



**Badger Trust Cymru**

**Submission to the Rural Development Sub-Committee  
of the Welsh Assembly**

**14 September 2007**

## **Executive Summary**

1. Badger Trust Cymru welcomes this invitation to present written evidence to the Welsh Assembly's Rural Development Sub-Committee. There is now a greater body of sound scientific evidence about the epidemiology of bovine TB than ever before. We hope that the Committee will base its recommendations on this sound science, much of which has been published in the world's leading peer-reviewed journals[1-3].
2. Badger Trust Cymru seeks constructive, positive solutions to the problem of bovine TB, all of which must be based on sound science. We support the Independent Scientific Group's conclusion that badger culling cannot make a "meaningful contribution" to bovine TB control.
3. Instead, the science makes it clear that it is perfectly possible to bring bovine TB under control using cattle-based measures alone, such as gamma interferon TB testing and whole herd slaughter for problem herds.
4. It is imperative that a badger cull is not offered to farmers as a political *quid pro quo* for implementing the strong, cattle-based TB control measures that the science shows are required. The Welsh Assembly has a good track record of supporting farmers and there is now an opportunity to help farmers address not only bovine TB but also a wider range of farm animal health and welfare objectives with carefully targeted funding.
5. We make the following recommendations:
6. **Recommendation 1:** The establishment of an Epidemiology Research Unit that is fully independent of Animal Health. It will use lay staff under the supervision of independent scientists to gather useful epidemiological data to support the battle against bovine TB – and potentially against other diseases, too.
7. **Recommendation 2:** The Welsh Assembly Government should appoint an independent scientific panel to ensure that new TB policies are based on sound science and, crucially, that the benefits of the policies are properly monitored after their introduction.
8. **Recommendation 3:** The Welsh Assembly Government should establish an incentive system for people involved in the slaughter and inspection of cattle and deer, to maximise the reporting of suspicious lesions.
9. **Recommendation 4:** The Welsh Assembly Government should: introduce annual bovine TB testing across Wales; whole herd slaughter for problem herds; urgently review the progress of gamma interferon testing and upgrade laboratory facilities accordingly; and, improve the use of resources by involving trained lay personnel rather than vets in bovine TB testing.

10. Badger Trust Cymru accepts the scientific findings of the ISG and notes that the ISG has provided scientific and economic arguments, which eliminate the culling proposals advocated by farming unions.
11. We advocate the urgent introduction of a case-control study to assess the benefits of taking steps to keep badgers out of farm buildings.
12. Badger Trust Cymru rules out the EPCC's proposal to 'remove' wildlife that carry and transmit TB within a 2km radius of infected farms.
13. We support a wide range of other EPCC proposals, subject to certain conditions and enhancements.
14. Finally, we provide a summary analysis dismissing the disgraceful extermination of badgers in the Republic of Ireland as a grossly flawed policy.

## **Introduction**

15. Badger Trust Cymru welcomes this invitation to present written evidence to the Welsh Assembly's Rural Development Sub-Committee. There is now a greater body of sound scientific evidence about the epidemiology of bovine TB than ever before. We hope that the Committee will base its recommendations on this sound science, much of which has been published in the world's leading peer-reviewed journals[1-3]. If bovine TB is to be effectively controlled, it is essential to avoid policies based on speculative and intellectually weak "what if?" interpretations of the science.
16. Badger Trust Cymru is an informal coalition of seven badger groups in Wales. Badger groups work locally: to conserve badgers and their habitats; to provide public opportunities for badger-watching; to rescue and rehabilitate injured and orphaned badgers; and to address occasional conflicts between people and badgers.
17. Badger Trust Cymru works in partnership with the Badger Trust. The Badger Trust provides centralised, specialist scientific, legal and communications advice to badger groups. It also liaises with relevant organisations across the UK and Ireland. Its partners include the many land-owning nature conservation organisations that have recognised that badger culling cannot make a meaningful contribution to controlling bovine TB, including: the National Trust, the RSPB, the Wildlife Trusts and the Woodland Trust. These charities have substantial land-holdings in Wales.
18. Badger Trust Cymru seeks constructive, positive solutions to the problem of bovine TB, all of which must be based on sound science. We support the Independent Scientific Group's conclusion that badger culling cannot make a "meaningful contribution" to bovine TB control. We hope that the Rural Development Sub-Committee will acknowledge that badgers are a protected species and that Wales is a stronghold for this species in the EU. Taken together, these two arguments mean that demands from farming unions for the extermination of badgers in substantial areas of Wales are, at any scale, scientifically, politically and economically unacceptable. These demands must be rejected.
19. Instead, the science makes it clear that it is perfectly possible to bring bovine TB under control using cattle-based measures alone, such as gamma interferon TB testing and whole herd slaughter for problem herds. The question that the Rural Development Sub-Committee needs to answer, we suggest, is the extent to which taxpayers, through Welsh Assembly support mechanisms, should be expected to help farmers implement such measures.
20. It is imperative that a badger cull is not offered to farmers as a political *quid pro quo* for implementing the strong, cattle-based TB control measures that the science shows are required. The Welsh Assembly has a good track record of supporting farmers and there is now an opportunity to help farmers address not only bovine TB but also a wider range of farm animal health and welfare objectives with carefully targeted funding. This would be a sustainable, win-win approach, helping

to improve the economic viability of farming in Wales without alienating the wider public who are prepared to support farmers, but not at any cost.

21. In this document, Badger Trust Cymru offers positive solutions that will help to address the problem of bovine TB in a sustainable way. We also comment on progress on the recommendations made by the Environment, Planning and Countryside Committee in August 2004.

## ***Positive solutions***

### **A. Reforming Animal Health**

22. **Recommendation 1: Badger Trust Cymru recommends the establishment of an Epidemiology Research Unit that is fully independent of Animal Health. It will use lay staff under the supervision of independent scientists to gather useful epidemiological data to support the battle against bovine TB – and potentially against other diseases, too.**
23. For 40 years, state vets have been responsible for advising on the best policy strategies for bovine TB control and for determining the course of scientific research in this field. State vets were behind the narrow terms of reference imposed on historic enquiries into bovine TB, from Zuckerman[5, 6] to Krebs[6], all of which focused attention on badgers rather than on bovine TB itself.
24. The ISG, to its credit, rejected this dogmatic approach in favour of a broader research base. As a result, the evidence now clearly shows that bovine TB is still very much maintained and spread by cattle[3]. It is transmitted rapidly to badgers who are the unwitting victims and consequential scapegoats.
25. Nevertheless, state vets and retired state vets continue to make public claims that they know best and that badger culling is essential. Yet despite their claims to be authoritative, state vets do not have any epidemiological evidence to support their argument. In fact, the opposite is true.
26. Animal Health (formerly the State Veterinary Service) is not currently able to effectively manage the bovine TB epidemic in Wales or in Great Britain because it lacks adequate data and its IT systems are, in the words of Animal Health itself, ‘archaic’[4].
27. In June 2007, the Badger Trust published a report demonstrating that state vets do not possess any evidence to explain the epidemiology of bovine TB or, as a result, to manage the problem of bovine TB. Their claims are, instead, based on supposition and anecdote[7]. This is not a satisfactory way to determine policy.
28. The report found that:
  - (i) State vets do not collect sufficient evidence to explain the underlying epidemiology of bovine TB events. Furthermore, the limited data that is gathered is held on paper, not data processed and never statistically analysed.

- (ii) State vets rely on unreliable farmer evidence about where livestock have been held on farms with multiple land parcels. Consequently, state vets cannot say with any authority where a TB outbreak was acquired. This, in turn, means that it would be impossible for state vets to determine where badgers should be killed, in the unlikely event of the Welsh Assembly approving such a policy.
- (iii) Animal Health (formerly the State Veterinary Service) does not hold records on badgers, collected by state vets from farms, for post mortem examination.
- (iv) A wide range of failings in the state-run bovine TB testing programme was identified by the European Union in 2005. Many of these allow for undetected cattle-to-cattle, herd-to-herd transmission of TB.
- (v) State vets have not been kept up-to-date with new scientific research on bovine TB. The Introduction to the online bovine TB practise manual (VIPER) had not been updated for a decade.

29. The full report is available online at <http://www.badgertrust.org.uk/content/w-campaign.asp> and we include a copy with this submission.
30. In July 2007, the Department for Environment, Food and Rural Affairs (DEFRA) effectively confirmed the Badger Trust's lead finding. It published research that has been in the Government's possession since 2000. The research included a review, by the Veterinary Laboratories Agency, of the qualitative information gathered by TB49[8]. TB49 was the questionnaire used by state vets to document TB outbreaks between 1986 and 1998. It was the only routine source of evidence available to state vets to allow them to comment on the epidemiology of bovine TB.
31. Yet the researchers found 'a minimum quality standard in operation' with regard to completion of the forms and concluded that 'TB49 is not adequate for use in detailed epidemiological analysis of risk factors for bovine tuberculosis'. In short, the data gathered by state vets up to the end of 1998 could not be used to explain the causes of bovine TB cases or to explain the spread and persistence of the disease.
32. Our analysis of subsequent data gathering by state vets (Appendix A) confirms that they still have no epidemiological evidence to support their demands for badger culling or to support the implementation of a badger culling strategy. Nor do they have data with which to comment on cattle management and other possible risk factors. They are effectively in the dark.
33. In summary:
- (i) The SVS has *never* had a system for collecting and analysing epidemiological data on bovine TB.

- (ii) When TB99 (TB49's successor) was implemented, the SVS *consistently failed* to obtain adequate scientific controls to complement the case studies. This greatly weakened the potential for sound scientific analysis.
  - (iii) Disease control emergencies including classical swine fever and foot and mouth disease *totally disrupted* the collection of epidemiological data by state vets. Future outbreaks of disease will have the same effect.
  - (iv) With the current Disease Report Form, Animal Health is *failing to gather epidemiological evidence* to inform the battle against bovine TB and the EU's 2005 findings suggest that the DRF might be a futile exercise even in addressing the particular breakdown in hand.
  - (v) State vets only gathered adequate data for the Case Control Study 2005 when a specific person was assigned to maintain internal pressure for its delivery.
34. When its report on Animal Health was published, the Badger Trust advised the then Secretary of State for the Environment, David Miliband, to treat state vets' advice with caution. Badger Trust Cymru urges the Welsh Assembly's Rural Development Sub-Committee to take the same approach. Whilst we do not dispute state vets' good intentions, claims that are not supported by a robust evidence base should be rejected.
35. What is the alternative approach? Animal Health must play a central role if bovine TB is to be controlled. But resources are stretched and are likely to be stretched still further by inevitable, future outbreaks of animal diseases arising from intensive farming practices and large-scale animal movements. More efficient use must be made of resources.
36. The Badger Trust's report found that in 2005 and 2006 alone, state vets spent the equivalent of between 11 and 15 working years collecting paper-held data on bovine TB outbreaks. This is not an effective use of the time of skilled professionals, particularly given that the data contributes nothing to our epidemiological knowledge.
37. The archaic paper-based approach by Animal Health must be replaced with a new and independent Epidemiology Research Unit (ERU) with its own budget and team of lay researchers whose function is to gather epidemiological data on a digital system. The costs of investing in such a system could be balanced by reducing the number of state vets, who will no longer need to spend hours of time recording data on paper that is never to be analysed. Data gathering does not require the skills of a state vet, since it is essentially an administrative service.
38. Giving the ERU its own budget will protect it from the impacts of disease control emergencies faced by Animal Health. Decisions concerning what data are to be gathered, and the methodology used, should be made by an independent panel of scientists who can then update the data gathering

protocol in the light of initial findings. The appointments to this panel should be independent of the chief vet and made, instead, by the Welsh Assembly's chief scientific adviser.

39. Whilst our focus is on bovine TB, it is also likely that the Epidemiology Research Unit will be able to gather data for use in combating other serious livestock diseases.

## **B. Utilising independent scientific advice**

40. **Recommendation 2: Badger Trust Cymru believes that the Welsh Assembly should appoint an independent scientific panel to ensure that new TB policies are based on sound science and, crucially, that the benefits of the policies are properly monitored after their introduction.**

41. In 23, above, Badger Trust Cymru describes how state vets have maintained a focus on badgers in the search for a solution to bovine TB – and failed. In fact, it is now clear that cattle are the primary source of the problem and the supposed “gold standard” skin test is inadequate to the challenge of tackling bovine TB in a livestock economy that involves large, intensively managed herds, substantial numbers of animal movements over short and long distances and a testing regime that is not frequent enough.

42. At the root of state vets' failure to address bovine TB has been the misunderstanding that having a scientific background equates to having scientific expertise in the epidemiology of a disease. As illustrated in Recommendation 1, above, it is patently clear that Animal Health suffers from a lack of epidemiological knowledge, not a surfeit of it.

43. Badger Trust Cymru believes that the time is right for a genuinely independent and scientific approach to formulating bovine TB policy in Wales.

44. State vets and the existing TB Action Group (TBAG) will, of course, still play a role in advising on the practical implementation of policy. But the formulation of policy must be science-based and removed from the bias and baggage associated with state vets and stakeholders.

45. Badger Trust Cymru's preferred option is a shared approach with the proposed Science Advisory Board (SAB) that will be established in England. The SAB was proposed by Defra's Science Advisory Council (SAC) in 2005 and accepted by former animal welfare Minister, Ben Bradshaw, in 2007[9]. Unfortunately, progress in establishing the SAB has been painfully slow, revealing a lack of enthusiasm in Defra where state vets wish to protect their positions as the main source of advice to ministers[10].

46. Badger Trust Cymru respectfully draws the Rural Development Sub-Committee's attention to the advice of Defra's SAC, which has provided a detailed proposal for the structure of the SAB. The SAC recommended that the SAB should have ‘the clear remit, breadth of expertise and coverage to enable it to have oversight of all available bTB science, both from within and external to Defra, bringing it all to bear in providing advice to the Department; such advice should include the



identification of gaps in the evidence base ... it was essential that bTB SAB had a chair who was independent'[11].

47. The SAC also warns of the dangers of confusing stakeholder input with independent scientific advice. This issue is highly relevant for Wales' TBAG. As the SAC advised with regard to the equivalent TBAG in England: 'TBAG should not be seen, or used, as an alternative source of scientific advice to Ministers ... the remit and role of TBAG needs to be clearly identified as distinct from the scientific advisory roles played by the [Chief Veterinary Officer] and the [Chief Scientific Advisor].'[11].
48. The danger of confusing TBAG advice with scientific advice is illustrated by the stance of NFU Cymru, a member of TBAG. Badger Trust Cymru was disappointed to see Dai Davies from NFU Cymru recently arguing that it would be 'a total waste of time'[12] to extend the use of cattle-based measures such as gamma interferon testing in the absence of badger culling. No scientific evidence was offered in support of this claim and the ISG's scientific report makes it absolutely clear that such measures will rapidly bring bovine TB under control and put it into reverse, to the benefit of both farmers and the tax payer.
49. Similarly, the Farmers Union of Wales – also a member of TBAG – claims that intensive badger culling would lead to a reduction in TB incidence of '75% ... following the fourth year of culling, and ... a more proactive approach would be likely to increase this percentage significantly over a shorter period of time'[13]. Again, no scientific evidence is presented in support of this claim. Moreover, the ISG has made it publicly clear that its modelling shows that cattle are responsible for at least 70% of bovine TB[14].
50. In addition, the Country Land and Business Association has claimed at TBAG that Wales became bovine TB-free in 1958 as a result of 'informal' badger culling by farmers and TB accreditation. Once again, no scientific evidence was presented in support of this claim. The presenter, Paddy Rooney, even admitted that it was 'based ... on a distillation of conversations and anecdotal evidence'[15].
51. The clear problem with Mr Rooney's case is that he fails to distinguish between the benefits arising from improved TB testing regimes and the alleged benefits arising from unquantified badger culling. His conclusions are prejudiced supposition.
52. Badger Trust Cymru finds the farming unions' economy of effort in the arguments that they submit to be disappointing. An additional role for the SAB – whatever form it takes – should therefore be to provide farmers, state vets and private vets with independent, clear advice on the science underlying bovine TB policy and the benefits that the policy is expected to bring. This will counter the speculative misinformation put about by farming organisations and help to minimise discontent and an unwillingness to co-operate with improved TB controls.

53. An independent scientific panel would be able to comment on the accuracy or otherwise of claims made about bovine TB control strategies, helping to ensure understanding of the issues within the farming community.

### **C. Improved slaughterhouse surveillance**

- 54. Recommendation 3: Badger Trust Cymru believes that the Welsh Assembly Government should establish an incentive system for people involved in the slaughter and inspection of cattle and deer, to maximise the reporting of suspicious lesions.**

55. Before bovine TB can be controlled in cattle, it needs to be detected. The identification of bovine TB lesions at slaughter makes a modest contribution to the effective monitoring of the disease in cattle, even though only around 14% of infected animals have visible lesions[16]. Research also shows that deer, particularly high density farmed and park deer, show TB infection even more readily than do cattle, yet Badger Trust Cymru notes that very few infected deer are ever reported, even though research has indicated a number of localities where the disease is clearly a problem in deer[17].

56. A study of the minutes of ISG's meetings reveals consistent concerns about consistency and objectivity of slaughterhouse surveillance for bovine TB[18]. High variability in the consistency of slaughterhouse identification of bovine TB has also been found in the Republic of Ireland[19]. And in the United States, a bonus scheme has long been in operation for slaughterhouse inspectors, to improve standards of reporting. This has resulted in 38 of the 40 slaughterhouses which deal with 94% of the cattle in the US 'meeting or exceeding targeted surveillance levels'[20]. (Michigan in the USA has a known wildlife reservoir for bovine TB in the form of white-tailed deer. These are fed illegally by hunters resulting in high densities that are susceptible to infection – not unlike deer parks and farmed deer in the UK. Virtually all other cases of bovine TB infection dealt with at federal level have been traced to cattle movements from Mexico.)

57. Badger Trust Cymru concludes that an incentive scheme for those involved in the slaughter and processing of cattle and deer should be tested, to see whether the consistency of slaughterhouse reporting improves.

### **D. Annual testing, gamma interferon and resource efficiency**

- 58. Recommendation 4: Badger Trust Cymru believes that the Welsh Assembly Government should: introduce annual bovine TB testing across Wales; whole herd slaughter for problem herds; urgently review the progress of gamma interferon testing and upgrade laboratory facilities accordingly; and, improve the use of resources by involving trained lay personnel rather than vets in bovine TB testing.**

59. In 2001, the ISG noted that 'annual testing of all herds will give a true measure of annual incidence whereas testing at 2, 3 or 4 year intervals will not, because some of the infections detected could

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have been initiated in previous years'[21]. One of the consequences of this is that the apparent 'increase' currently being recorded in bovine TB is in large part the product of increased testing. As more infected herds are found, the number of parishes subject to annual and biannual testing increases, leading to further discoveries of infection.

60. In July 2006, the ISG's Chairman advised Defra officials that 'a 4-year testing regime was not appropriate. He and the Group believed that pre-movement testing was an important surveillance tool but that annual testing for the whole country was necessary. Resource for this should be found, some of which could be released by eliminating problem herds since 52% of tests were carried out on only 4% of herds'. Defra officials rejected this proposal on the ground that: 'the Department would not operationally be able to undertake uniform annual testing; a proportionate and measured response was required focussing on pre-movement testing with consideration of a new hotspot policy and greater use of the gamma interferon test. He said that annual testing for the National Herd would represent a disproportionate approach, and was not practicable to deliver with the veterinary resource available'[22].
61. It is not clear whether the ISG's advice on annual testing was ever communicated to Ministers at Defra or in the Welsh Assembly Government. However, the failure to implement an annual testing policy suggests that Ministers were unaware of this scientific advice, not least because in Wales the farming unions had also called for annual testing and would therefore have supported the measure. Given both scientific and farming support for annual testing, Badger Trust Cymru believes that the Welsh Assembly Government should apply annual testing across Wales.
62. Also in 2001, the ISG observed that: 'Given the increased incidence of cattle herds affected with TB, and the incomplete sensitivity of the tuberculin test, it is likely that increasing numbers of infected cattle are remaining undetected'. As more evidence emerged of the failure of the tuberculin test and as Defra dragged its feet on assessing the gamma interferon test, the ISG became increasingly frustrated: 'We have consistently questioned the effectiveness of the conventional tuberculin test in situations of high disease incidence. Its value as a herd test is fully accepted, but as a test to identify individually infected animals it is far less dependable. The opportunities for disease transmission from infected animals at all stages of the disease process, and the difficulties of diagnosing some of these animals using the established skin test, have been demonstrated in laboratory and field studies on the pathogenesis of TB in cattle. We believe, therefore, that the case for developing improved techniques of diagnosis is overwhelming, and have repeatedly advised that far more emphasis be placed on this particular objective. It is for this reason that we have given continuing support to the development and field evaluation of the gamma interferon (IFN) test (although as yet not perfect) as offering the best prospects for more effective identification of TB-infected cattle. We have advised that complementary use of this test with the tuberculin test is the only realistic way of tackling the substantial reservoir of disease in cattle that appears to be present in some areas, and also to reduce radically the risk of transmission of disease to new areas of the country. Defra's unwillingness to

accept our advice on the design of a field trial of the IFN test which would be rigorous enough to yield the kind of data on its performance that are essential to provide an informed basis for its use in a range of control options, has been disappointing and extremely worrying.’

63. The lack of progress in Defra left the Welsh Assembly Government with little information on which to base a gamma interferon policy. However, Badger Trust Cymru welcomed the Welsh Assembly Government’s positive attitude to gamma interferon, as expressed by Carwyn Jones, for example, on 5 July 2006: “Gamma interferon is potentially very useful in the sense that it will pick up the disease more easily, it is more sensitive to the detection of the disease ... the first thing that our vets are considering is is there a way of making it more widespread, in terms of the number of times it’s used for testing ... gamma interferon might be the major test in the future’[23].
64. The value of the gamma interferon test should not be underestimated. Between 1 January and 31 July 2007, 18.3% of the cattle tested with gamma interferon in Wales were positive to the test. This resulted in the removal of more than 250 dangerous contacts that would otherwise have remained in the herd to infect other cattle. Yet as of 31 July 2007, Defra and the Welsh Assembly Government were still well short of the target of 50,000 cattle due to be subject to gamma interferon this year.
65. It is not clear why the implementation of gamma interferon is not taking place as rapidly as it should. Badger Trust Cymru would welcome an assessment of the slow progress on this front by the Rural Development Sub-Committee. One problem is thought to be the lack of laboratory facilities to rapidly process the blood samples. Badger Trust Cymru therefore believes that the Welsh Assembly Government must establish a suitable infrastructure for testing blood samples.
66. Finally, Badger Trust Cymru believes that bovine TB will only be effectively controlled and reduced if the current infrastructure for dealing with it is subject to reform. The ISG has already suggested that removing the 4% of herds that currently consume more than 50% of the TB testing effort, thus releasing funds, could save resources.
67. In addition, we believe that lay personnel would be able to deliver the administrative functions of bovine TB control more cost-effectively than state vets. We have already cited the example of epidemiological evidence gathering. Other key functions that could be dealt with by administrative, lay personnel rather than qualified vets include:
  - i. Organising the removal of test-positive cattle from farms – something which farmers believe is taking place too slowly;
  - ii. Organising the valuation of cattle and compensation, to ensure fairness for both farmers and tax payers;
  - iii. Undertaking detailed checks of farm records and the British Cattle Movement Service, to ensure compliance with the relevant legislation (this task currently falls to Trading Standards Officers, but often in the wake of reports of possible non-compliance by state vets).

## **E. A commentary on the ISG's Final Report**

68. Badger Trust Cymru welcomes the final report of the ISG. It constitutes, for the first time, a sound scientific and holistic review of the evidence for the causes and spread of bovine TB. Its conclusions are based on the most robust dataset on bovine TB ever compiled in the UK (or, for that matter, Ireland). In contrast to Ireland, the data is readily accessible and open to further analysis by interested parties. And, again in contrast to research in Ireland, the results have been published in the world's leading, multi-disciplined journals.
69. Farming groups have argued that more intensive culling and / or culling over very large areas (ideally with some 'hard' boundary) would make badger culling feasible. Badger Trust Cymru notes that the ISG rules out these options[24, 10.12-10.24] for scientific, practical and economic reasons. We also note that farming groups have failed to make an economic case for such a strategy; they have not made clear how it could be delivered in practice with humaneness and rigour. Nor have they made clear how the huge range of practical problems, such as limited access to land, could be addressed. We respectfully suggest that the RDSC might seek answers to these fundamental questions when it takes further evidence from the farming groups.
70. Badger Trust Cymru rejects claims by the Farmers Union for Wales (and, it is alleged, by Lord Rooker) 'that the ISG has gone outside its remit'[13] with the cost-benefit analysis in its report. A detailed examination of the ISG's minutes confirms that effective cost-benefit analysis (CBA) has long been part of the ISG's remit. Ministers were kept fully informed of progress on this front through the ISG's regular reports. The ISG's work on cost-benefit analysis was detailed at some length in 2000, in the ISG's second report to Ministers[25].
71. Badger Trust Cymru notes tensions between Defra and the ISG over the issue of cost-benefit analysis. Although Defra was well aware of the ISG's work on this front, it nevertheless pursued its own CBA (Research Project SE3117) and 'the project was to proceed regardless of any scientific review procedure and [Prof McInerny, the ISG economist] considered this an abuse of the system. The [ISG] Chairman agreed'.
72. Badger Trust Cymru is dismayed by the Farmers Union for Wales shameful attempt to discredit the ISG by suggesting that, in completing the cost-benefit analysis, the ISG had some kind of hidden 'motive'. The National Farmers Union pursued a similar agenda against the ISG in presenting its evidence to the Environment, Food and Rural Affairs Select Committee. Badger Trust Cymru urges the Rural Development Sub-Committee to censure the farming unions for this behaviour.
73. NFU Cymru has complained that the ISG undertook a 'partial' cost-benefit analysis, in focusing only on badger culling and not on the costs of cattle controls.
74. Badger Trust Cymru points out that badgers are a public good. The public response to consultations on badger culling has shown that they are highly valued by the public. It was essential that the ISG

considered the cost-benefits of badger culling. In contrast, cattle are a private good. The cost-benefit analysis for protecting this private asset falls to the owners, the farmers, although inevitably Government has an interest in this cost benefit analysis since bovine TB is a zoonosis and since taxpayers are currently subsidising the private economic interests of farmers through compensation for TB losses.

75. NFU Cymru has suggested that the ISG should have considered ‘the economic, social and ecological cost if cattle farming were to be made unviable in some areas of the country’[26]. This a classic example of muddled thinking from NFU Cymru, in which a range of private and public goods are lumped together and treated as one. It suggests that NFU Cymru continues to believe that the cost of addressing bovine TB is an issue for the public purse rather than for the industry. In fact, the viability of parts of the livestock industry is more significantly influenced by the shift away from production subsidies in a global marketplace where economies of scale will inevitably squeeze smaller producers out.
76. Badger Trust Cymru believes that the Welsh Assembly Government needs to make it clear where it feels the responsibility for controlling bovine TB lays. Significant global forces are changing the structure of the beef and dairy industry and the Assembly must avoid falling into the trap of confusing these global shifts with the impacts of a disease that affects a relatively small proportion of herds. Given that tax payers are currently subsidising the livestock industry with compensation for a disease which could be 70% eliminated if farmers agreed to participate in effective testing regimes, deciding who should pay is an issue of critical importance.
77. Badger Trust Cymru makes the following observations: 70% of the bovine TB problem is attributed to cattle-cattle transmission; cattle infect badgers, a protected species, with bovine TB in the first place; public health is protected by the disposal of milk from reactors, by pasteurisation and by cooking meat properly. Therefore, the cattle-based benefits of bovine TB control are effectively a ‘private good’ and the economic responsibility of farmers, who are the primary beneficiaries. But since taxpayers are delivering compensation, the Welsh Assembly Government needs to take responsibility for taxpayers by compelling farmers to comply with a stricter testing regime.
78. It has been suggested by some farming lobbyists that placing the economic responsibility of bovine TB control on farmers would destroy the industry. Badger Trust Cymru observes that livestock auctioneers claimed that pre-movement testing would have a similar effect and this was clearly wrong.
79. Badger Trust Cymru is also concerned at the limitations of the ISG’s cost-benefit analysis, but for different reasons. We note that farming lobbyists are obsessed only with the cost-benefits of badger culling. No consideration is given to the cost-benefits of other possible measures that would minimise the risk of bovine TB transmission from cattle to badgers, and back again.

80. The ISG's final report notes that more than 90% of bovine TB-infected cattle present with pathology that 'implies that such infections are acquired as a consequence of close contact with other animals (cattle or wildlife)'. The ISG also concludes that the pathology of bovine TB in badgers also 'suggests that most infections are acquired via the respiratory route'[24].
81. In the field, there is little opportunity for close contact between cattle and badgers: badgers rarely approach within four metres of cattle. In farm buildings, however, CCTV footage has now shown that badgers come into very close contact with cattle when foraging in cattle feed.
82. Badger Trust Cymru finds it extraordinary that no-one in either the farming community or in Government has yet produced a cost-benefit analysis of keeping badgers out of farm buildings. We suggest that before the Welsh Assembly Government even considers badger culling, it funds a case control study of preventing badger access to farm buildings, feed stores, cattle sheds and troughs, to see what effects are achieved in minimising bovine TB transmission between cattle and badgers. For minimal investment – by the taxpayer, if the Welsh Assembly Government deems it worthwhile – it is possible that the majority of the small amount of negative feedback from badgers could be eliminated in this way.

## **F. A commentary on the implementation of the EPC Committee's recommendations**

83. Badger Trust Cymru welcomed the bulk of the EPC Committee's inquiry, published in August 2004. We make the following observations on the recommendations and progress in implementing them.
84. *EPCC Recommendation 1: That the Welsh Assembly Government takes immediate action to tackle Bovine TB in Wales. Wales' approach to tackling TB should be holistic and pragmatic involving all aspects associated with the spread of the disease. Measures should be developed in partnership with all stakeholder groups and based on current scientific knowledge.*
85. Badger Trust Cymru particularly welcomed the commitment to basing policy on scientific knowledge and the fact that the Welsh Assembly Government did not implement badger culling before the publication of the ISG's final report, despite substantial political pressure to do so.
86. With regard to addressing 'all aspects associated with the spread of the disease', we once again recommend a case-controlled study to assess the benefits arising from preventing badger access to farm buildings etc.
87. With regard to specific recommendations:
88. 'Implementation of pre-movement testing across Wales, with cattle sale dependent on a valid pre-movement testing certificate.' We welcome the implementation of pre-movement testing, but it is not clear whether cattle sales are dependent on a valid pre-movement testing certificate. Badger

Trust Cymru would welcome an assessment by the RDSC as to whether pre-movement testing is being robustly policed.

89. 'Increase the frequency of cattle testing in clean parishes from every four years to every two years.' Badger Trust Cymru, in line with many representatives of the farming industry, believes that cattle across Wales should be tested annually.
90. 'Introduce the use of the gamma interferon test for all herd breakdowns to ensure diseased cattle are identified and removed as soon as possible.' Badger Trust Cymru fully supports this measure but is concerned that gamma interferon is being used on too limited a basis at present.
91. 'Ensure that TB99 forms are completed for all herd breakdowns.' The Disease Report Form has superseded TB99. Given the EU's concerns about the poor use to which the gathered data is put, Badger Trust Cymru would like to see this role transferred to a fully independent lay-staffed body, overseen by independent scientists. The data should be gathered and stored digitally, thus facilitating effective analysis.
92. 'Ensure that the recommendations of the Independent Husbandry Panel are implemented on farms.' We welcome better husbandry in principle but we are concerned at the lack of scientific evidence supporting some of the panel's recommendations. In particular, we feel that a case control study of the benefits of preventing badger access to farm buildings etc should be carried out as soon as possible.
93. 'Collect and test wildlife killed in Road Traffic Accidents (RTAs) outside hotspot areas.' Badgers and deer can act as sentinels of emerging bovine TB in cattle herds. However, we believe that the collection of RTAs is a less efficient method of detecting emerging hotspots than annual TB testing and improved slaughterhouse surveillance. Badger Trust Cymru therefore considers that the collection and testing of RTAs is of little benefit.
94. 'Introduce a dedicated TB helpline or TB information packs to ensure help is available for farmers to deal with the stress associated with TB breakdowns and provide advice and guidance on TB control measures.' Badger Trust Cymru fully supports this idea in principle, but we suggest that this is a service that could and should be provided by the farming unions. Advice on bovine TB control measures is readily available online.
95. *EPCC Recommendation 2: That the Welsh Assembly Government establishes an 'Intensive Treatment Area' within a hotspot area in Wales that has experienced prolonged problems with TB.*
96. Badger Trust Cymru welcomes the principle of 'intensive treatment' but believes that the principle should be applied across Wales on the basis of 'prevention is better than cure', using the measures advocated in Recommendation 1.
97. However, we strongly reject the proposal that: 'If investigations find that the cause of the breakdown is not due to cattle to cattle transfer, an investigation of major species of wildlife known to carry TB



should be undertaken within a 2km radius of the breakdown. Wildlife that carry and transmit TB found to show signs of the disease should be removed.’

98. We oppose this measure because, as discussed, Animal Health lacks the epidemiological evidence required to make robust conclusions about the causes of bovine TB spread and persistence. In addition, the ISG concludes that killing badgers can make no meaningful contribution to the control of bovine TB. The body of evidence makes it clear that cattle are the index vectors of bovine TB and that is where attention should be focused.
99. Moreover, reactive culling has been shown clearly to increase the incidence of bovine TB by 27%. It has been argued by farming lobby groups and the Conservative Party[27] that the problem of perturbation could be reduced through the total annihilation of ‘sick badgers’ and / or ‘infected setts’. This strategy has been rejected by the ISG in a closely argued discussion ([24], 10.39-10.43).
100. Badger Trust Cymru also rejects the suggestion that ‘A level of prevalence / rate of transmission in wildlife should be agreed upon’. The phrase itself lacks a clearly defined objective. It does not distinguish between wild animals that are infected and those that are infectious. It fails to take into account that bovine TB is dynamic in both time and space, so prevalence will vary cyclically. Most importantly, there is no known correlation between prevalence and transmission, not least because transmission routes are not understood.
101. We also wish to emphasise that the intensive treatment strategy, as originally proposed, does not constitute valid scientific research. The strategy lacks statistical rigour and is meaningless in terms of its contribution to determining future policy.
102. Regarding the detail of the recommendation, we make the following observations:
103. *‘Potentially infected areas should be cleaned as well as practically possible to reduce the risk of transmission of TB to other wildlife.’* Badger Trust Cymru fully supports this proposal, but urges caution over the definition of what is ‘practical’. Rather, we suggest that a cross-compliance mechanism should be enforced, in which farmers are entitled to compensation only on the basis of achieving a minimum standard of disinfection in farm buildings, yards, feed and drink troughs, etc. The cross-compliance could be a sliding scale in the future, but this is not practical at present since the benefits of specific measures have not been scientifically assessed. Badger Trust Cymru is not aware that disinfection is properly enforced at present and, again, this could be addressed by lay staff rather than qualified state vets.
104. *‘On farm biosecurity should be improved with the assistance of veterinary officers, Divisional Veterinary Managers, and others.’* Badger Trust Cymru supports this objective in principle, but we warn that many state vets are too wedded to blaming badgers to provide reliable, science-based advice to farmers. Instead, we propose that advice on biosecurity and husbandry should be provided by an independent, scientific advisory panel.

105. *'The progress of breakdowns on farms should be closely monitored.'* Badger Trust Cymru re-emphasises the need for independent data gathering by trained lay personnel from a specialist Epidemiology Research Unit. At present, Badger Trust Cymru believes that the archaic IT systems at Animal Health make effective monitoring impossible.
106. *EPCC Recommendation 3: That the Welsh Assembly Government incrementally rolls-out intensive treatment to other areas of Wales if, following evaluation, it proves useful in controlling TB. Sharing of costs of funding between the farming industry and the Welsh Assembly Government should be considered.*
107. Badger Trust Cymru observes that the take-up of biosecurity and husbandry advice has been limited to 70 per cent of farmers. Unfortunately, the benefits or otherwise of intensive treatment cannot be evaluated in a statistically meaningful way: the treatment has not been applied as a scientifically structured trial although, potentially, it might be possible to extrapolate a limited case-control study from the work achieved so far.
108. On the issue of cost sharing, Badger Trust Cymru again stresses that badger culling must not be offered as a quid pro quo in return for farmers taking on more of the cost of cattle-based TB control measures. There is no ethical or scientific case for 'buying' the cooperation of farmers by killing badgers, in order to control a disease that imposes a burden on taxpayers through compensation.
109. *EPCC Recommendation 4: That the Welsh Assembly Government establishes a Wales TB Action Group to deliver short-term measures to tackle TB in cattle and to investigate longer-term measure. Membership of the Action Group should be small and made up of those able to implement decisions, but representative of stakeholders. The Wales TB Action Group should be accountable to the Minister, but with a specific remit for action. Regular reports should be made to the Minister and publicised to all stakeholders.*
110. Badger Trust Cymru has kept a watching brief on the TBAG. Whilst there have been some interesting discussions, progress in actually delivering many of the ideas proposed by the EPCC has been negligible. In many ways, TBAG has become rather like the TB Forum once operated by Defra, in which the case for badger culling is repeatedly made by farming lobbyists but there is little progress on discussing other issues. For example:
- i. *Investigating the establishment of laboratory, testing and research facilities in Wales – no progress at all.*
  - ii. *Considering support for farmers, such as an increased role for veterinary officers in advising on biosecurity risks – limited progress.*
  - iii. *Consulting on introducing an industry-levy to pay for TB testing and compensation – no progress at all.*

- iv. *Investigating other longer-term issues, such as the cattle valuation process* – no progress at all.

## **G. A note on the Republic of Ireland**

111. In May 2007, the Badger Trust, Badger Trust Cymru and Badgerwatch Ireland published a detailed investigation into badger culling to control bovine TB in the Republic of Ireland[28]. The report revealed the horrific scale of culling in Eire. Approximately 6,000 snares are set every night yet badgers are now so persecuted that barely 6,000 are caught each year, despite 1.3 million snaring opportunities per annum.
112. Bovine TB affects twice as many cattle, proportionately, in the Republic of Ireland as it does in Great Britain. In Ireland, 0.4% of the national herd was slaughtered with bovine TB in 2006, compared to 0.2% in Great Britain.
113. Bovine TB reached the highest levels ever recorded in Ireland whilst badger culling was taking place, but when the Republic ceased the pre-movement testing of cattle. Moreover, the subsequent decline in bovine TB (which is the focus of so much farming union propaganda) occurred not as a result of a change in badger culling policy, but as a result of an increased focus on TB in cattle. A similar decline was achieved in Northern Ireland, in just one year, by better cattle testing, the tighter imposition of movement restrictions and other cattle-based measures[29]. There is no badger culling policy in Northern Ireland.
114. The absence of any correlation between badger culling and reactor levels is clear from Badger Trust Cymru's graph in Appendix B. In contrast, the graph illustrates how cattle-based measures have had an influence on the disease.
115. The findings of the RBCT have consequently been rather embarrassing for the badger culling lobby in Ireland. The findings strongly suggest that Ireland's policy of snaring badgers within two kilometres of any TB-affected farm has increased the risk of TB breakdowns in the surrounding area through the perturbation effect.
116. Indeed, so disrupted is Ireland's persecuted badger population that there is no correlation between the strains of TB found in cattle and those found in badgers whether they were killed two or even five kilometres away from the farm[30]. (This, of course, makes a complete mockery of Ireland's policy of culling badgers within two kilometres of a breakdown herd.)
117. The real cause of the very high levels of bovine TB in Ireland is more readily explained by what, in Ireland, is called 'bed and breakfasting'. This means that cattle are moved around very widely to different grazing lots owned by other farmers. The Irish Government has been attempting to get a grip on this practice[31]. But disease risks are also increased in Ireland by the highly

fragmented nature of farms, with herds being grazed on a multitude of discontinuous lots with ample opportunity for nose-to-nose contact with other herds[32]. As is the case for Animal Health in Britain, an absence of data on this behaviour means that state vets in Ireland have no idea what contribution it makes to the spread and persistence of TB. Under such circumstances, it is easier to blame badgers than to dare to tackle inherent problems in a politically powerful industry.

118. Interestingly, Ireland's badger killing vets have recently challenged the findings of the RBCT. But they have not followed protocol by challenging the findings in *Nature*, the leading, multi-disciplinary journal where the findings were first published[1]. Instead, the challenge has been made in the *Veterinary Record* in a mere 'opinion' piece[33].
119. Should the Rural Development Sub-Committee take evidence from badger killing vets in Ireland, we encourage the Sub-Committee to ask whether the vets chose not to attempt to publish their case in *Nature* or whether they submitted their case to *Nature*'s intensive peer-review process – and it was rejected. The answer, we suggest, will be indicative of the quality of bovine TB research in the Republic of Ireland.

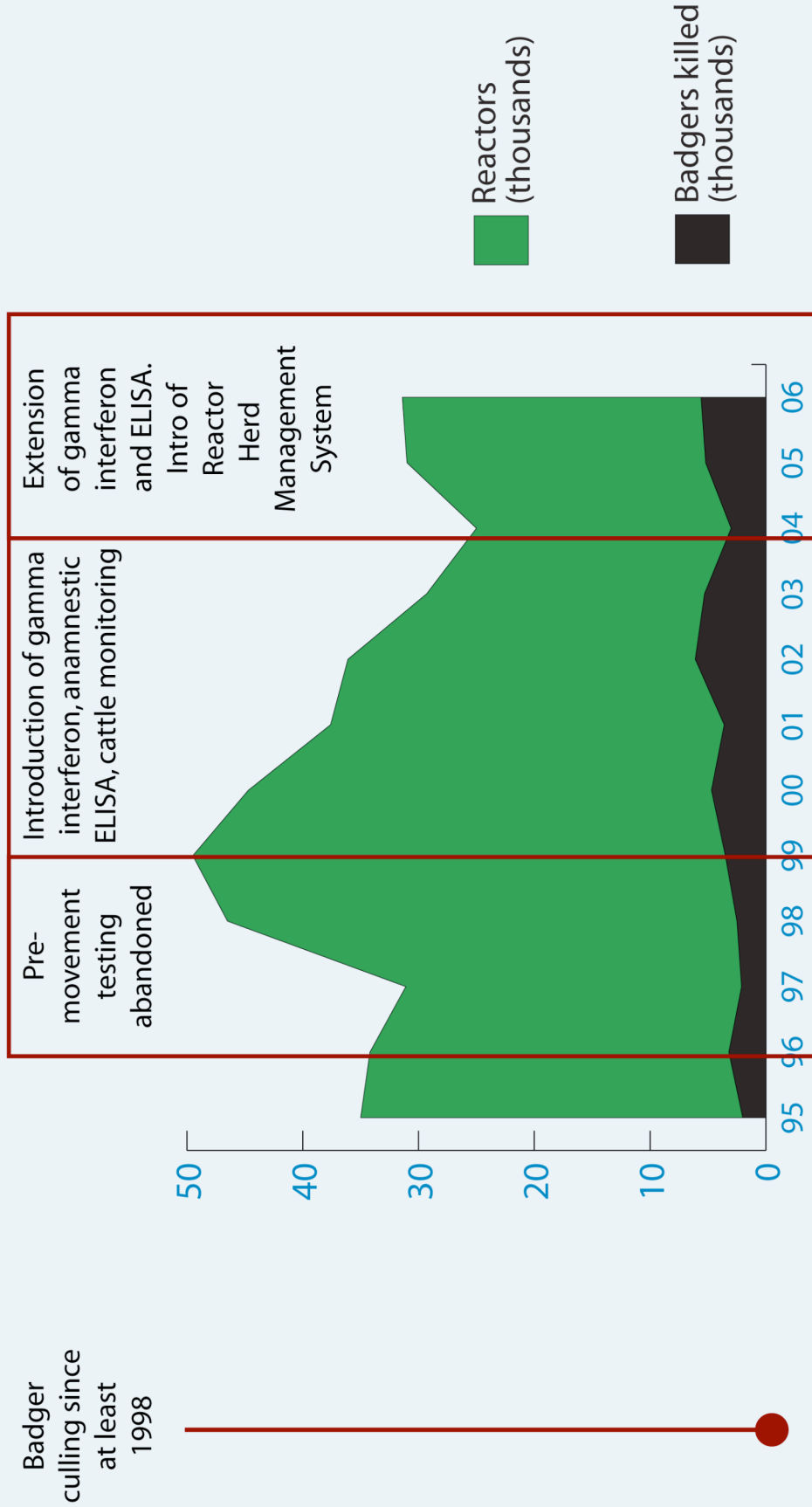
## Appendix A: TB data collection by state vets

1. In the wake of their analysis of TB49 data gathering[8], the VLA researchers made two key recommendations:
2. '(i) If epidemiological data collection becomes the primary goal of the breakdown investigation there will be the need for continual monitoring of the completed forms to ensure high quality data is obtained.
3. '(ii) The two goals of widespread data collection and prompt management of the incident may turn out to be competing. To avoid this it is recommended that the TB99 [the anticipated successor to TB49] adopt a modular approach in which the incident management section of the form is separated from the epidemiological data collection section.'
4. TB99 was indeed created in a modular fashion. Its fate, however, illustrates why state vets are so poorly informed. TB99 was employed from 1999 to January 2005. The Independent Scientific Group (ISG) attempted to ensure that TB99 provided adequate information for epidemiological analysis. But this proved difficult, as the draft document moved back and forth between the ISG and state vets and as it was tested in partnership with farmers.
5. By February 1999, the final draft of TB99 had already moved 'away from focusing on epidemiological groups and back to individual animals'[34], thus weakening its epidemiological purpose. An outbreak of Classical Swine Fever soon resulted in a serious backlog of TB99 data, whilst FMD resulted in no TB99 forms being completed at all and the entire data collection exercise became 'fragile'
6. By March 2002, it became clear that Part 2 of the TB99 form – the part focusing on husbandry – was not being completed properly by veterinary officers. By July 2002, the ISG was expressing concern at Defra's failure to ensure the collection of adequate numbers of 'controls'. The original aim had been to apply TB99 to every outbreak farm within the badger culling trial areas and also to apply TB99 to three control farms (with no breakdown) for each breakdown farm. But the failure to gather enough control data began to make the whole data gathering exercise 'pointless'[34].
7. An analysis of the minutes of the ISG suggests that Defra and the State Veterinary Service regarded the protection of human and animal health as a greater priority than research, missing the point that the former could not be achieved without evidence from the latter.
8. ADAS was contracted to complete TB99s, at a cost of £280 each. But the whole operation became farcical, as state vets who had failed to complete the forms in the first place then complained that they had to spend time checking the accuracy of forms completed by ADAS. Meanwhile, farmers – who were ultimately to benefit from the research that taxpayers were funding – complained that completing the form with a vet was too 'onerous'. An independent audit of the data left the statistician who was supposed to analyse it feeling 'depressed'[34].

9. In July 2004, the SVS said that statutory duties meant that it would not be able to complete adequate TB99 forms for that year. In January 2005, TB99 was abandoned in favour of a new Disease Report Form, which lacks an epidemiological objective. The epidemiological elements of TB99 were instead replaced with a simplified Case Control Study (CCS2005) which was to be a single year study[35]. Only in 2005, using this CCS, did state vets gather adequate cases and controls to inform epidemiological analysis. This was due to ‘a simpler form to complete, well-organised project management and the trouble-shooting abilities of [the SVS representative on the study group]’.
10. At the time of writing, Animal Health continues to use the Disease Report Form to gather evidence during a TB breakdown. Contrary to the recommendations of the VLA, however, it does not use a modular approach to provide epidemiological evidence. Instead, the focus is supposedly on controlling the specific incident.
11. Yet the methodology is inadequate even for this purpose. In 2005, EU inspectors reported that the data is ‘not evaluated at local or central level in order to ensure that the decision concerning [the] source of infection / disease spread was correctly done and consequently appropriate measures would be taken’[36], as described in Recommendation (i) above.

## Appendix B – Badger Culling in Ireland

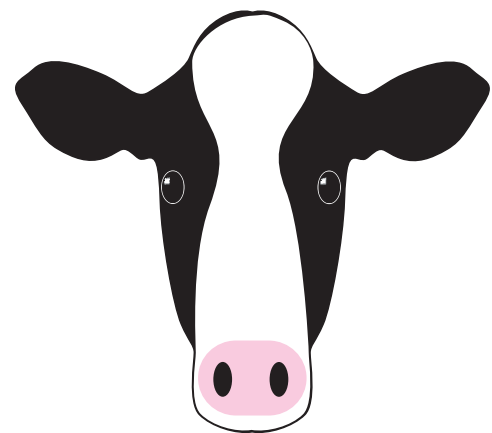
### Bovine TB and badger culling in Ireland



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FACT: In 2005-6, state vets spent between 11 and 15 working years completing paper forms on new bovine TB outbreaks. The information has never been reviewed, entered onto a database or analysed.

(p.2, col.2)

## Over-confident, under-resourced: the role of Animal Health (formerly the State Veterinary Service) in bovine TB control

### 1. Summary

- (i) In this report, the Badger Trust has used the Freedom of Information Act to assess two claims:
  - that officers of Animal Health (formerly the State Veterinary Service) “know what the [TB] problem is but can do nothing about it”<sup>[1]</sup>; and
  - that officers of Animal Health have what the National Farmers Union (NFU) describes as the “expertise [for] designing effective, targeted [badger] culling strategies” and should therefore lead a badger cull “for public confidence to be maintained”<sup>[2]</sup>.
- (ii) We show that state vets do not collect sufficient evidence to explain local or regional bovine TB. Furthermore, the limited data that is gathered is held on paper, not data-processed and never statistically analysed.
- (iii) We show that state vets rely on untested farmer claims about where livestock have been held on farms with multiple land parcels. Consequently, state vets cannot say with any authority where a TB outbreak was acquired. This, in turn, means that it would be impossible for state vets to determine where badgers should be killed, in the unlikely event of the Government approving such a policy.
- (iv) We show that Animal Health does not hold records on badgers collected by state vets from farms for post mortem examination.
- (v) We reveal a wide range of failings in the bovine TB testing programme, identified by the European Union in 2005. Many of these allow the possibility of undetected cattle-to-cattle, herd-to-herd transmission of TB.

- (vi) We can find no evidence that state vets are kept up-to-date with new scientific research on bovine TB. We show that even the Introduction to the online bovine TB practise manual has not been updated for a decade.

### 2. Background

In January 2005, Gloucestershire’s Divisonal Veterinary Manager (DVM), Chris Williamson, told an NFU meeting that a badger cull would halt the spread of bovine TB<sup>[3]</sup>.

In 2007, Ben Bennett, DVM for Devon, claimed that “cow-to-cow spread [of bovine TB] has not been a common occurrence over the years”<sup>[4]</sup>.

And last week, an un-named DVM attacked the Government’s current entire TB policy. He claimed that “there is no question that badgers and to a certain extent deer are the main source of [TB] infection”<sup>[1]</sup>. State vets also occasionally write to farmers blaming a “non-bovine source” as the cause of certain TB outbreaks.

These are bold claims and, as professionals, state vets carry authority. But just as the public has discovered that medical and legal professionals are fallible, the same can be true of vets. Here, we show that the claims made by state vets are not the product of sound scientific research based on firm statistical evidence. In fact, the opposite is true.

The Badger Trust has found that Animal Health has no robust, systematic method for assessing the causes of bovine TB outbreaks. State vets cannot speak with authority on the specific cause of any particular bovine TB breakdown. Nor can state vets claim, with authority, that any particular bovine TB control strategy

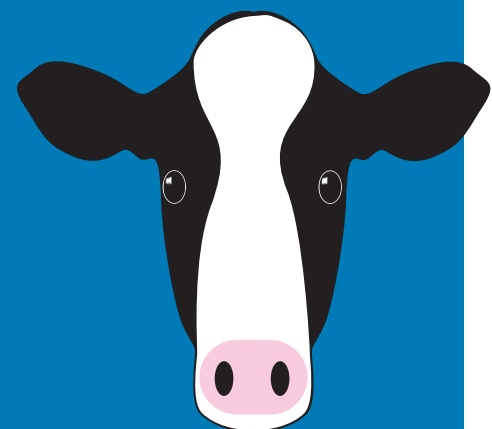
Over-  
confident  
Under-  
resourced

the role of  
Animal Health  
(formerly, the State  
Veterinary Service)  
in bovine TB control  
June 2007



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London SW11 3EP  
www.badgertrust.org.uk  
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FACT: Animal Health admits that Divisional Veterinary Manager claims that TB spread by cattle “has not been a common occurrence” was based solely on anecdote.  
(p.2., col.3)

will be more effective than another, because they lack the scientific evidence.

Instead, the claims of state vets are based on anecdote. It would not be uncharitable to describe the majority of their claims as “guesswork”. They are often responsible for disease management in thousands of herds, yet at best they have a very blurred snapshot of on-farm activity.

Despite this vague grasp of the dynamics of this very complex disease, state vets have very wide-ranging powers of discretion over many elements of bovine TB control. These include pre-movement testing exemptions, parish testing intervals and whether or not specific kinds of stock or individual herds should be tested at all.

### 3. Analysis

#### Blurred vision

The Badger Trust contends that the role of Divisional Veterinary Managers is administrative, not scientific. It might be imagined that Divisional Veterinary Managers (DVMs) have a clear picture of disease dynamics in their given area. But the challenge is vast. Devon, for example, has more than 5,500 herds of cattle. Bovine TB is dynamic in both time and space. To even begin to model the dynamics of bovine TB in Devon would require a vast amount of data and very robust and extensive statistical analysis.

The NFU claims that Animal Health has the “expertise [for] designing effective, targeted [badger] culling strategies” and should therefore lead the cull “for public confidence to be maintained”<sup>[2]</sup>. The idea is preposterous.

Research by the Badger Trust has revealed that DVMs have none of the data required to have even a basic understanding of the dynamics of bovine TB in their regions.

#### Wasted paper

Since 1 January 2005, a TB Disease Report Form (DRF) has been used by Veterinary Officers from Animal Health “to collect the information required for dealing with each new TB incident”<sup>[5]</sup>. According to Animal Health Minister, Ben Bradshaw, each form takes three to four hours to complete.

In 2005 and 2006, DRFs will be completed for 7,103 new incidents. That equates to staff effort totalling:

- 21,309-28,412 hours; or
- 2,663-3,552 eight-hour working days; or
- 11-15 working years.

This phenomenal amount of data could provide DVMs with some of the evidence required to make evidence-based decisions about dealing with bovine TB in their regions. But incredibly, Mr Bradshaw admits that: “the majority of the information captured is not normally entered onto an electronic database”<sup>[6]</sup>. Indeed, Animal Health cannot show that a single analysis of DRFs has ever been undertaken.

The paper chase goes back years. Between 1999 and 2004, the TB99 form was completed. Before that, came the TB49 form. The TB49 protocol for attributing the cause of a herd breakdown was criticised by Professor Sir John Krebs, in 1997, for being: “subjective and not always adequately supported by the evidence”<sup>[7]</sup>. At that time, state vets were attributing 80-90 per cent of TB outbreaks to badgers.

These forms are held for “up to 25 years” in filing cabinets. Thus, on behalf of the tax payer, the State Veterinary Service / Animal Health has gathered tens of thousands of forms, loaded with potentially useful data that could be used to fight bovine TB. But it is not being used.

#### Claims without evidence

The DRF runs to 13 pages and records information about a farm’s “Prevention and control measures” in Section 7. Nine of the 13 questions about prevention and control relate to badgers.

But the document also asks whether biosecurity has been discussed with the farmer, whether the herd is closed (although this definition is only limited to “all replacements home bred”), whether purchased cattle are privately TB tested and whether there is “perimeter double fencing to prevent nose to nose contact” with other herds. These are some, but by no means all, of the cattle-to-cattle routes through which bovine TB might enter a herd.

The Badger Trust decided to test the usefulness of this data. Devon’s DVM, Ben Bennett, recently claimed that “cow-to-cow spread [of bovine TB] has not been a common occurrence over the years”<sup>[4]</sup>.

With more than 5,500 herds to watch over, it is unlikely that Mr Bennett has a detailed picture of cattle movements between individual farms and their holdings, as well as to markets and elsewhere, in his head. Surely, for such a claim to be valid, there would be some underlying statistical evidence?

Under the Freedom of Information Act, we asked Animal Health on what evidence Mr Bennett’s claim was based. Animal Health advised us that Mr Bennett’s statement was: “based on anecdotal evidence provided by veterinary staff in the Exeter office, based on their experiences over the last few years.”<sup>[4]</sup>

We also asked what proportion of newly-affected farms in Devon had: bought-in cattle; moved cattle on or off to markets, shows and other events; double-fenced the premises; and suffered livestock break-outs or break-ins. All

of these are potential routes of cattle to cattle transmission with other herds.

Animal Health replied that, to answer our questions about the 2,365 new herd breakdowns that have occurred between 1998 and 2006 “would incur costs of 315 man-days”. Thus, just to provide the raw data about just some of the risks of cattle-to-cattle transmission in Devon would have taken 1.3 working years.

So, statistical evidence to support Mr Bennett’s claim has never been processed. His claim is based on anecdote and is unsupported by fact.

As EU inspectors observed: “[epidemiological] investigations are not evaluated at local or central level in order to ensure that the decision concerning [the] source of infection / disease spread was correctly done and consequently appropriate measures would be taken.<sup>[8]</sup>”

### **Badgers? What badgers?**

Recently, an un-named Divisional Veterinary Manager launched an all-out assault on Government TB policy, attacking everything from pre-movement testing and valuations for livestock to the absence of a badger culling strategy<sup>[1]</sup>.

He claimed: “in our endemic area and many others there is no question that badgers and to a certain extent deer are the main source of infection. It is extremely frustrating that we know what the problem is but can do nothing about it.”

So, how much do state vets know about bovine TB in badgers? It is not unusual for farmers to tell journalists that their bovine TB outbreak followed the discovery of a dead badger on their farm. Typically, the badger in question has long since disappeared. However, farmers are encouraged to report dead badgers to Animal Health and state vets are advised, through

Appendix W1 of the veterinary procedures intranet, on how to collect badger carcasses for post-mortem examination.

Given the conviction amongst farmers and state vets alike, that badgers are the primary agents in the spread of bovine TB, one might expect Divisional Veterinary Managers to keep careful records of infected badgers found in their areas.

In March 2007, the Badger Trust asked Animal Health how it manages data on dead badgers found on farms. We also asked: how many dead badgers had been reported by farmers between 1998 and 2006; how many had been collected and submitted for TB post-mortem and culture; and how many were infected with bovine TB.

Animal Health replied that: “after a search of the data in the State Veterinary Service, we find that the information requested is not held. I have also asked our colleagues in the Defra Wildlife department who confirm that they hold no such figures. Our Agency only records statistics relating to farmed animals, and as you appreciate, badgers are not in this category. I am sorry we cannot help in this instance, nor can I suggest where you could go to obtain such figures<sup>[4]</sup>.”

So, whilst some DVMs confidently blame badgers for bovine TB infection, they have no data to support this assertion.

### **Holdings and reality**

It might be argued that state vets “know” that badgers are to blame because Section 10 of the disease report form (DRF) allows the Veterinary Officer to record the “suspected source” of each new bovine TB breakdown. The potential sources listed begin with bought-in cattle, followed by neighbouring herds, badgers

and other wildlife. But is this a systematic, epidemiological assessment? It is not.

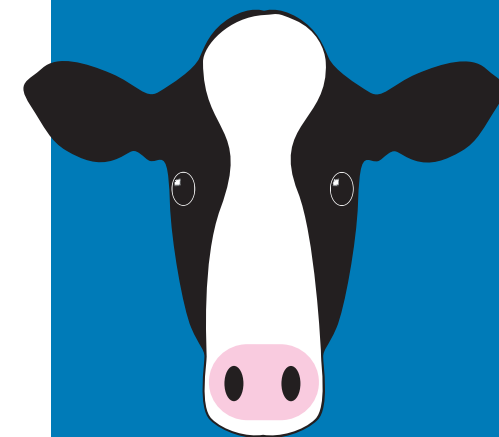
The guidance on completing the DRF contends that it is designed “to identify the herd and its location, and all related farm fragments of land” and “to classify the incident, in particular when it began, what initiated it, and to estimate the risk of residual infection”. This is ambitious. But given the bold claims of DVMs, presumably the data is robust and flawless? Think again.

In 2005, the EU published a report<sup>[8]</sup> into Britain’s TB testing regime. It identifies gaping holes in the system, through which the transmission of bovine TB between cattle from neighbouring herds is entirely feasible (see box).

Chief amongst these is the tendency for a farm to consist of multiple, non-contiguous parcels of land, often located many miles apart. The farm is registered as a single “holding”, so no movements “off” or “on” the holding are recorded by the British Cattle Movement System (BCMS) when the cattle are moved between the parcels.

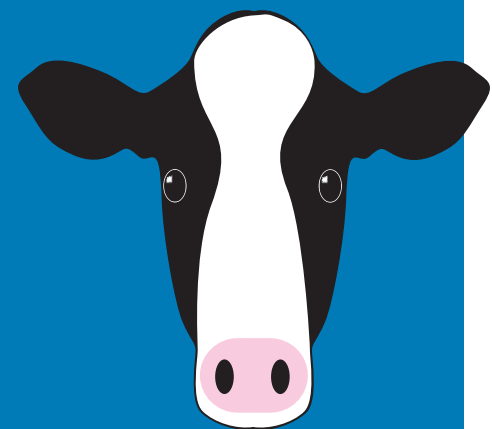
As the EU revealed: “movement of animals between those parcels are not notified to the database or recorded in the farm register<sup>[8]</sup>. State vets, as a result, have to rely on the word of the farmer as to where on the holding the cattle have been since the last test, which might have been one, two, three or even four years ago.

Multiple parcels of land in one holding can dramatically increase the potential number of contiguous herds associated with that holding. Again, you might presume that state vets would be thorough in pursuing these contiguous herds. But again, the EU found that: “in holdings with grazing parcels located a few miles away, the epidemiological investigation is carried out only in the parcels where according to information



**FACT: Disease Report Forms are not evaluated “in order to ensure that the decision concerning the source of the infection was correct and appropriate measures taken.”**

(p.3., col.1)



**FACT:** Cattle movements between parcels of land, miles apart but registered to the same holding, are not recorded in the cattle movements database or the farm register.

(p.3., col.3)

provided by the owner, reactor cattle have been during the risk period”.

Thus we have an extraordinary situation. State vets claim to have expert, local knowledge of the dynamics of bovine TB. Yet they cannot say with any certainty where any of the cattle in many TB breakdowns have been since the last test, or how many other cattle they might have come into contact with during forays to other land parcels. In short, state vets’ picture of the local dynamics of cattle movements on fragmented farms is extremely blurred and hopelessly inadequate to the task of attempting to control bovine TB.

For the NFU’s badger culling policy, this shambolic state of affairs has greater significance.

Imagine that a TB breakdown occurs on a farm with multiple parcels of land, some of which are miles away from one another. There is no way of knowing whether the farmer is telling the truth about where on the holding his livestock have been during the previous months or years and, therefore, where the infection was acquired. So, where would a badger cull start and end?

The suggestion that state vets have the “expertise [for] designing effective, targeted [badger] culling strategies” is preposterous.

Indeed, whilst the entire holding is initially placed under restriction when a bovine TB outbreak occurs, DVMs have the “discretion” to reduce the extent of the restriction, subject to a “risk assessment”. With no reliable evidence about the recent whereabouts of the affected cattle on the parcels of the holding, how can the risk assessment itself be reliable?

Animal Health is currently investing in a new IT infrastructure: “It is planned that in the future it will be possible for the SVS to electronically capture the ‘most likely source’ of

an incident.”<sup>[9]</sup>

But the Badger Trust is sceptical that a suitably systematic database will be created. The volume of supporting data needed to make identify the ‘most likely source’ is substantial.

Krebs, for example, recommended a more systematic approach to capture more information about farm management, such as: “whether there are any off premises and the stock normally move between premises” and “distribution of the group containing the reactor during the previous two years, i.e. which fields they grazed and when”<sup>[7]</sup>.

The current DRF could theoretically capture this relatively detailed information in the final manuscript completed by the state vet, but this comes after the page where s/he has already determined the likely cause of the outbreak. But there is no legal obligation on farmers to keep such records so the accuracy of the information will always be uncertain.

Furthermore, Animal Health is unlikely to invest in this data if there is a belief, within the agency, that it is not relevant.

### **Stuck in the last Millennium?**

Over the last ten years, a vast amount of new research into the epidemiology of bovine TB has been published. As a result of this scientific advice, Defra has introduced pre-movement testing for cattle and extended the use of the gamma interferon TB test for cattle. It was therefore a surprise to see a Divisional Veterinary Manager attacking science-based Government policy in *Farmers Guardian* in May<sup>[1]</sup>. Did this DVM have information to which the Government is not privileged? How up-to-date and well-informed are staff in Animal Health?

The evidence is not promising. The EU noted, in 2005, that: “A system is not in place to

monitor the work performed by Animal Health Divisional Offices’ staff concerning the [TB] eradication programme.”<sup>[8]</sup>

This lack of supervision is a worry, but perhaps not surprising. Continuous Professional Development (CPD) has been central to many professions, such as medicine and law, for many years. However, the Royal College of Veterinary Surgeons (RCVS) only made the promotion of CPD compulsory for vets in November 2006<sup>[11]</sup>.

In January 2007, there were 323 vets employed by the State Veterinary Service / Animal Health and registered with the RCVS<sup>[12]</sup>. Only this year is Animal Health implementing its first formal programme of CPD for state vets. CPD has never been centrally recorded by Animal Health<sup>[12]</sup>, so there is no data on the extent of lifelong training undertaken by state vets, many of whom have been with the service for decades.

The Badger Trust asked Animal Health what written information, formal advice and / or training documents had been provided to DVMs, on the specific subject of bovine TB, between 1998 and 2006. Animal Health replied that: “this information is contained in Viper (Veterinary Instructions, Procedures and Emergency Routines), Chapter 23”, and provided a copy of the relevant intranet pages and associated documents<sup>[13]</sup>.

In this information, we had expected to find regular bulletins for DVMs, outlining new findings from the Randomised Badger Culling Trial (RBCT) and the associated research on bovine TB epidemiology, cattle-to-cattle transmission and so on. After all, disease control depends on sound science rather than intuition, and there would surely be a system in place to keep DVMs up-to-date.

Instead, Chapter 23 is essentially a practise

## Failings in the British TB eradication programme – as reported by EU inspectors<sup>[8]</sup>

“... shortcomings were noted concerning the approval and supervision of the work performed by private veterinarians and concerning the audits on the work performed by [state vets] ... inspections on the spot to supervise the work performed by [private vets] are not carried out ...

“... restriction on movements [from restricted farms] are not recorded in [the British Cattle Movement System] and as a result animals moving while in restriction are not flagged by the system ...

“... different parcels of land located a few miles apart can be considered as one holding, registered with the same official number, and movement of animals between those parcels are not notified to the database or recorded in the farm register ...

“... on-the-spot inspections are not carried out to ensure compliance by farmers concerning the restrictions imposed on the movement of animals. Moreover, [private vets] do not control restriction of movements compliance while performing skin tuberculin tests in the restricted herds and only in the case of major discrepancies in the number of animals [are state vets] informed ...

“... shortcomings were noted on the interpretation of the follow-up tests for inconclusive animals, accuracy of skin fold measurements and withdrawal of health status ...

“... some irregularities were noted on the supervision of removal by [state vets] and isolation of inconclusive / reactor animals ...

“... in the farms visited, isolation of animals under restriction was not properly implemented ...

“... no cleaning / disinfection [of reactor cattle] was applied between isolation and the [shared] milking parlour ...

... [some shortcomings were noted in] cleaning and disinfection at farms, markets, slaughterhouses and transport vehicles for animals ...

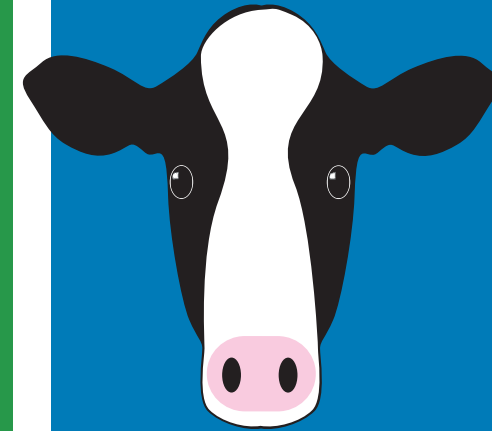
“... epidemiological investigations are routinely carried out by a veterinary officer (VO) after each confirmed bovine tuberculosis breakdown in [Officially Tuberculosis Free Herds]. However, those investigations are not evaluated at local or central level in order to ensure that the decision concerning [the] source of infection / disease spread was correctly done and consequently appropriate measures would be taken ...

“... in holdings with grazing parcels located a few miles away, the epidemiological investigation is carried out only in the parcels where according to information provided by the owner, reactor cattle have been during the risk period.

“... shortcomings were noted concerning the delivery of milk from inconclusive and reactor animals to milk establishments and in GB this milk is also fed to calves without a prior heat treatment...

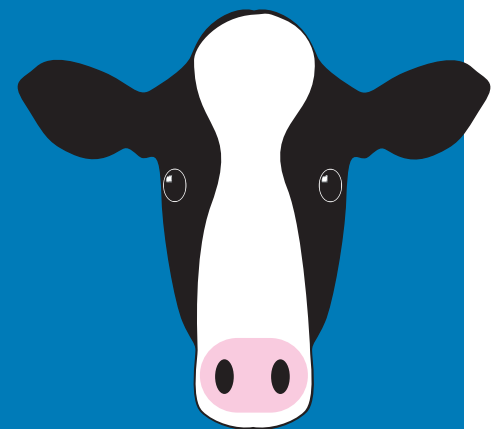
“... deductions on the [TB] compensation payment are not applied to farmers not complying with the rules and measures imposed under the [TB] eradication programme.”

*The statements above refer to Great Britain (excluding Northern Ireland). The Badger Trust has not assessed which of the criticisms here have been addressed since the report was published. The key point is to note that these problems were identified in an inspection just two years ago, when state vets were publicly blaming badgers. The Chief Veterinary Officer mentioned a number of “satisfactory” European Commission inspections in her annual report for 2005 – but not this one<sup>[10]</sup>.*



FACT: State vets cannot know, with any certainty, on which parts of the holding cattle have been grazing since the last TB test. This means they cannot ascertain where the disease was acquired.

(p.4., col.1)



FACT: The introduction to Animal Health's intranet pages on bovine TB, which summarises the recent history of research into the disease, not been updated for a decade.

(p.6., col.1)

manual with no referenced updates on new research to be found using detailed system searches. Incredibly, even the Introduction's overview of the disease, which summarises the recent history of bovine TB research, has not been updated *for a decade*<sup>[14]</sup>. It still states:

“At the time of revising this Chapter (1997), a third review is being undertaken by a team of scientists under the chairmanship of Professor Krebs. The incidence of disease in cattle has increased steadily during the last seven years, and the interim (Dunnet) strategy to control TB in badgers is widely believed to have been insufficient to prevent the relentless rise in cattle breakdowns over this period. Further action to prevent this situation worsening is considered necessary.”

It may be that Animal Health has alternative means of keeping DVMs up-to-date with important new research that would help inform their “discretionary” decisions on bovine TB. Animal Health might also run training seminars or provide funds for staff to attend training events and important briefings. However, despite our clear requests, no such evidence has been provided. Furthermore, the Badger Trust observes that very few DVMs attend the open meetings organised by the Independent Scientific Group on bovine TB.

#### 4. Conclusion

The Badger Trust concludes that Animal Health staff are over-confident about their ability to identify and manage the causes of bovine TB. They lack the raw data about on-farm activities needed to make even the most basic assumptions about the disease is spreading locally. And they lack the strategic, independent, scientific oversight needed to ensure that their data

systems and methodologies gather meaningful information for the future.

The role of Divisional Veterinary Managers is essentially administrative, not scientific. Their wide powers of discretion might even mean that the effectiveness of bovine TB control in any given area could reflect the quality of an individual's judgment when making discretionary decisions, but we cannot be sure because there has been no overall supervision of their work.

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Ireland's  
**bloody**  
shame





This is one of up to 6,000 snares set for badgers *each night* in the Republic of Ireland.

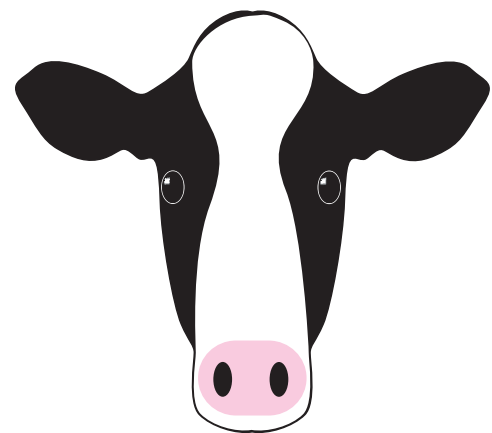
Exterminating badgers is supposed to help control bovine TB in cattle.

But so few badgers are left in Ireland, less than 6,000 are caught *each year*.

And bovine TB levels in Irish cattle are twice as high as in Great Britain, where badgers are not being killed.

(see p.2, col.2)





**FACT:** In 2006, 0.4% of Ireland's national herd was slaughtered with bovine TB, compared to 0.2% in Britain. The farming unions in Britain claim Ireland has been "successful" in controlling TB. Who are they kidding?  
(p.1, col.2)

## Ireland's bloody shame

### Summary

This is the first detailed report to reveal the appalling extent of the bloody wildlife massacre that is being executed in the Republic of Ireland.

Ireland's dairy and beef products, worth €3.6 billion in annual exports, are marketed as pure, natural and green. Tourism Ireland invites visitors to experience its "breathtaking countryside" and explore "wooded banks that shelter a wealth of wildlife"<sup>[1]</sup>.

But behind this fantasy, official figures confirm that each night up to 6,000 snares for badgers are laid across Ireland's farmland<sup>[2]</sup>. Badgers are being systematically strangled countrywide and no functioning safeguards are in place to ensure their survival.

Farming unions in Britain claim that the Republic of Ireland has been "successful" in controlling bovine TB in cattle. They have called upon the British Government's and Welsh Assembly's TB Advisory Groups (TBAGs) "to visit the Irish Republic, so as to learn from the apparently highly successful anti-TB strategy that has been implemented in that country"<sup>[3]</sup>.

NFU deputy president, Meurig Raymond, claims:

"The Irish experience highlights that to contain and eradicate bovine TB a managed wildlife cull is far more effective than pre-movement testing. A 40% reduction has been achieved in Ireland through abandoning pre-movement testing and concentrating on eliminating all vectors of the disease in wildlife."<sup>[4]</sup>

The TB Advisory Groups are due to visit Ireland in 2007. The Badger Trust and Badgerwatch Ireland, in partnership, have conducted a review of the "Irish experience", analysing more than 135 documents, reports and statements from Ireland and from Europe. In stark contrast to unreferenced claims made by the NFU and other pro-cull lobbyists, we have found that:

- Ireland's treatment of the Eurasian badger, a protected European species, is an international disgrace. So few badgers are left, they cannot possibly explain the high rates of bovine TB found in the Irish national herd. At best, the badger population is only 10% that of similar habitats in south west England. At worst, badgers are extinct in many areas. Only a fraction of the national population survives.
- Yet despite the mass extermination of badgers, bovine TB affects twice as many cattle, proportionately, in the Republic of Ireland as it does in Great Britain. In Ireland, 0.4% of the national herd was slaughtered with bovine TB in 2006, compared to 0.2% in Great Britain.
- Contrary to claims by Meurig Raymond from the NFU, TB rocketed when pre-movement TB testing was abandoned by the Republic of Ireland in 1996. The re-instatement of pre-movement testing has since been recommended by both Veterinary Ireland and the EU, but rejected by Irish government ministers.
- Most of Ireland's bovine TB research has never been published in peer reviewed journals and cannot be taken seriously.
- Ireland's badger killing strategy is based on snaring badgers within 2km of infected farms, yet genetic research shows that there is no relationship between those TB strains found in cattle and those found in badgers living within two or even five kilometres of those cattle.
- There is strong evidence of both cattle-to-cattle TB spread and of non-compliance with TB testing and livestock movement regulations. The EU has identified shocking inadequacies in TB testing regimes and other livestock regulations. EU regulations are currently enforced, to some

## Ireland's bloody shame

May 2007

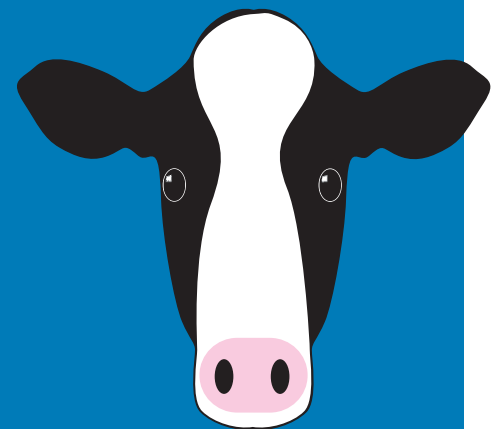


5 Tyrone Avenue, Lismore  
Lawn, Waterford City.  
[www.badgerwatch.ie](http://www.badgerwatch.ie)



**BADGER TRUST**

2B Inworth Street  
London SW11 3EP  
[www.badgertrust.org.uk](http://www.badgertrust.org.uk)  
Charity no. 1111440



FACT: In Ireland, badgers had been exterminated from 72% of main badger setts before the Four Areas [badger killing] Project even started.  
(p.2., col.2)

extent, through a regime of on-the-spot inspections. Yet Ireland's agriculture minister, Mary Coughlan, is trying to secure EU approval for a 14-day notice period for farm inspections, at the request of Ireland's powerful farming lobby.

## Staining the Emerald Isle

It is popularly known as the Emerald Isle. But an ugly, bloody stain is spreading across the "lush pastures" of the Republic of Ireland. The badger, a protected European mammal, is being systematically erased from the countryside. In a landscape where the badger should have a European stronghold, the species has been all but exterminated in a miserable, pointless death. The fact has not been widely publicised in Ireland, no doubt because the people of Ireland will be ashamed to learn of it.

Badgers are a scapegoat for the spread of bovine TB from cattle, to cattle and to badgers. Despite the nightly strangling of Ireland's remaining badgers, in wire snares, attempts to eradicate bovine TB have stalled. It is easier for politicians and vets to point the finger at a voiceless wild animal than it is to tackle the economic might of one of Ireland's most powerful export industries.

Ireland's extensive pasturelands and damp, mild climate should provide a haven for the Eurasian badger. Hedgerows and woodlands offer suitable locations for setts. Earthworms, the staple diet of badgers in Ireland and the UK, abound and are available throughout the year. The badger population density in Ireland should equate to that in the south west of England.

Yet the very limited data available suggests that the vast majority of Ireland's badgers have been

exterminated in precisely those habitats where numbers should be greatest. Ireland's treatment of this protected European mammal is an international disgrace.

- On any given night, up to 6,000 snares are laid for badgers across Ireland's farmland<sup>[2]</sup> and any caught badgers are shot when the snare is inspected sometime in the next 24 hours. This equates to 1.3 million snares annually, yet so few badgers are left that not even 6,000 are caught each year.

- In the Four Areas [culling] Project (FAP) previous culls had reduced the badger population to just 1.9 badgers per square kilometre before the project even started. This density is less than 10% of the 23.1 badgers per square kilometre recorded in south west England<sup>[5]</sup>.

- In the FAP, a worrying 72% of main setts were devoid of badgers before the project even began<sup>[6]</sup>. Only 12% of setts contained one badger, just 5% contained two badgers and only 4% of setts contained more than five badgers, as a result of previous culls and illegal persecution.

- The extermination has top-line Government approval. Taoiseach Bertie Ahern committed 75 additional staff to the culling programme in 2000 to exterminate badgers across "20% of the country"<sup>[7]</sup>. This commitment was made any attempt was made to find scientific support for the strategy. In short, it is a political commitment to killing that drives the policy, not science.

- Ministers have approved the extermination of badgers across 30% of Ireland's agricultural land<sup>[8]</sup>. The Wildlife

[killing] Unit claims that this will result in a population reduction of "25-30% of the national badger population", but since the killing is focused on those areas where ministers admit that the badger population is highest<sup>[9]</sup>, a far higher proportion of the population will be killed.

- Ministers have no idea how many badgers are left or whether Ireland is complying with the Berne Convention, which forbids the extermination of badgers. The last population survey was conducted in 1995 and found a population estimated at 200,000 badgers<sup>[9]</sup>. More than ten years later, agriculture minister Mary Coughlan claimed that there were still 200,000 badgers in Ireland in 2006<sup>[10]</sup>, even though her own official figures show that 46,767 badgers are officially reported to have been killed in the interval<sup>[9, 13]</sup>.

- Although badgers may respond to the persecution by adjusting their fecundity, the limited evidence suggests that the culling, coupled with illegal persecution and road traffic deaths, has overwhelmed the badgers. Researchers financed by Mary Coughlan's Department of Agriculture admit that "the abundance of badgers is substantially less than that predicted in earlier national surveys"<sup>[11]</sup>. No data are given, but the Badger Trust understands that researchers in Ireland now believe that the population is less than 65,000. Badgers are locally extinct in many areas already.

- It is not possible, using the limited published data, to accurately determine how many badgers are left in Ireland. We

have multiplied two alternative figures for population density (from the FAP in 2003) by the total land area of Ireland (69,000 square kilometres). This results in two population estimates: just 4,830 badgers for a density of 0.07 badgers killed per square kilometre (recorded in the first two years of the FAP, when removal rates were highest)<sup>[12]</sup>; and 131,100 badgers if a larger population estimate of 1.9 badgers per square kilometre<sup>[6]</sup> is used.

- These are crude estimates. The true population could be higher, due to badgers not being killed in some areas and due to badgers increasing their fecundity. Or it could be lower since badger densities vary with habitat, are killed on roads and since “interference at setts by blocking, digging etc continues to be reported<sup>[13]</sup>”. The Irish government has created a climate for badger persecution.

- Further evidence of low densities of badgers in Ireland comes from comparisons between the FAP in Ireland and the Randomised Badger Culling Trial (RBCT) in England. The RBCT used cage traps to catch badgers, which are less efficient than the snares used in Ireland. Yet despite using a less efficient capture method, the RBCT killed 360% more badgers in the initial culling period than the FAP and 540% more badgers overall, per square kilometre<sup>[14]</sup>. In part, the larger numbers of badgers killed in England can be attributed to badger immigration in the wake of culling<sup>[15]</sup>, but this cannot account for the huge differences overall.

As if the extent of the extermination was not serious enough, the methods used are appalling.

- The extermination is being carried out using snares. High densities of snares are laid in the vicinity of a sett and any surviving badgers are shot with a .22 rifle when the snares are checked sometime during the next 24 hours. No independent assessment has been carried out into how long badgers are left in snares.

- Non-target animals, including domestic pets, are caught. Six to eight dogs are caught in each county every year, but figures are not provided for other casualties such as cats, foxes and deer<sup>[2]</sup>.

- Ireland claims that snaring is “humane”<sup>[16]</sup>, but the welfare investigation was carried out by those responsible for the culling policy, not by independent experts, and has not been peer reviewed. Nor did the study consider the impact of distress and other psychological trauma.

- The investigation found that 2% of badgers suffered “significant injuries”. This is a highly subjective definition, described as “injuries impairing mobility and normal behaviour”. A further 23% of badgers suffered bruising to the muscles and 73% had localised oedema in subcutaneous tissue. Of the 46,767 badgers officially reported to have been killed between 1995 and 2006<sup>[9, 13]</sup>, this suggests that 34,140 badgers suffered localised oedema; 10,756 suffered muscle bruising; and 935 suffered serious injury.

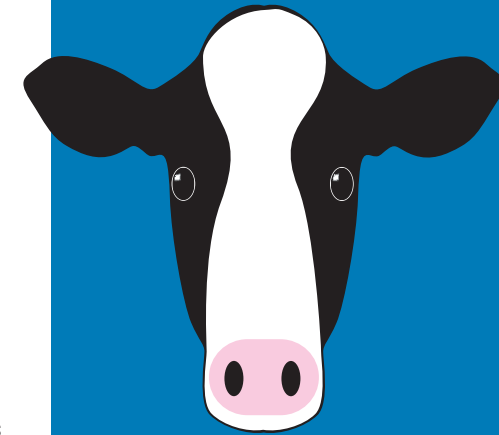
- Badger culling continues during the spring when cubs are born and remain

dependant on their mothers below ground<sup>[8]</sup>. As a result, many cubs die of starvation when their mothers are killed. The Wildlife [killing] Unit has not published any data on the number of lactating female badgers killed by its operatives.

- The Independent Scientific Group advising the British Government on bovine TB has observed that in Ireland’s Four Areas [culling] Project, “no consideration was given to badger welfare”<sup>[17]</sup>.

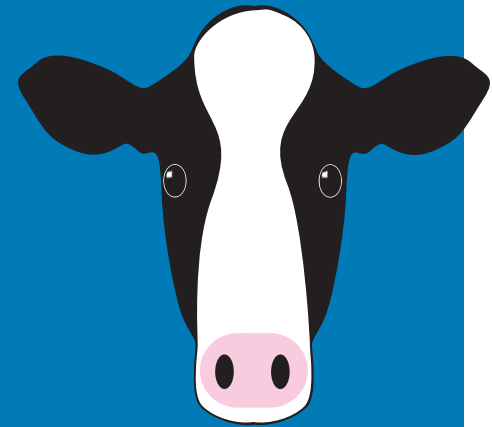
If 2% of domesticated livestock suffered injuries so serious that their mobility and normal behaviour was impaired in the 24 hours prior to slaughter, there would be a consumer uproar. There is no excuse for inflicting less humane treatment on wild animals. For vets to sanction the process is a disgrace to the profession.

But our study raises a more important question. With so few badgers left in the pasturelands of Ireland, how can they possibly be blamed for causing so much bovine TB in Ireland’s national herd? Clearly, another factor is to blame: cattle.



**FACT:** Of the 46,767 badgers officially snared between 1995 and 2006, 34,140 suffered local oedema; 10,756 suffered muscle bruising; and 935 suffered serious injury.

(p.3., col.2)



FACT: Bovine TB rocketed when Ireland abandoned pre-movement testing for cattle in 1996, from 27,000 reactors to more than 45,000 reactors in 1999. Badger culling continued throughout.  
(p.4., col.2)

## Bovine TB is not under control in Ireland

According to the NFU, the United Kingdom can learn from the “apparent success” in the Republic of Ireland of “a 40% reduction [in TB] through abandoning pre-movement testing and concentrating on eliminating all vectors of the disease in wildlife”. The NFU goes even further, promising that: “Experience ... in Eire has shown that if you clear an area of infected badgers, at the same time as slaughtering any infected cattle, you will greatly reduce and ultimately eliminate the disease”<sup>[18]</sup>.

The NFU did not provide statistical evidence to support its claim and it is not hard to see why. Bovine TB has not been eradicated anywhere in Ireland. Indeed, the opposite is true.

- The number of cattle slaughtered with bovine TB in Ireland in 2006 was 24,104<sup>[19]</sup>. That is 2,010 (9%) more than the 22,242 slaughtered in the whole of Great Britain in the same year. Yet the cattle population in Ireland (6.2 million<sup>[20]</sup>) is only 56% the size of that Great Britain (10.6 million<sup>[21]</sup>). Thus, twice the proportion of Ireland’s national herd (0.4%) was slaughtered with bovine TB than in Britain (0.2%) in 2006.
- Ireland has been progressively killing badgers since at least 1998, but the number of TB reactor cattle has never fallen below 25,000 per annum (until 2006) and for most of the badger culling era has varied between 30,000 and 45,000 reactors<sup>[22]</sup>.

The NFU’s Meurig Raymond has claimed that “abandoning” pre-movement testing of cattle has helped to control bovine TB. The reduction of 40%, to which he refers, is that quoted by

Ireland’s agriculture minister, Mary Coughlan, in the Dáil. Between 1998 and 2004, the number of TB reactors per thousand cattle did indeed decline from 4.2 to 2.6 – a reduction of 38.1%<sup>[23]</sup>. But this date range ignores what happened *before* 1998:

- Way back in 1988, the Irish Government introduced an “intensive four-year programme to limit cattle-to-cattle transmission”, at the same time as the “progressive adoption of reactive badger removal as a disease control strategy”<sup>[22]</sup>. Thereafter, until 1996, there was a steady reduction in bovine TB. But the absence of any controlled, scientific study means that it is impossible to determine the relative contribution to disease reduction made by badger culling or cattle-based measures.
- In 1996, pre-movement testing for cattle was abandoned. Contrary to claims made by Meurig Raymond, TB rocketed in Ireland from 27,000 reactors in 1997, to 44,000 cases in 1998 and more than 45,000 in 1999 – the highest level ever recorded<sup>[22, 24]</sup>.
- The Irish Farmers Association was quick to blame a lack of badger culling for this increase<sup>[25]</sup>, but badger culling had continued throughout this period and according to official figures more badgers were killed in 1999 than in any previous year<sup>[9]</sup>.
- In addition, brucellosis (another, less infectious cattle disease) increased at a similar rate during the same period<sup>[26]</sup>. Badgers are not involved in brucellosis transmission. This suggests that cattle management practices were behind the increases.

- In 2003, Veterinary Ireland estimated that pre-movement testing would reduce TB rates by 10%<sup>[27]</sup>, but the proposal was rejected by agriculture minister (and dairy industry professional) Joe Walsh<sup>[28]</sup> without providing a sound scientific or cost-benefit analysis supporting the decision.
- The resumption of pre-movement testing was also recommended by EU inspectors in 2003<sup>[29]</sup> but, again, this has been ignored.

## No scientific justification for badger culling

### Research quality in Ireland

The peer review process for scientific literature adds quality and value to papers, but it is not infallible. As Jennings observes, “Whether there is any such thing as a paper so bad that it cannot be published in any peer reviewed journal is debatable”<sup>[30]</sup>.

But it is widely accepted<sup>[31]</sup> that journals fall into a hierarchy. At the peak are the prestigious, multi-disciplinary journals that are globally respected across the scientific community. Below these, the focus of expertise becomes increasingly narrow, whilst the range of journals becomes wider and more standardised.

Bovine tuberculosis is a highly complex and dynamic disease that demands the very best in inter-disciplinary research, with robust experimental design and statistical data at its heart. By the same token, it is possible to have more confidence in inter-disciplinary research when the results have been peer reviewed in multi-disciplinary journals<sup>[32]</sup> and particularly in international journals that are able to draw on a

wide range of independent referees.

The work of the Independent Scientific Group, for example, which has overseen the Randomised Badger Culling Trial in England, has been peer reviewed by experts in two of the world's most prestigious multi-disciplinary journals: *Nature*<sup>[33]</sup> and the *Proceedings of the National Academy of Sciences*<sup>[15]</sup>. In both cases, the accepted paper is published alongside a wealth of supporting material that shows the extensive and robust statistical analysis of the data that has been undertaken. Supporting data has never been published in Ireland.

As Christopher Lee has pointed out, the reviewers in single-discipline journals may not have the “comprehensive authority, to evaluate both impact (results) and validity (methodology) to return a decision” on the value and reliability of inter-disciplinary research<sup>[32]</sup>.

Until recently, much of the historic research into bovine TB and badgers in the UK had been published in a small proportion of single-discipline veterinary journals. In Ireland, in particular, most of the research was not published in a peer reviewed journal at all. This is not to accuse anyone of incompetence or dishonesty, but to question the status of the evidence that is cited.

Simon More and Margaret Good, for example, describing the history of bovine TB control in Ireland in a special edition of *Veterinary Microbiology* with More as guest editor, cited almost 90 references. Of these, 31 were “selected papers” self-published by Eire’s Centre for Veterinary Epidemiology and Risk Analysis without peer review. Another ten references were other governmental, self-published documents that had not been peer reviewed.

Similarly, O’Keeffe’s *Description of a medium-term national strategy toward eradication of*

*tuberculosis in cattle in Ireland*<sup>[8]</sup> is a “selected paper” which sets out the “sound scientific” justification for the current badger culling strategy in Ireland, citing 11 references, six of which are other non-peer reviewed “selected papers” and two of which are other governmental, non-peer reviewed documents.

This poses a problem. As John Moore has argued in *Nature*: “The research community understands that scientific information that has not been peer reviewed should not be taken seriously.<sup>[34]</sup>”

Simon More cites non-peer reviewed “selected papers” in other scientific journals. But when the Badger Trust requested a copy of “selected papers” from 2004-5, we were “specifically [asked] that they not be used as part of any public debate in the UK or elsewhere” since “these papers were not peer-reviewed prior to publication”. Yet these papers are deemed suitable by More “to inform policy-makers and interested bodies (industry, farming bodies, farmers etc) of our work”<sup>[35]</sup>.

The variation in data given in different non-peer reviewed papers allows ministers to play fast and loose with figures provided in the Dáil. O’Keeffe claims that “upwards of 40% of the badgers are culture positive for tuberculosis”<sup>[8]</sup> in the vicinity of infected farms. Yet another non-peer reviewed paper, in the same report, finds that 12.8% of badgers culled around infected farms were positive for TB, from a massive sample of 24,986 animals<sup>[13]</sup>.

In December 2006, agriculture minister Mary Coughlan told the Dáil that: “The rate of infectivity [in badgers] is between 16% and 25%”, thereby doubling the most reliable of the two estimates<sup>[10]</sup>.

More recently, some research in Ireland has been published in peer-reviewed journals,

primarily in *Preventive Veterinary Medicine*. This journal, states the publisher, “is ranked 21<sup>st</sup> out of 129 veterinary science titles”.

### Research validity in Ireland

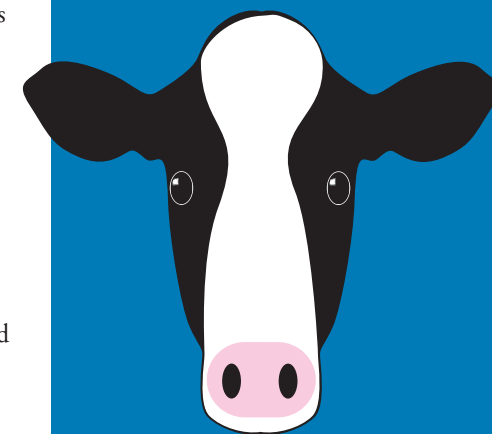
Against this background, the claim that badger culling in the Republic of Ireland is based on “sound science” cannot be taken seriously. Two large-scale badger culling projects undertaken in Ireland are cited by pro-cull advocates as evidence that badger culling is both essential and effective in the control of bovine TB.

But both, the East Offaly<sup>[36]</sup> culling project and the Four Areas [culling] Project (FAP)<sup>[12]</sup>, have serious weaknesses in their scientific methodology.

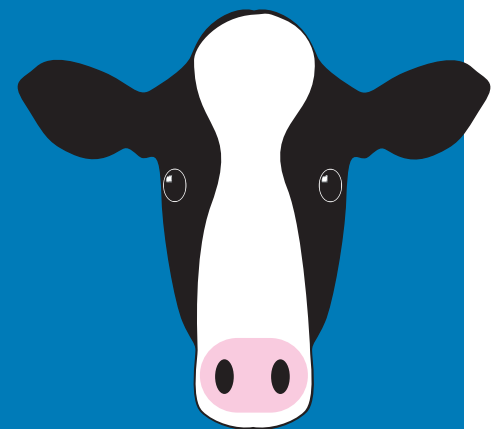
Some of these weaknesses stem from the “perturbation effect”, in which killing badgers encourages badgers from neighbouring territories to enter vacant territory and experience increased rates of contact with infected cattle or remaining badgers<sup>[37]</sup>. This leads to the spread of bovine TB outside the culling zone and this negative effect has been demonstrated in the Randomised Badger Culling Trial in England<sup>[15, 33, 37]</sup>.

Glaring weaknesses in the Republic of Ireland culling trials include:

- Neither study had a sound scientific “control” area, in which no culling was done. Such a control is essential to provide an accurate comparison between culling versus no culling. In the East Offaly project, the “control” had been subject to previous culls<sup>[22]</sup>. In the FAP, “reactive” culling took place on farms in the “reference” areas used for comparison with the “removal” areas. Badgers had also been culled in both removal and reference areas before the study began. As a result, the perturbation effect is



**FACT: TB infection in Irish badgers around infected farms is said by vets to be “12.8%”, by the agriculture minister to be “between 16% and 25%” and by the head of the badger killing unit to be “40%”.**  
(p.5., col.2)



FACT: There is no significant association between the TB strains found in cattle in Ireland and the TB strains found in badgers within 2km or even 5km of those cattle.

(p.6., col.2)

likely to have exaggerated the apparent benefits of culling in both studies. The authors claim “there is no evidence in support of such an effect” but, without proper scientific controls, absence of evidence is not evidence of absence.

- The study areas were not randomly selected. Non-randomised studies introduce selective bias into results, which means they cannot be applied to other areas. In the FAP, for example, the selected areas had coastal and major river barriers to badger immigration. Such barriers do not exist across the rest of Ireland, which means the same conclusions cannot be applied elsewhere.

## Persecuting the innocent

On 1 January 2004, the Irish government set about exterminating badgers with ruthless vengeance, issuing a licence to kill 60,000 animals.

James O’Keeffe, head of Ireland’s Wildlife [killing] Unit, explained the strategy to policy-makers and farmers in a non-peer reviewed paper in 2006<sup>[8]</sup>. Badgers are eradicated within 2km of any farm that suffers a bovine TB breakdown, if evidence of badgers is found within 1km of the farm.

The rationale for the 2km distance is that bovine TB is a disease found in “clusters” of cattle herds. Killing local badgers will “result in lowering the risk of cattle herds becoming infected with TB from TB infected badgers in the local environment”. It is, in effect, a reactive culling strategy. Trials of a similar strategy in England were halted when it emerged that reactive culling actually increases the risk of

bovine TB<sup>[33]</sup>.

It sounds so simple: remove the local badgers, remove the risk of infection. And since Ireland’s researchers insist that “there is no evidence in support of [the perturbation] effect”<sup>[12]</sup>, farmers should have nothing more to worry about.

- But O’Keeffe, in presenting this “sound scientific” justification in 2006, omitted two key pieces of research. First, in 2003, Olea-Popelka *et al* reported that setts containing infected badgers in Ireland are not clustered<sup>[6]</sup>.

- Second, in 2005, Olea-Popelka *et al* used a genetic technique called RFLP to distinguish between the different bovine TB strains found in badgers and cattle<sup>[38]</sup>. If local badgers were to blame for clustered TB infection in cattle, the same strains should be found in both badgers and cattle. Instead, Olea-Popelka *et al* found no significant association between the strains in badgers within two or even five kilometres of the strains in infected herds.

These revelations are hugely embarrassing and have multiple implications:

- If infected badgers are not clustered around infected cattle herds, the 2km cull radius is a nonsense. The Irish government is busy slaughtering blameless badgers.

- It begs the question: what is to blame for these TB clusters in cattle? Two possible agents could be blamed: any badger, from anywhere; or other cattle. As we show in the next chapter, there is strong evidence that cattle are the primary vectors.

But the researchers blame badgers. They conclude that their “original assumption about

## Mocking the dead

In a statement that would not be out of place in a Pythonesque “dead parrot” sketch, O’Keeffe claims that the medium term badger extermination strategy will contribute towards the “key objective” of “a healthy badger population nationally”<sup>[8]</sup>.

The tens of thousands of perfectly healthy badgers that have already been snared would surely disagree.

the stationarity [sic] of badger social groups is not consistent with our data. It seems more probable that we have underestimated the actual extent of badger movements”<sup>[38]</sup>. More claims that this extensive movement of badgers cannot be blamed on the perturbation effect created by culling, since “long distance badger movements were recorded in Ireland in the 1980s before strategic removal operations were common”<sup>[22]</sup>. Yet if badgers are indeed as mobile as claimed, confining culling to within 2km of outbreak herds will not ensure that the wider badger population is protected.

Thus, the “strategic” slaughter of local badgers is not a rational strategy at all. It certainly has no founding in “sound science”.

## Cattle are to blame

O’Keeffe argues that Ireland’s “comprehensive testing regime would be expected to successfully eradicate tuberculosis from the national cattle herd, as was the experience of many of our EU neighbours”. But farming practices and other

variables vary widely within Ireland and within the EU. There is therefore no evidential basis to support O’Keeffe’s claim.

In fact, TB persists in EU member states in the absence of any wildlife reservoir, including Italy, Spain and Portugal, since “the variety of cattle breeding systems and environmental conditions in the EU leads to different epidemiological situations”<sup>[39]</sup>.

As Moda has argued, social and economic constraints on disease control also play their part, including “a social reluctance to recognise the importance of seeking eradication as the goal of disease control, effective communication of technical issues, the training and the organization of veterinary services, the relationship between the regional authority and farmers and their representatives, and data management and epidemiological reporting”<sup>[40]</sup>.

Here, the Badger Trust and Badgerwatch Ireland show that farming practices, problems with monitoring compliance and weaknesses in Ireland’s monitoring system have allowed the spread of bovine TB between cattle to persist.

Some of the evidence lies in the problems that Ireland continues to face with brucellosis. This disease is primarily transmitted through uterine discharge fluids so, in contrast to the aerosol transmission of bovine TB, brucellosis is less infectious. In 1998, the Irish Government advised EU inspectors that: “80% of the source of [brucellosis] spread is between neighbouring farms. The usual picture in infected herds is that one animal is initially exposed and then within herd spread takes place. The critical mass of infection, due to within herd spread, quickly increases, thus posing a severe threat to the surrounding herds”.

This problem has been confirmed by an EU inspection, which reported that: “Farms often

have fragmented land parcels with uncontrolled animal movements between the parcels within the holding ... quite often pregnant heifers are grazed on separated land parcels and brought back into the farm at the time of calving, with a higher risk of introduction and/or spread of [brucellosis] infection.”<sup>[41]</sup>

If the bulk of less infectious brucellosis is spread between neighbouring farms in Ireland through “uncontrolled animal movements” between parcels of fragmented farms, the opportunities for the spread of more infectious bovine TB amongst cattle are surely greater.

As More himself has hinted – in a non-peer reviewed report on work in progress – the opportunities for cattle to cattle spread are enormous<sup>[42]</sup>. He reveals that an index farm in a tuberculosis outbreak in the south east of Ireland was fragmented into four land parcels adjacent to land parcels from other farms. Six of the contiguous farms were “potentially significant in terms of source and/or spread”. This is a huge multiplying factor.

In another TB cluster involving seven farms in the north east, More shows that between 1998 and 2005, there was no period when all seven farms were free of bovine TB. At times, five out of seven farms were under TB restriction. In 2004, gamma interferon testing on one farm yielded 11 “hidden” reactors, alongside 14 conclusive skin test reactors, confirming that the skin test was missing large numbers of infected cattle. Yet although four other adjacent farms were under restriction at the same time, only one other was subject to gamma interferon, yielding one hidden, positive reactor.

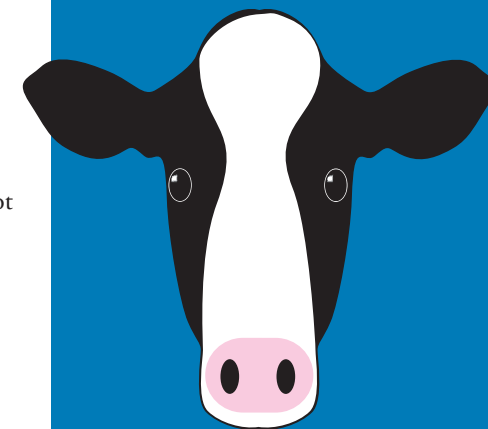
More’s report does not rule out the possibility of badger involvement. But it does reveal the huge opportunities for cattle to cattle spread between contiguous herds.

## Exposing the real culprits

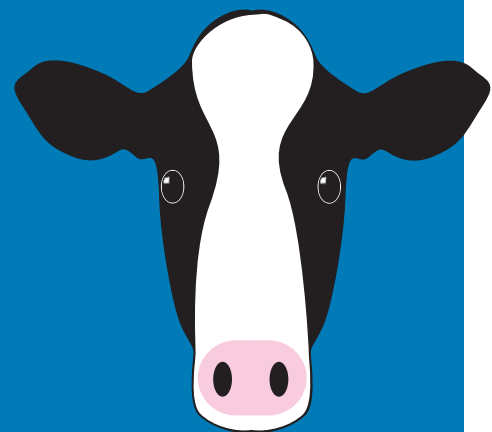
For the Irish government to confidently heap so much blame for bovine TB upon badgers, it should be able to show that its cattle monitoring and TB testing regime is removing all infected cattle from herds and is not vulnerable to fraud on the part of farmers. In fact, the opposite is true.

Although neither of the two volumes of documents published by the Veterinary Epidemiology and Tuberculosis Investigation Unit since 2001 makes a single reference to potential weaknesses in the bovine TB testing regime or the impact of illegal livestock movements, we have found that:

- TB incidence began to decline again in Ireland following the introduction of gamma interferon TB testing and the use of the anamnestic-ELISA assay in 1999<sup>[22]</sup>.
- The recent decline in bovine TB cannot be attributed to badger culling. Gamma interferon and the anamnestic-ELISA assay have been extended, alongside the introduction of a computerised cattle movement monitoring system and a reactor herd management system<sup>[22]</sup>.
- Other cattle-based TB control measures, only recently introduced, include: “the tightening up on illegal cattle movements, the regulation of dealers, prosecutions for breaches and the imposition of penalties for a failure to comply with animal disease and identification regulations<sup>[10]</sup>”.
- Ireland’s TB problems have often been at their highest density alongside the border with Northern Ireland<sup>[43]</sup>. An



**FACT:** In Ireland, 80% of brucellosis is spread through the “uncontrolled” movement of infected cattle between land parcels of fragmented farms. TB is more infectious than brucellosis.  
(p.7., col.1)



**FACT:** In Ireland, the proportion of new herd restrictions detected at slaughter increased from 27% in 2000 to 35% in 2002. The skin test is missing huge numbers of infected cattle.

(p.8., col.1)

investigation is currently underway into the illegal movement of cattle, under TB restriction, across the border<sup>[44]</sup>.

- Between 1 January 2004 and 23 April 2007, Northern Ireland's Department for Agriculture and Rural Development (DARD) detained and slaughtered 13 cattle that were illegally imported from the Republic of Ireland. During the same period, as part of 145 separate investigations, DARD detained and destroyed 422 cattle under EC Regulation 494/98. The identification of these cattle was unknown and therefore their movement histories and origins were also unknown<sup>[45]</sup>. These cattle could have been illegally imported from the Republic of Ireland.

- In the same period, DARD's Central Enforcement Team (CET) successfully prosecuted 38 people for breaches of cattle identification, registration and movement regulations.

- Prosecution records obtained for the Republic of Ireland do not distinguish between TB, brucellosis and cattle identification offences. Between 1996 and 2006, there were 149 successful prosecutions for such offences. Only 7 prosecutions were recorded before 1999, when the number increased dramatically to 31 in 2001. Prosecutions averaged 21 per annum between 2002 and 2006. However, as of 1 May 2007, 35 prosecutions are pending; the highest number yet recorded in one year<sup>[46]</sup>.

- A substantial number of TB cases in Ireland (26.8% in 2000 to 34.6% in 2002) are detected at slaughter<sup>[29]</sup>. Despite annual testing, this suggests that

## A catalogue of failure in Irish TB control – as reported by EU inspectors<sup>[29]</sup>

“[On farm] shortcomings in relation to the holding register, movement notifications, movements of animals and movement controls ... testing of forward traced animals was not always carried out as instructed ... the requirement for cleaning and disinfecting of a holding following a breakdown is not specified ... big differences existed between the number of animal [sic] present on the holding (210 according to the owner), the number of passports (152 available on the farm during the visit plus nine presented later) and the number of animals in the holding register (310); animals had left the holding without passports; passports of animals that had been recently bought were not available on-the-spot; [the identification for one animal differed in the TB test listing for the herd and the herd file held by the Divisional Veterinary Office, and the animal “could not be located in any holding”]; movement notifications had not been made to the central database within the required time intervals; for different animals, information on the holding register did not match data from the central database; animals indicated as ‘present’ in the register were indicated as ‘exit’ in the database (they were ‘located’ in another holding) and vice versa ...

Deadlines for the removal of reactor animals are generally between 3-4 weeks ... the cleaning and disinfection

of some means of transport, performed by the drivers themselves, was very superficial and done without wearing protective gear ... the laboratory is not accredited for TB testing and is located in old buildings, which are not well maintained ...

5.3% of the contiguous [herd] check tests were positive ... the proportion of new herd restrictions as a result of detection of TB lesions at slaughter has increased during recent years, from 26.8% in 2000 to 34.6% in 2002 ... the derogation permitting animal movements from a herd following disclosure of [positive] animals, is not correctly implemented ...

In the slaughterhouse, the same facility was used for cleaning and disinfecting both meat and livestock vehicles. Meat lorries were left open in the dirty part of the yard close to the manure stock, with numerous crows present. In the slaughter hall, rusty metallic supports and dirty air extractors were seen. In the dairy establishment, wall and floor damage was observed, as well as rust on metallic supports. Plastic milk containers were moved under the open sky prior to filling. The plant was not pest proof. In both establishments, a number of notices for enforcing hygiene rules were displayed ... but not respected and no enforcement action was taken”.



the testing regime is not nearly rigorous enough to detect a large proportion of reactors and/or there is not sufficient policing of livestock in Ireland.

- Several EU investigations since 1998 into TB control, livestock movements and animal by-products in Ireland have uncovered many types of irregularities, with consequent risks for both animal and human health.

- The text in the box (left) is taken from a devastating EU report into TB control in Ireland, following an inspection in 2003. It confirms that cattle monitoring and TB testing in Ireland has provided multiple opportunities for the spread of bovine TB between herds and farms for decades, whilst vets, scientists and politicians have blamed badgers.

- Ireland's cattle movements database did not conform to EU standards in 2003, when the EU advised Ireland to: "make the bovine database conform to the Community legislation as regards notification of all animal movements ... to improve its functional parameters so as to make it possible to carry out cross checks on the truthfulness of the information provided" by farmers<sup>[47]</sup>.

- In 2002, EU inspectors studying livestock transportation found: "Many vehicles ... in a poor state of cleanliness. Evidence was found of vehicles that had loaded animals without having been properly cleaned after the previous consignment ... an effective level of enforcement has not been achieved, as a high number of vehicles do not comply with Community or Irish legislation"<sup>[48]</sup>.

- The examples above underline

the importance of random, on-the-spot inspections of farms, markets and slaughterhouses in Ireland. Not surprisingly, in the run up to Ireland's 2007 general election, the Irish Farmers Association's (IFA) leading demand is for politicians to give farmers "14 days' advance notice of inspection for all schemes"<sup>[49]</sup>. Following this and other pressure from the IFA<sup>[50]</sup>, agriculture minister Mary Coughlan did indeed demand, but unsuccessfully, a 14 day notice period for inspections at a meeting of EU agriculture ministers<sup>[51]</sup> on 16 April 2007.

## Conclusion

Ireland's rightly proud and modern Celtic Tiger image stands in stark contrast to the primitive and brutal persecution of the Eurasian badger in its countryside.

The cruelty and extent of the slaughter is unparalleled in Europe and an international disgrace. The killing has failed to secure the eradication of bovine TB anywhere in the Republic of Ireland and, despite the intensive scale of the slaughter, bovine TB is not under control.

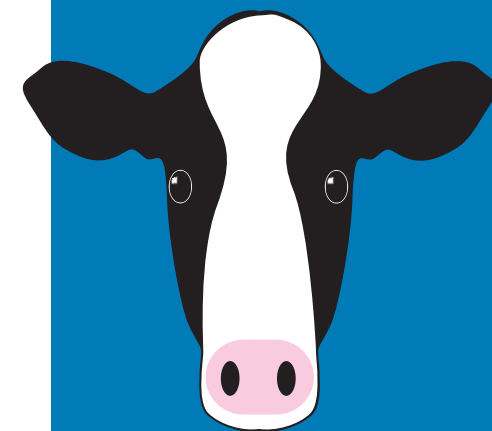
As in Great Britain, badgers have been made a scapegoat for bad farming practices that propagate the spread of bovine TB from cattle to other cattle and to badgers. The badger is a messenger, reporting that cattle-based TB control is not nearly effective enough. The response has been to shoot the messenger.

Badgers have been virtually exterminated from Ireland, yet TB remains at higher levels than anywhere else in Europe and at twice the level seen in Britain, which has far higher densities

of badgers. In Ireland, the scapegoat is all but extinct. But the blaming goes on.

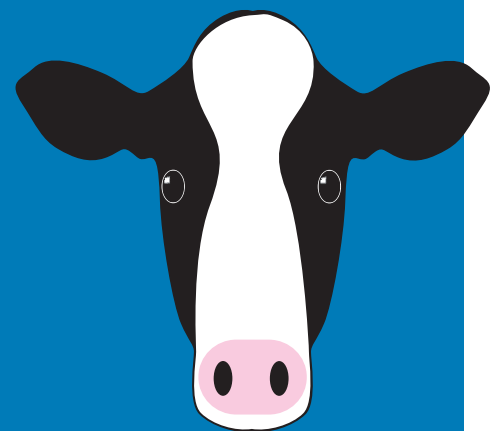
## Recommendations

- That consumers boycott Irish beef and dairy products until badger culling is halted in Ireland.
- That tourists with a concern for nature conservation and animal welfare boycott the Republic of Ireland as a holiday destination.
- That the Berne Convention immediately opens a file on Ireland's persecution of the Eurasian badger, until such time as a fully independent, nationwide population survey of Ireland's badgers has been commissioned, completed and published in a peer reviewed journal.
- That all political parties in Ireland commit to immediately suspending badger culling until the population survey above has been completed.
- That further badger culling is ruled out until Ireland can show that all possible cattle-based TB control measures have been fully implemented and subjected to full inspection and approval by the EU.
- That all future TB research in Ireland, including the further analysis of the Four Areas (badger culling) Project that is currently underway, is published in leading, international, multi-disciplinary, peer reviewed journals.
- That EU agriculture ministers reject Irish demands for a 14-day notice period for farm cross-compliance inspections.



**FACT:** In 2003, EU inspectors told Ireland to make its cattle movement database conform with EU legislation and to cross check "on the truthfulness of the information provided" by farmers.

(p.9., col.1)

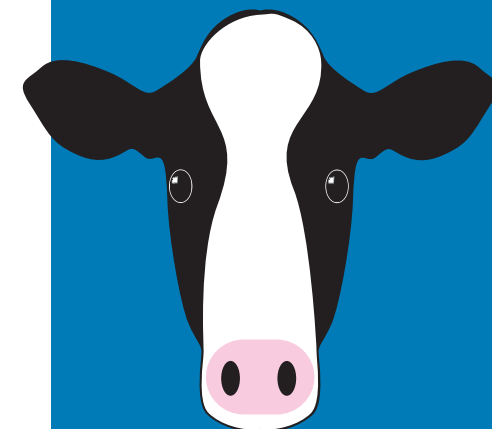


FACT: In 2003, EU inspectors reported an Irish slaughterhouse and a dairy where hygiene notices were displayed “but not respected and no enforcement action was taken”.  
(p.8., box)

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FACT: In 2007, the highest number of prosecutions ever, for breaching TB, brucellosis and livestock movement regulations, are pending in the Republic of Ireland.  
(p.8., col.1)