

Research and Analysis

One Body of Evidence, Three Different Policies: Bovine Tuberculosis Policy in Britain

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Bovine tuberculosis is an intractable policy problem characterised by conflict. Devolution offers the possibility of significant policy variation within Great Britain and bovine tuberculosis has seen this. In Great Britain three distinct policies developed on the back of the same substantial evidence base. Science has not provided the answer and the law has ensured that it remains a difficult issue for the Welsh and Westminster governments. The low incidence of bovine tuberculosis in Scotland has allowed a sustainable policy to develop in that nation.

The establishment of a Scottish Parliament and Welsh Assembly were among the most important constitutional innovations of the first term of the last Labour government. Devolution gave these new bodies significant executive power. With this arose the possibility of significant policy variation within Great Britain. Devolution also took place to Northern Ireland. However, for reasons of space and the particular nature of politics in the province, Northern Ireland is not discussed in this article.

This article examines the case of bovine tuberculosis (bTB). By the 2010 general election three distinctive policies were in place in Great Britain. In England the Labour government decided that there would be no cull of badgers and trials of a badger vaccine would begin in summer 2010; Wales decided upon a limited cull of badgers combined with enhanced cattle-based measures to control the disease; while Scotland had followed policies leading to it being declared a bTB free area in September 2009.

Bovine TB has attracted attention from political scientists. Recent articles on the subject have approached the problem from the perspective of evidence-based policymaking (Wilkinson, 2007) and as a question of framing (Grant, 2009).

The structure of the article is this. A brief discussion of bTB as a policy problem is followed by discussion of the development of policy in respect of badgers. There is detailed coverage of the Department for Environment, Food and Rural Affairs' (Defra's) response to the Independent Scientific Group's interim reports which goes beyond Katy Wilkinson's (2007) study and compliments Wyn Grant's (2009) work examining the National Archive on the issue. Following this, a review of the three

policies pursued in Britain is presented. Finally, there is a brief discussion of developments in policy since the 2010 election.

The conclusions are threefold. First, Scotland, which historically has had a low incidence of bTB, has benefited from devolution in being able to achieve bTB-free status within the EU. While it might have achieved this without devolution, the tendency has been to have a single policy for all of GB on animal health as 'animal diseases don't respect political boundaries' (Enticott and Franklin, 2009, p. 379). This suggests that bTB-free status without devolution would certainly have been harder to achieve. Second, science has not been able to offer a definitive answer to the problem for policymakers. This had led to different conclusions on the desirability of culling badgers as part of control strategies. Finally, recent developments have served to reinforce the intractable nature of bTB as a policy problem.

Bovine TB as a problem

Bovine TB is a zoonotic infection of cattle caused by the bacterium *Mycobacterium bovis*. *M. bovis* can cause disease in humans. In the 1930s there were some 2,000 deaths annually from bovine TB (Hancox, 2002, p. 224). The consumption of raw milk was the usual source of infection, but as pasteurisation of milk became routine, the number of cases dropped. In 2007, there were only 27 cases. However, the potential for human disease is one reason why government is interested in the disease in cattle.

While the human impact of the disease has been reduced, the impact of bovine TB on government remains significant. In 2003, 6 per cent of cattle herds suffered TB breakdown (Defra, 2005a, p. 20), mostly concentrated in the south-west and west of England, and the south-west of Wales (Reynolds, 2006, p. 119). New herd breakdowns were running at an average of 18 per cent increase per annum (Defra, 2005a, p. 20). The economic cost to the taxpayer rose from £38.2 million in 1999/2000 to £88.2 million in 2003/2004 (Defra, 2005a, p. 26). Farmers, too, suffer costs if their herd becomes affected.

Policy to eradicate bTB from the national herd focused for decades on annual testing of animals and the slaughter of reactor animals. By 1979 only 89 herds, mostly in the south-west of England, were affected (Hancox, 2002, p. 223). However, other demands on the animal health budget, especially BSE, led to annual testing being abandoned in 1992/1993 and replaced by a system of testing intervals determined by the parish incidence of the disease.

Bovine tuberculosis is very much a regional disease. The south-west of England is the worst affected, but Wales and the West Midlands also have significant incidence of disease.

Bovine tuberculosis and the badger

The discovery of a TB-infected badger in 1971 led to the belief that badgers were a wildlife reservoir for the disease in cattle. Licences to kill badgers were issued to farmers under the 1973 Badger Act to prevent the spread of disease. Farmers killed by trapping or shooting the badgers. Welfare concerns led the then Ministry of

Agriculture Fisheries and Food (MAFF) to decide that only its own people would carry out culling. From 1975 such culls were carried out by gassing the animals in their setts, a provision permitted by the 1975 Conservation of Wild Creatures and Wild Plants Act. However, gassing also provoked animal welfare concerns leading to the first of four major reviews of policy in respect of badgers and bTB.

Lord Zuckerman's review (Zuckerman, 1980) concluded that badgers were a reservoir of infection and could spread the disease to cattle. To control the problem he proposed a 'clean ring' strategy. Badgers around an infected farm would be sampled and, where a positive animal was found, the whole sett would be culled. Then, setts adjacent to the one culled would be sampled until no further positive animals were found. Within the cull area monitoring and killing of badgers would continue for six months to keep the area 'clean' of infected badgers.

The Dunnett review (Dunnett, 1986) noted that incidence of bTB had fallen across the country whether badger culling had taken place or not. The costs of the Zuckerman policy were considered too high. Dunnett proposed an interim strategy. Dunnett recommended that farmers should take steps to limit the potential for cattle–badger interaction. Dunnett recommended that culling should take place when an outbreak might reasonably be supposed to have been caused by badgers. However, unlike Zuckerman's proposal, such a cull would be confined to the farmer's own land occupied by the infected herd. Despite this being an interim strategy it remained policy for many years. However, it must be remembered that MAFF's attention was necessarily diverted to coping with the problem of BSE which removed resources from bTB.

A further review was commissioned in 1996 under Professor John Krebs (Krebs et al., 1997). This noted that guidelines on keeping cattle and badgers apart were not being widely followed. On the question of badger culling, Krebs was unable to give a clear recommendation other than to propose an experimental trial as the evidence at that time was uncertain. The Independent Scientific Group on Cattle TB (ISG) was set up in 1998 and charged with carrying out the experiment recommended by Krebs. This was known as the Randomised Badger Culling Trial (RBCT) or the 'Krebs Trial'. No badger culling took place in areas of the country where the trial was not being carried out during the RBCT.

The trial divided 30 areas, each approximately 100 km², into three. These were known as triplets. Within each triplet area one of the triplets was assigned one of three culling protocols. One was a survey area only where no culling took place but badger activity was surveyed. One was subject to reactive culling of badgers on and around a farm following a bTB outbreak, but no general cull or clean ring strategy was pursued. The last of the three areas was subjected to proactive culling where as many badgers as possible within the area were caught and culled and badger populations in the area kept as low as possible. The trial began in December 1998 and was designed to run until 2006. The trial was temporarily suspended between February and December 2001 as a consequence of the outbreak of foot-and-mouth disease.

The ISG published interim findings in *Nature*. In reactive areas, where culling took place only after an outbreak – essentially the policy post-Dunnett – culling was

found to cause an increase in the incidence of bTB over the survey areas (Donnelly et al., 2003, p. 835). This finding was so convincing that the ISG recommended that this practice be ended as it would not offer a viable policy option. Proactive areas experienced a 19 per cent drop in bTB rates within the areas but a 29 per cent increase in areas that adjoined the culling area (Donnelly et al., 2006, p. 843).

The observed effect that culling badgers in one area led to an increase in bTB in adjoining areas is known as the perturbation effect. It is never possible to eradicate badgers completely from an area by culling. Those animals that do survive roam widely, potentially increasing the risk of cattle infections (Woodroffe et al., 2006).

The government's response to the interim findings of the ISG was threefold. In December 2005 it announced that farmers would need to have their animals tested before moving them off the farm. The farmer would have to pay for this test unless their routine herd test had occurred within the previous 60 days.

Second, the compensation payable to farmers who experienced a herd outbreak was revised. The new rates were laid out in tabular form. The farmer would receive the amount in the table for each animal. This replaced the previous system which valued animals individually and was thought to overvalue them. Both of these measures resulted in complaints from the industry and implementation of pre-movement testing was delayed.

The third response was to launch a public consultation on the principle of badger culling. The consultation document presented the evidence that tackling wildlife reservoirs of infection was important, that culling badgers could be effective in preventing the spread of the disease and that veterinary advice was that culling of badgers and cattle was necessary for effective bTB control (Defra, 2005b; for more detailed discussion see Spencer, 2009, pp. 206–208). The ISG was not happy with the document, saying that the scientific basis for any badger culling was not accurately portrayed (ISG, 2006, p. 1).

The consultation generated a huge response with 47,472 responses and 13 petitions against a cull bearing 12,100 signatures. Of those responses, 95.6 per cent of them were opposed to a cull with 4 per cent in favour (Defra, 2006b, pp. 4–5). Certainly campaign groups took the opportunity afforded by the consultation to state their case. The Badger Trust and the RSPCA both took out full-page advertisements against the cull in the press. However, despite this, the huge number of responses took officials by surprise.

A second arm of Defra's consultation was a series of citizens' panels. The panels were intended to be representative of the general public and those involved in farming or campaigning groups on the issue were excluded. Each panel experienced a two-hour 'scoping workshop' where the issues were introduced and a one-day workshop in London including small group discussions and exposure to a panel of experts (Defra, 2006b, p. 10).

At the end of the workshops, the participants split evenly on the principle of culling badgers. However, participants considered that the science was inconclusive and, among those who supported a cull, that support was conditional upon it being centrally coordinated and as part of a wider package of measures to manage the disease (Defra, 2006b).

To this evidence of public opinion was added, in June 2007, the final report of the ISG. It came out firmly against a cull. 'On the basis of our careful review of all currently available evidence, we conclude that badger culling is unlikely to contribute positively, or cost effectively, to the control of cattle TB in Britain' (ISG, 2007, p. 23). Reactive culling was found to have an overall detrimental effect, while proactive culling produced very modest improvements over several years of intensive culling by professional staff and even then at the cost of increasing incidence of bTB in the adjoining areas. 'The reasons for the limited capacity of badger culling ... to substantially reduce overall TB incidence in cattle stem from the behavioural and ecological responses of badgers to culling, leading to strongly non-linear relationships between badger density and *M. bovis* transmission' (ISG, 2007, p. 172).

Despite the clear conclusion of the ISG and evidence that public opinion could only reach fifty-fifty when led through the arguments, ministers continued to hesitate in ruling out a cull. Then secretary of state, David Miliband, referred to continuing work before coming to a final view on culling. When Gordon Brown became prime minister, all of Defra's ministers were moved from the department except Jeff Rooker who had continued to hold out the prospect of a cull. In Brown's reshuffle, Rooker was given responsibility for animal health. 'The move is likely to be welcomed by the farming industry as the outspoken Lord Rooker has previously indicated strongly in private and in public that he supports calls for a badger cull' (Driver, 2007).

Defra also asked the then chief scientific adviser, Sir David King, to review the evidence. King produced his report in little more than six weeks and confined himself to science only, giving no consideration, as the ISG had, to the cost-effectiveness of any cull. King's conclusion was that the culling of badgers 'could make a significant contribution to the control of cattle TB' (King, 2007, para. 51).

Policymakers in Defra, as well as their counterparts in the devolved administrations in Scotland and Wales, had before them a considerable body of evidence on which to base their decision on culling badgers. Public opinion was opposed, while scientific evidence varied from support for a cull from Sir David King and the veterinary profession to opposition to a cull from the ISG. It is to the three distinctive policies that flowed from this same evidence base that discussion now turns.

Same evidence, three policies

Hilary Benn, then secretary of state at Defra, announced to the House of Commons on 7 July 2008 that badger culling would form no part of the policy response in England. Instead, a programme of vaccination of badgers would be undertaken. A TB Eradication Group was established to advise government on the continuing development of policy, in particular drawing up a TB Eradication Plan for submission to the EU.

Scotland pursued a different policy. Bovine tuberculosis has always had a low incidence in Scotland and the Scottish government took the decision to apply for TB-free status. This was achieved in September 2009. There was no culling of

badgers in Scotland or plans to introduce a cull. Instead the focus is on keeping bTB out of the country. To this end, additional testing of animals being imported into the country from England is required.

However, it should be noted that there remains ongoing dispute between Edinburgh and Westminster centred on the question of resources. While responsibility for bTB policy was devolved to Scotland, the animal health budget was not. The Scottish government, in particular, has been keen to negotiate a deal to secure the funding to go with its policy responsibility. There has been much discussion between the two governments. The sticking point appeared to be Edinburgh's desire to see funding for sudden disease outbreaks, such as foot-and-mouth disease, continuing to come from the Treasury rather than become Edinburgh's responsibility (Scottish Government, 2009). It was planned to hand over control to Edinburgh on 1 April 2010 but Defra decided that this deadline could not be met, causing anger in Scotland (Boderke, 2010). It is now hoped that agreement can be reached for the Scottish government to take budgetary control from April 2011 (Scottish Government, 2010).

The approach of the Welsh Assembly was different. It has eradication of the disease as a goal. However, unlike Scotland it has no prospect of achieving TB-free status in the near future but, like Scotland, Wales has proposed enhanced control measures in cattle. Also, like Scotland, there have been tensions between the Welsh Assembly government and Defra over control of resources to deal with bTB (see Enticott and Franklin, 2009 for a discussion). Culling badgers formed part of its response to the disease but, like England, it is also investigating the possibility of vaccination for badgers.

The proposed area in Wales for badger culling to take place is mainly in Pembrokeshire. The cull was presented as a pilot and the full costs were to be borne by the Welsh Assembly. The view of the Welsh Assembly was that a 9 per cent reduction in bTB would be achieved after two years. Perturbation would be minimised as much of the pilot area is bounded by coastline.

Recent developments

There are two recent developments that demand attention. One is the new policy of the coalition government, the other the legal challenge to the Welsh Assembly's proposed badger cull.

The coalition agreement states that 'As part of a package of measures, we will introduce a carefully managed and science-led policy of badger control in areas with high and persistent levels of bovine tuberculosis' (HM Government, 2010, p. 18). The government's proposals were included in a consultation document issued in September 2010 (Defra, 2010). These included, crucially, a proposal to allow farmers and landowners to carry out a cull of badgers over a sufficiently large area and at their own expense. Licences to cull would be issued under the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 rather than the Animal Health Act used by the Welsh government. Using farmers, rather than Defra staff, to carry out the cull should make it less expensive for Defra. Opposition to the

cull continues and, if a cull is permitted by Defra, it remains to be seen if the Badger Trust or others will seek to challenge its legality.

The proposed cull in Wales has so far been prevented by a legal challenge from the Badger Trust. Part of the Welsh government's difficulty is a technical one. The Court of Appeal was unanimous in holding that the minister was in error in laying an order applicable to the whole of Wales on the basis of a consultation that was limited to the area of the proposed cull (Pill LJ in *Badger Trust v. Welsh Ministers*, para. 71).

A majority of the court also held that ministers had unlawfully failed to carry out a balancing exercise weighing the harm involved against the potential benefit of a cull (Smith LJ in *Badger Trust v. Welsh Ministers*).

While these two failures may be corrected, more serious is that a majority of the court held that the prediction of a 9 per cent reduction in cases of bTB was not enough to meet the requirement of the Animal Health Act 1981 that a cull 'substantially reduce' the incidence of disease. Smith LJ, ruling that 'as a matter of ordinary language, such a reduction could be described as a substantial reduction. I would call it modest' (Smith LJ in *Badger Trust v. Welsh Ministers*, para. 83). For a cull to be lawful, ministers need to demonstrate that a cull would produce a substantial reduction in bTB. A 9 per cent reduction is, at least for the moment, not considered sufficient. However, it should be noted that Defra consider that ongoing research after the RBCT showed prolonged benefits of culling (Defra, 2010, pp. 29–30). This may aid the Welsh government in the future as well as offering a challenge to the cost–benefit basis of the ISG's rejection of a cull.

A further lesson to draw in respect of Wales is that Westminster legislation can trump the wishes of a devolved administration as the administration remains subject to it. Much existing legislation has, perhaps, not caught up with devolution.

Conclusion

This article has presented discussion of the development of policy on bovine tuberculosis. In particular, it has focused on the difficult decision that has faced policymakers on whether or not to permit a cull of badgers as part of the policy response. The finding of the ISG that culling was not a viable policy option did not meet with wholesale acceptance. Defra commissioned a further review of policy which ended up supporting a cull. This suggests that attempts to depoliticise the issue, hoping that science will provide *the* answer to a policymaker's knotty problem, are doomed to failure. Scientific expertise itself inevitably becomes politicised (Wilkinson, 2007, p. 1). There are always questions about which science to use and how to handle legitimate scientific disagreement. Policymakers are also faced with the additional problem that policy has to be cost-effective and enjoy public support or at least tolerance.

The outcome of all the study into the disease is that within Britain three distinct policies were pursued on the same topic. Bovine TB is a disease whose incidence varies across regions. It is therefore perhaps beneficial to have regional difference.

Scotland obtaining TB-free status may grant it some economic advantages compared with the rest of the UK. In England, hopes were initially placed in badger vaccination; however, that may be supplemented by some badger culling under the new coalition government. In Wales, a multifaceted approach was adopted that combined culling with stricter cattle measures. However, in Wales following the decision of the Court of Appeal, culling faces legal difficulties.

Scotland and Wales have achieved the support of key industry stakeholders for their policy. England's National Farmers Union (NFU) still argues for a cull and the TB Advisory Group has noted the need to tackle the reservoir of disease in badgers. In 2010, despite years of research, only Scotland has a stable and sustainable bTB policy. In England and Wales it is as though the problem is as intractable as ever.

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Note

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