevalence was observed among cattle herds in the absence of badger culling.

Our study represents the largest and most extensive examination of government data published to date. We highlight that the current badger culling policy has been very costly and achieved very little. As we openly admit in the paper, the study is far from perfect, given that it examines real (and messy) data from the field rather than data from a controlled trial. Nevertheless, the size of the dataset, covering as it does the first 30 cull areas to be licensed in the High-Risk Area and including more than 200,000 herd tests from literally millions of individual cattle tested, reduces the risks from confounding factors or biases.

Government response

Rather than considering our findings and opening a dialogue, the Government's immediate response to our study's publication was to criticize the paper and its authors. The authors were publicly accused of 'manipulating data' and working to fit the data to a 'clear campaign agenda.' In a [press statement](#), the Government said it was 'disappointing to see it [our paper] published in a scientific journal', calling into question the credibility of the *Veterinary Record* and its peer-review process. The Government's Chief Veterinary Officer and Chief Scientific Adviser also published a rebuttal letter claiming our paper had 'methodological flaws' and included a graph which they claimed showed a clear reduction in cattle herd bTB incidence associated with badger culling.

However, in early May 2022, we received an email from the Department for Environment Food and Rural Affairs (DEFRA) admitting that its calculations were 'inaccurate' and providing a corrected graph [published in the *Veterinary Record*](#) on 21st May. The corrected chart showed no convincing differences in cattle bTB incidence between culled and uncultured areas. While DEFRA apologised for its 'incorrect calculations,' no apology for its derogatory public comments about the original paper's authors has been forthcoming.

Most disappointingly, the culling of badgers looks set to continue for the coming years. Just days after the publication of its 'corrected graph,' DEFRA announced licenses that will allow up to 25,000 additional badgers to be shot this summer in existing cull zones, with further license renewals and the issuing of new licenses expected in September.

Conclusions

As indicated in the Letter from the President in this issue of *WellBeing News*, lethal control of problem wildlife retains its hold on Government wildlife managers, at least in the UK. The Government's steadfast adherence to a policy that fails to achieve its objectives while devastating the population of a beloved native mammal with potential knock-on effects for the broader ecology indicates the stranglehold that "simple" lethal controls have on public authorities. While politicians may balk at policy U-turns that might alienate powerful constituencies, the ongoing and unwavering support for the badger cull policy among Government and some independent scientists and veterinarians is surprising and disturbing.

We argue that our research provides a framework for reassessing the current policy. The ongoing slaughter of badgers is not only negatively affecting the image of British farming but is also destroying healthy, protected wild creatures at a time when biodiversity is in crisis.

The time, money, and resources currently directed to badger culling would be better spent on measures that could reduce the spread of bTB, such as risk-based trading, the approval and use of more accurate cattle tests, and the urgent introduction of cattle vaccination.

Veterinarian Dr. Mark Jones is Head of Policy at the UK wildlife charity Born Free. He graduated from the University of Liverpool Veterinary School and has Master's degrees in both aquatic and wild animal health. Dr. Jones worked for many years in fish health and disease control before spending five years in wildlife rehabilitation projects in South America and Asia. He joined Born Free in 2014.

