

Tackling TB:

Why culls will help disease control



The evidence that proves a badger cull will work



INTRODUCTION

Bovine TB (bTB) is out of control and is ruining farming family businesses across the country. It can spread between badgers and cattle and there is no cure for it. **More than 38,000 cattle** were compulsorily slaughtered last year because of bTB and it has been estimated that **bTB control in England will cost £1 billion** over the next decade if action is not taken. Government, farming leaders and veterinary experts agree that culling badgers and reducing their numbers in some of the most heavily infected areas will help to break the cycle of infection between cattle and badgers, and reduce bTB in cattle.

Much has been made of the “overwhelming” public opposition to a badger cull. However, in a recent YouGov survey respondents were asked: ‘Would you support or oppose the culling of badgers, as part of a range of measures and in specific infected areas, in an attempt to control bovine TB?’ **The results showed that while 34 per cent of people oppose a badger cull, the remaining 66 per cent either support (29%), don’t know (22%) or have no strong feelings (15%) about it. The survey also revealed that more than a quarter of people (27%) opposed to a cull would change their mind if it meant bTB did not spread to other areas of the country.**

This report shows how scientific evidence and examples from other countries prove a cull will help control this terrible disease.



Glossary

- **Hotspot area:** *An area where cases of bTB in cattle are persistent and high.*
- **Independent Scientific Group (ISG):** *A group of independent scientists who advised the Government on how best to tackle the problem of bovine TB and produced a final report in 2007.*
- **Perturbation:** *Displacement of badgers from one area to another.*
- **Randomised Badger Culling Trials (RBCT):** *A trial designed by the Independent Scientific Group which ran from 1998 to 2006 and looked at how bTB spread between cattle, badgers and other wildlife.*



FACT 1

You can't get rid of bTB without addressing the disease in wildlife

The link between bTB and badgers has been known for some time. In 1980, Lord Zuckerman produced a paper highlighting the link and in 1997 Lord John Krebs concluded that there was **"compelling evidence"** that badgers transmit bTB to cattle. Anti-cull groups have also acknowledged the disease is transmitted in this way.

Anti-cull groups quote the Independent Scientific Group (ISG) report of 2007 on the spread of the disease and the importance of cattle to cattle transmission. The NFU has never claimed that cattle to cattle transmission does not happen. But in bTB hotspots **independent scientific reports estimate that as much as 50 per cent of all farm infections are from badgers to cattle.** Stringent cattle controls are already in place but cattle testing, movement controls and biosecurity can only go so far. Until you can remove all reservoirs of disease there will be continued reinfection. Controlling disease in badgers is an essential part of controlling bTB.

The only way to guarantee that badgers and cows won't come into contact would be to keep cattle constantly locked up in secure housing. This goes against the views of many people who wish to see cattle grazing in iconic settings across the South and West of England as well as market demands for grass-reared beef. The UK livestock sector also plays a crucial role in sustaining some of the nation's most beautiful and treasured landscapes, with more than two thirds of the UK's agricultural area made up of grassland. What is more, not a single piece of published scientific evidence exists that demonstrates defined biosecurity measures, other than those relating to cattle movements, reduce the incidence of bTB in cattle.

While the Randomised Badger Culling Trials (RBCT) did find evidence of perturbation around the edges of culling areas, the 2011 review of the RBCT by

leading experts, including Lord Krebs, found that the perturbation effects had been neutralised over time and that proactive culling areas experienced sustained rates of appreciably lower bTB infection.

While anti-cull groups argue that there are areas which have been able to control bTB without wildlife controls they admit that there is no evidence to suggest there was a significant reservoir in the wildlife.

It would appear that some anti-cull groups advocate whole herd slaughter in cases of bTB. This policy would condemn thousands of additional cattle to a needless death and begs questions about the claim of the organisations represented to support animal welfare.





FACT 2

The reduction in bTB cases in cattle in the Republic of Ireland shows that a culling policy works

While anti-cull groups highlight the differences between England and the Republic of Ireland they do not highlight the similarities. Both are major cattle producing countries with a badger population that is a localised source of bTB infection. Both countries recognise the need for a package of measures to tackle bTB.

Just as in Ireland, vets in England have the ability to use the gamma interferon blood test to supplement the conventional skin test in clearing up herd breakdowns.

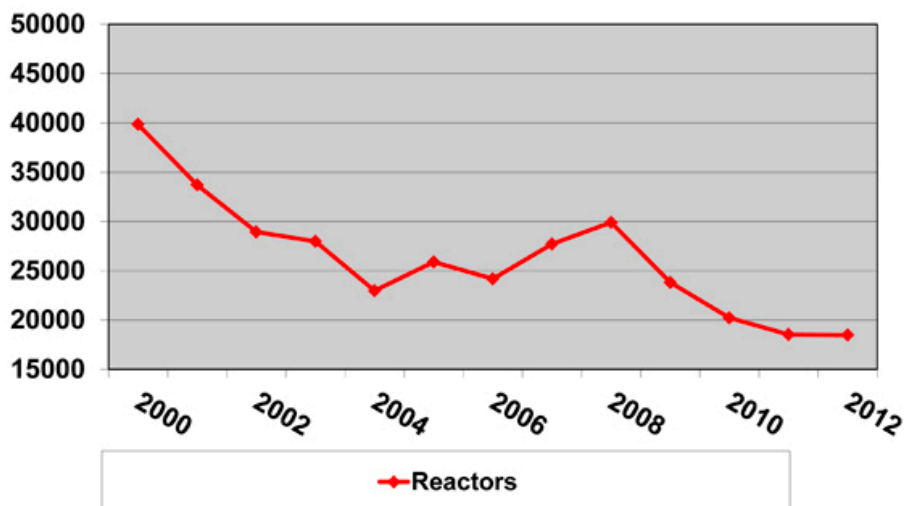
There are differences in testing regimes. This is because bTB is only an endemic problem in certain areas of England, whereas the disease was more widely distributed in Ireland.

In high incidence areas in the UK, routine cattle testing for bTB is yearly, just as in Ireland. All counties that have had bTB incidents have yearly cattle testing and the rest of the UK has 48 month testing.

In 2012, 5.9 million bTB tests were carried out on cattle in England. England undertakes significantly more cattle testing than Ireland because of the requirement to test animals before they are moved from a high risk area. There is no such requirement in Ireland.

It is a fact that since the Irish government started culling, bTB incidents in the country have dropped by a third. Anti-cull groups may see this as a "small reduction" but it is a vital lifeline for those farmers involved and shows culling badgers has a lasting, significant benefit.

Results from Ireland (using reactive culling method)

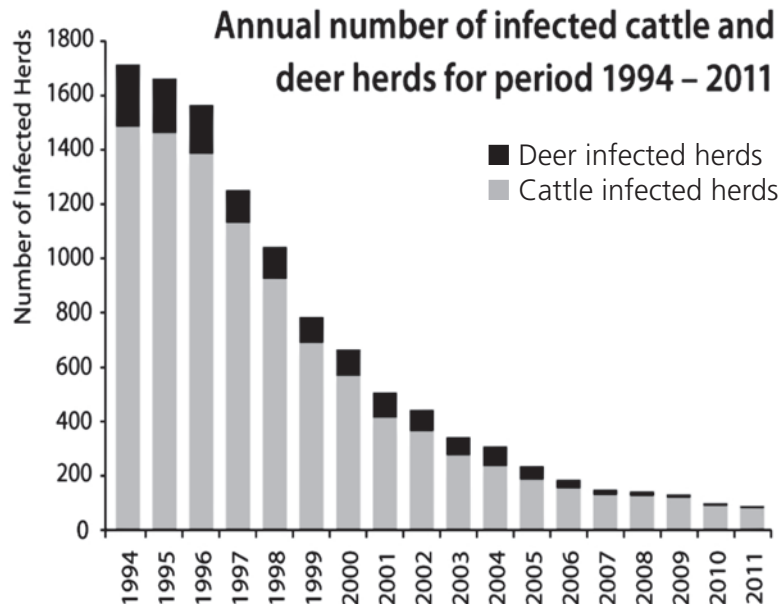


source (Irish Government Department of Agriculture, Food and the Marine, TB stats)

Evidence from the USA and New Zealand show that a cull of the wildlife reservoir is necessary

Anti-cull campaigners seek to highlight the differences between the situation in England and those in New Zealand and the USA. Of course, the differences in species and disease situation require a good understanding of the epidemiology and ecology as well as solutions tailored to each country or region. However, the underlying point is still valid – unless disease is tackled in significant reservoirs of infection in wildlife any eradication strategy is likely to be compromised.

SOURCE: Animal Health Board New Zealand



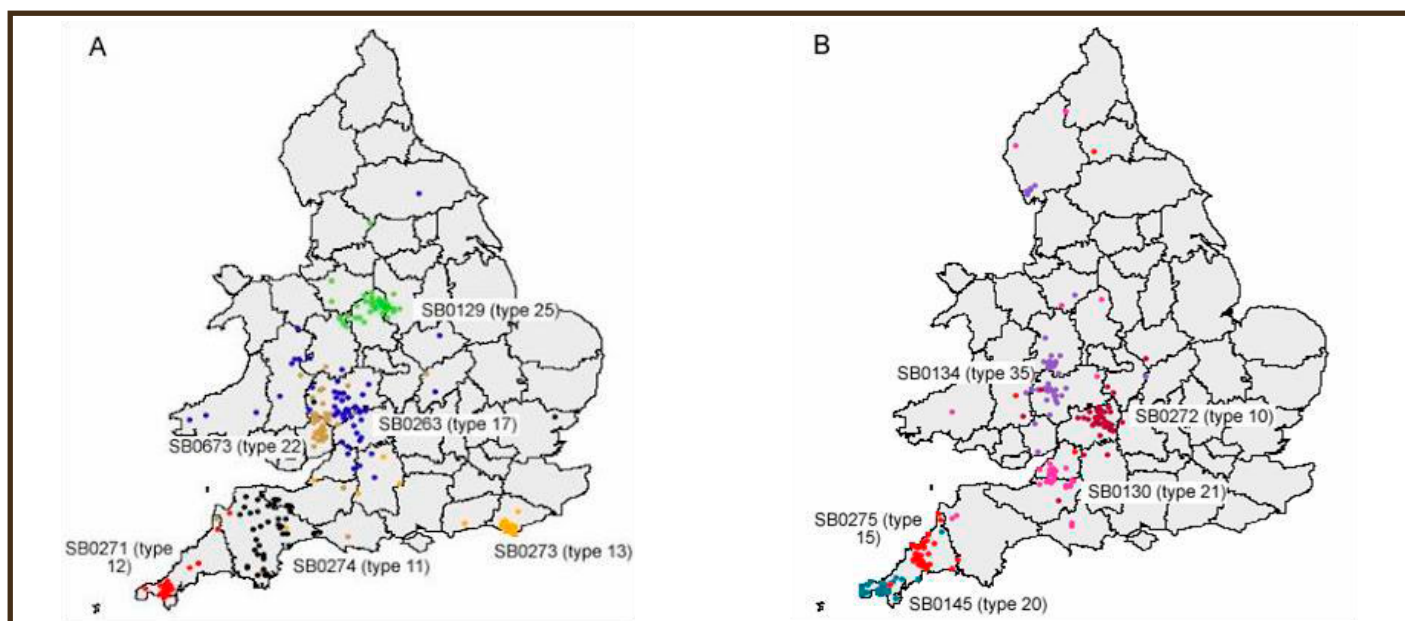
As some anti-cull campaigners correctly assert, New Zealand has adopted a dual approach to controlling the disease in cattle and wildlife. Contrary to the perception anti-cull campaigners seek to create, just as in New Zealand, farmers in England are subject to movement controls and a clear strategy of herd and movement testing. Farmers in England are also encouraged to adopt stringent biosecurity measures.

The key difference is that New Zealand takes an equally rigorous approach to tackling disease in wildlife by culling possums.

Yet again, some anti-cull groups appear to suggest that the solution in England lies in total herd depopulation, demonstrating a wilful disregard for the lives of cattle and the livelihoods of farmers.

Badgers have played a role in the rise in bTB

Anti-cull groups have sought to put the blame for the spread of bTB solely on cattle movements across England. No one has ever denied that movements of cattle play a part in disease transmission, especially from high risk to low risk areas. But mapping of disease 'spoligotypes' (individual strains of bTB) show that more localised spread is occurring across different parts of England.



Maps identifying clustering of disease spoligotypes in England and Wales

This suggests that localised factors are very important – if cattle movements provided the sole explanation of disease transmission there would be much more mingling of strains across the country. There is not. This indicates a reservoir of infection exists, recycling disease within and between cattle and badger populations.

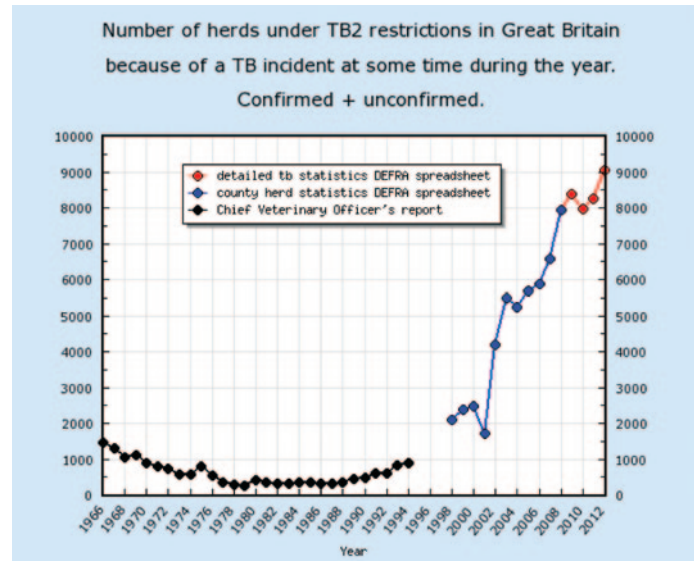
In fact, research from the Animal Health and Veterinary Laboratories Agency (AHVLA) showed that the spoligotypes found in 1972 to 1976 were in the same geographical area in 2002. Anti-cull groups have acknowledged the fact that badgers transmit bTB to cattle.

There continues to be a rise in bTB in cattle

It is recognised that disease levels fluctuate to some degree from month to month and year to year, dependent in part on the level of testing. In 2012, there were approximately 3,900 new bTB incidents in cattle herds which had previously been bTB free.

Cattle herds in and around bTB problem areas are subject to regular stringent testing and controls:

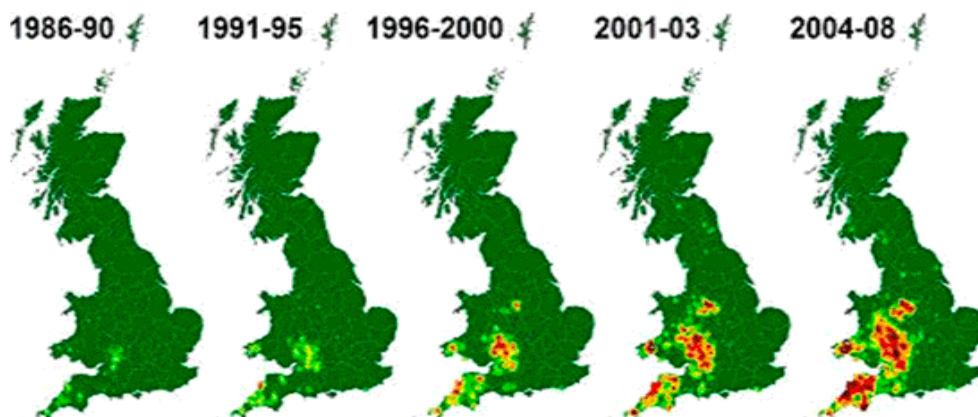
- Herds which have a positive test are tested every 60 days;
- Cattle that react to the test are isolated and slaughtered;
- The remainder of the herd is subject to strict movement restrictions;
- Cows cannot move off-farm, except for slaughter, until the whole herd passes two consecutive bTB tests over 120 days;
- bTB-free herds in hotspot areas are tested annually.



The long-term trend in disease incidence since the early 1990s is of increasing levels of infection across cattle herds and geographical spread of the disease.

Anti-cull campaigners highlight what they see as flaws in the tuberculin diagnostic test. The NFU agrees that one of the limitations to control is the lack of a very sensitive test for disease in cattle and we support further research into diagnostics. But it is an internationally recognised test for bTB in cattle and at the moment there is no alternative.

The spread of TB between 1986 and 2008



Controls on the movement of cattle have been strengthened



The NFU has always recognised that a comprehensive suite of measures, including cattle controls, is needed to address bTB. While there can be practical difficulties associated with managing cattle movements, cattle controls have been significantly strengthened to help minimise the spread of the disease.

Anti-cull campaigners have highlighted that the UK has more cattle movements than other parts of the EU. To some degree, the level of movements reflects the distribution of herds in the UK (with more cattle rearing in the west, more finishing in the east) and the higher level of pasture grazing typical on UK livestock and dairy farms.

During 2012, nearly 13 per cent of cattle herds in England were under movement restrictions at some point.

The European Commission has approved the measures contained in England's current bTB eradication plan. This is confirmed in a letter sent by the Commissioner for Health and Consumer Protection, Tonio Borg, in January 2013. As part of the Government's plan to eradicate bTB in England, cattle controls were strengthened in July 2012 and January 2013. The changes included reducing the exemptions from testing cattle before they are moved and introducing additional routine testing of cattle.

FACT 7

Badgers that are infected with the disease suffer so culling badgers will improve their welfare



A badger at post-mortem with an advanced TB lesion

It can only be for political reasons that anti-cull groups play down the prevalence of bTB in badgers, or claim that because they do not often show outwardly visible signs they must not be suffering. This is a disease that has become endemic in large parts of the country, and it must be brought under control.

As in cattle, the disease affects the lungs, but also the kidneys. Infected badgers experience more extensive development of TB lesions than cattle. Infected animals will lose weight and body condition, and experience severe breathing problems which limit their ability to forage normally.

It is also important to remember that badger culls are only being proposed for areas where bTB is rife. The existence of a reservoir of the infection in badgers has long been accepted and is uncontroversial. It is misleading to talk of areas where only one per cent of the badgers have bTB as these are not representative of the areas where the disease is a significant problem in cattle.

During previous badger control operations in areas with significant cattle disease (carried out between 1978 and 1982) estimated badger infection rates ranged from 6.9% to 34.5%. Between 33% and 80% of badger social groups were found to be infected.

The RBCT found an average of 16.6% of badgers that were culled were found to be infected (with a range of 1.6% to 37.2%). However, as the Defra Minister David Heath explained in reply to a written parliamentary question on October 29 2012, this was likely to be an underestimation of the true prevalence of the disease, as when post-mortems and other examinations were carried out infection rates were found to be almost double.



FACT 8

Scientists accept that culling badgers can reduce bTB in cattle

In April 2011 a meeting was held by Defra to examine the Randomised Badger Culling Trial (RBCT) following continued monitoring of the RBCT areas. It concluded that:

- 1 The science base generated from the RBCT shows that proactive badger culling as conducted in the trial resulted in an overall beneficial effect compared with 'survey only' (no cull) areas on reducing new confirmed cattle herd breakdowns, which is still in evidence five-and-a-half years after the final annual proactive cull.
- 2 The initial detrimental effect on confirmed herd breakdowns observed in the RBCT at the outside edge of the culled areas diminished over time and 12 to 18 months after culling stopped confirmed bTB incidence in cattle is similar to that seen in the survey only areas.

These conclusions were endorsed by Bob Watson (Chief Scientific Adviser, Defra), Nigel Gibbens (Chief Veterinary Officer, Defra), Professor Christl Donnelly (Imperial College London), Professor Chris Gaskell (Royal Agricultural College), Professor Charles Godfray

(University of Oxford), Professor Lord John Krebs (University of Oxford (by telephone)), Professor Sir John Lawton (University of York (by email)), Professor David Macdonald (University of Oxford) Professor Lord Robert May (University of Oxford (by email)), Professor Quintin McKellar (University of Hertfordshire), Professor Mark Woolhouse (University of Edinburgh).

This meeting is clearly minuted and available for the public record. Lord Krebs was among the scientists who endorsed the central conclusions of that meeting. A further conclusion stated that the RBCT represents the "best scientific evidence available from which to predict the effects of a future culling policy". Therefore, quoting statements from scientists who did not attend does not overcome the fact that there is a clear scientific consensus that recognises that reducing the badger population in heavily infected areas will reduce bTB incidence in cattle.

"As epidemiologists, we agree with the Defra chief scientist that badger culling is an 'evidence-based' policy for controlling bovine TB in Britain. We disagree with other, less positive interpretations of that evidence. The evidence comes from a large-scale, long-term, government project — the Randomised Badger Culling Trial. This roughly halved the incidence of TB in cattle herds in the culling area following four to seven annual badger culls."

"For bovine TB in England, where various control measures are already in place, basic epidemiological principles predict that even a small reduction in transmission rate could have large benefits."

Professor Mark Woolhouse, Professor of Infectious Disease Epidemiology, University of Edinburgh, and Professor James Wood, Alborada Professor of Equine and Farm Animal Science, University of Cambridge

(Nature, Volume 498, 27 June 2013, p434 - http://www.nature.com/nature/journal/v498/n7455/full/498434a.html?WT.ec_id=NATURE-20130627)

It is cheaper to cull than to vaccinate badgers and badger vaccination is impractical



The badger vaccine has been shown to be only 55% to 65% effective in badgers and has no effect at all if a badger is already infected. There is also no information at all on whether vaccination of badgers can reduce the incidence of disease in cattle, in stark contrast to the published data on culling.

The Welsh Government has recently finished the first year of its badger vaccination trial, where it spent £945,128 on vaccinating 1,193 badgers. The estimated cost of the full five-year project is in the region of £4,725,000. Costs of nearly £5 million per area are very clearly vastly higher than the estimated £1.45million estimated costs for two cull areas, and the trial may have vaccinated less than half the number of badgers in the area.

Cost estimates for the cull highlighted by anti-cull groups often include figures on how much it will cost to police the cull. This figure is a matter for the government. We suspect that whatever the cost of policing, the figure is likely to be inflated by the risks posed by threats from animal rights activists to disrupt lawfully licensed activities in the pilot areas. Therefore,

the costs of policing the cull should be distinct from the costs of policing animal rights campaigners.

The practical difficulties of trapping badgers for vaccination on a wide scale are often ignored by anti-cull groups. The process needs to be carried out by trained people and the traps have to be visited early in the morning, every day. This is not an activity that, as some anti-cull groups have suggested, could simply be rolled out using independent groups of volunteers.

The sheer numbers involved, the necessity to work every day and over many years, and the specialist training that would be necessary means that it would need to be carried out by organised and co-ordinated groups of professionals and would be very costly and challenging to implement over large areas.

BOVINE TB IS OUT OF CONTROL

WE TAKE ACTION ON TB IN COWS.

8.0 MILLION

CATTLE WERE TESTED IN 2012 IN BRITAIN.

192,769

CATTLE HAVE BEEN CULLED IN GREAT BRITAIN DUE TO TB BETWEEN 2008 AND MARCH 2013



TB IS SPREADING ACROSS THE COUNTRY. THERE WERE

5,103

NEW OUTBREAKS IN BRITAIN DURING 2012.

BADGERS HAVE TB

THE INDEPENDENT SCIENCE GROUP IN 2007 REPORTED THAT

UP TO 1 IN 3

BADGERS IN DISEASE HOTSPOTS HAVE TB. TB HAS TO BE CONTROLLED IN WILDLIFE.

£500 MILLION

THE AMOUNT IT HAS COST THE TAXPAYER TO CONTROL THE DISEASE IN ENGLAND IN THE PAST 10 YEARS.

£662 PER BADGER

WHAT IT COST THE WELSH ASSEMBLY TO VACCINATE EACH BADGER IN 2012.

BADGER VACCINATION

HAS A ROLE TO PLAY IN THE LONG-TERM CONTROL OF THE DISEASE BUT IT

WILL NOT

CURE A BADGER THAT IS ALREADY INFECTED.

£1 BILLION

ESTIMATED COST OF TB CONTROL IN ENGLAND OVER THE NEXT DECADE WITHOUT TAKING FURTHER ACTION.

BADGERS INFECT CATTLE WITH TB

AROUND 50% OF TB CATTLE BREAKDOWNS DUE TO BADGERS IN HOTSPOT AREAS.

NEW ZEALAND HAS SEEN A

94%

REDUCTION IN TB SINCE IT STARTED CULLING POSSUMS IN THE EARLY 1990s.



HEALTHY CATTLE, HEALTHY BADGERS = HEALTHY COUNTRYSIDE

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