

DERBYSHIRE COUNTY COUNCIL

CABINET MEETING

30 July 2013

Report of the Acting Strategic Director – Environmental Services

**DERBYSHIRE COUNTY COUNCIL'S POSITION ON BOVINE
TUBERCULOSIS, BADGER VACCINATION AND BADGER
CULLING ON COUNTY COUNCIL LAND**

(1) **Purpose of the Report** To establish a County Council position with regards to bovine TB, badger vaccination and badger culling, and to seek Cabinet approval to respond to any future proposals for badger vaccination or badger culling on County Council land accordingly.

(2) **Information and Analysis**

A background paper covering the issues raised in this report is provided as appendix A.

Background to bovine TB and control strategies in England

Bovine tuberculosis (bovine TB) is an infectious disease which predominantly affects cattle. In the UK, cattle are routinely tested for TB infection and any cattle which test positive are slaughtered. Farmers receive compensation, and the herd is placed under movement restrictions until it is judged to be free from the disease. Cattle cannot currently be vaccinated against bovine TB as vaccination is not 100% effective, and it is prohibited by EU legislation.

In Great Britain in 2012, more than 8 million cattle TB tests were undertaken, and 38,000 cattle were slaughtered as a result of positive tests¹. In Derbyshire, around 212,000 cattle were tested for TB, and 832 animals were slaughtered. It is understood that, as at the end of March 2013, 203 Derbyshire herds are under movement restrictions related to bovine TB².

Badgers and bovine TB

Although other animal species can also be affected by bovine TB, badgers were first suspected of being the wildlife reservoir for the disease in the 1970s. This led to two decades of targeted badger culling across the country, although by 1996, as rates of bovine TB infections in cattle continued to rise,

¹ Defra/Animal Health and Veterinary Laboratories Agency HVLA, 2013.

² Ibid.

the Government requested a review of all of the issues surrounding badgers, cattle and bovine TB. That review (the 'Krebs report'³) found that whilst badgers appeared to be a significant source of bovine TB infection in cattle, the evidence for this was weak, and further research was required.

The Randomised Badger Culling Trial (RBCT) was set up in response to the Krebs report. The trials took place between 1998 and 2007 and were intended to investigate for the first time, through large-scale field trials, the effects of badger culling on the incidence of TB in cattle.

With regards to badger culling, the 2007 report⁴ reached two key conclusions:

- *“First, while badgers are clearly a source of cattle TB, careful evaluation of our own and others’ data indicates that badger culling can make no meaningful contribution to cattle TB control in Britain. Indeed, some policies under consideration are likely to make matters worse rather than better.*
- *Second, weaknesses in cattle testing regimes mean that cattle themselves contribute significantly to the persistence and spread of disease in all areas where TB occurs, and in some parts of Britain are likely to be the main source of infection. Scientific findings indicate that the rising incidence of disease can be reversed, and geographical spread contained, by the rigid application of cattle-based control measures alone.”*

Government policy and trials of badger culling

In July 2011, the Government launched a programme for the eradication of bovine TB in England⁵. In essence, and in addition to on-going measures to control the spread of TB between cattle, the report was most notable for the inclusion of proposals to begin culling badgers, despite the findings of the Independent Scientific Group on Cattle TB, referred to above.

The Government has since announced that badger culling will begin in two pilot areas, in West Gloucestershire and West Somerset, and it is envisaged that these trials will begin in July/August 2013. The Government has also indicated that if the badger culling trials are deemed to be a success, culling will be rolled out to 40 cull zones over the next four years, targeting 'High Risk' areas. Derbyshire has been identified as falling within a 'high risk' area⁶. The decision to apply for a licence from Natural England to Carry out culling rests with individual landowners in a cull zone.

³ Krebs et al, 1997. *Bovine TB in Cattle and Badgers*. Report by The Independent Scientific Review Group.

⁴ Independent Scientific Group (ISG) on cattle TB (2007) *Bovine TB: The Scientific Evidence*.

⁵ Defra, 2011b. *Bovine TB Eradication Programme for England*

⁶ Defra, 2013c.

Specific concerns have been raised about the method of badger culling proposed in the new trials, with fears raised that it could even promote the spread of bovine TB. Badgers are normally protected by law, but there is evidence that in certain parts of the country, some farmers are already shooting them illegally⁷. Badger baiting also continues to be a problem, including in Derbyshire. There is concern that the promotion of badger culling for bovine TB control could be seen as legitimising illegal badger shooting and persecution, and that such activities may increase as a result.

More generally, the proposed badger culling trials have provoked significant media interest and a sizeable public reaction; as at the first of July 2013, an e-petition on the HM Government website⁸ calling for the cull to be stopped has received more than 250,000 signatures, making it the second most popular e-petition to date.

Badger vaccination

Vaccination has been proposed as a method of tackling bovine TB in badgers, and vaccination trials are under way in parts of England and Wales. Derbyshire Wildlife Trust recently launched a funding appeal seeking £50,000 to facilitate vaccination in Derbyshire. Whilst it is unlikely that funding can be made available to directly support a vaccination programme, the County Council is a significant land holder and could allow vaccination on its land.

Although vaccination will not treat TB in badgers which are already infected, research has shown that vaccination provides some protection to badgers, reduces the severity of the disease, and significantly reduces the spread of the disease between vaccinated badgers and unvaccinated cubs, and it is believed that badger vaccination should reduce the risk to cattle from badger-to-cattle transmission^{9, 10}. Badger vaccination is therefore considered to be a publically acceptable measure which could help tackle TB in badgers and reduce the occurrence of the disease in cattle, with no known negative effects.

Summary

In anticipation of future badger culls, the County Council needs to establish a position on the above issues, and whether to allow either badger culling or vaccination on County Council land. Scientific evidence has demonstrated that whilst badgers do play a role in the spread of bovine TB, culling badgers is likely to have a negligible effect on controlling the spread of the disease, and could increase rates of infection. Conversely, badger vaccination has no known negative consequences, but is publically acceptable.

⁷ Morris, S. 2013

⁸ <http://epetitions.direct.gov.uk/petitions/38257>

⁹ Bovine TB Science Review Group (2011)

¹⁰ Chambers et al (2011).

(3) **Financial Considerations** There are no financial considerations associated with this report.

In preparing this report the relevance of the following factors has been considered: legal, prevention of crime and disorder, equality and diversity, human resources, environmental, health, property and transport considerations.

(4) **Key Decision** No.

(5) **Call-In** Is it required that call-in be waived in respect of the decisions proposed in the report? No.

(6) **Background Papers**

- Krebs et al, 1997. Bovine Tuberculosis in Cattle and Badgers. Report by the Independent Scientific Review Group.
- Independent Scientific Group (ISG) on cattle TB (2007) *Bovine TB: The Scientific Evidence. A Science base for a Sustainable Policy to Control TB in Cattle: An Epidemiological Investigation into Bovine Tuberculosis.*
- Defra, 2011b. *Bovine TB Eradication Programme for England*
- *A Charter for Animal Welfare*, Derbyshire County Council 1989.

Other documents referred to in the report are fully referenced in Appendix B, and are available on request. Officer contact details – Tom French, extension 39784.

(7) **OFFICER'S RECOMMENDATIONS** That Cabinet:

- 7.1 Notes the suffering and financial hardship that bovine TB causes to farmers and their families and the animal welfare issues associated with the disease.
- 7.2 Notes the strong public concern for badgers and the sensitivities associated with culling.
- 7.3 Notes the concerns that have been raised that the currently proposed methods of badger culling may have little or no beneficial impact on the occurrence and spread of bovine TB, and may exacerbate the situation.
- 7.4 Supports the Derbyshire County Council position on these issues, which includes:
 - i) supporting the principle of badger vaccination as a practical measure to reduce the spread of bovine TB, and allowing vaccination to occur on County Council land.

- ii) maintaining the view that a nationwide badger vaccination programme should be supported, coordinated and funded as part of the central government bovine TB control strategy, which also includes improved cattle testing, improved biosecurity, and the development of cattle vaccinations.
- iii) opposing badger culling which evidence shows may exacerbate the spread of TB, and prohibiting badger culling on Derbyshire County Council land.
- iv) not permitting badger culling to take place on land owned by the County Council.

Mike Ashworth
Acting Strategic Director – Environmental Services

Appendix A

Badgers and bovine TB – Background and summary of issues

Background

Bovine tuberculosis (bovine TB) is an infectious disease which predominantly affects cattle. It is caused by the bacterium *Mycobacterium bovis* (*M. bovis*), which can also infect and cause TB in other animal species including badgers, deer, goats, pigs, camelids (llamas and alpacas). *M. bovis* is closely related to but distinct from *Mycobacterium tuberculosis*, the principle cause of tuberculosis in people. Whilst *M. bovis* was a historical cause of TB in people, this is now very rarely the case¹¹.

Cattle cannot currently be vaccinated against bovine TB as vaccination is not 100% effective, and it is prohibited by EU legislation. This is because vaccinated cattle cannot be differentiated from cattle infected with TB¹². It is hoped that in time, a reliable test which can differentiate between infected and vaccinated animals (a so-called DIVA test) will be developed.

In the UK, as part of measures intended to check the spread of bovine TB, cattle are routinely tested for TB infection. When cattle test positive for TB, they are slaughtered, the farmer receives compensation, and the herd is placed under movement restrictions until the herd is judged to be free from the disease.

In Great Britain in 2012, more than 8 million cattle TB tests were undertaken, and 38,000 cattle were slaughtered as a result of positive tests¹³. The majority of the cattle slaughtered (28,000 cattle) were from English herds, and the vast majority of those were in the west and south-west of England, which has historically had by far the most significant problems with bovine TB. Defra has estimated that over the last ten years, bovine TB has cost around £500m in cattle testing, compensation and other expenses, and that these costs could rise to more than £1bn over the next decade¹⁴.

In Derbyshire, more than 212,000 cattle were tested for TB in 2012, and 832 animals were slaughtered. It is understood that, as at the end of March 2013, 203 Derbyshire herds are under movement restrictions related to bovine TB¹⁵.

¹¹ Health Protection Agency (2012)

¹² Defra, 2013a.

¹³ Defra/Animal Health and Veterinary Laboratories Agency HVLA, 2013.

¹⁴ Defra, 2013b.

¹⁵ Defra/Animal Health and Veterinary Laboratories Agency HVLA, 2013

The history of bovine TB

Tuberculosis in cattle is not a new phenomenon, and rates of infections are currently much lower than they would historically have been. In the 1930s, it was estimated that 40% of cows in UK dairy herds were infected with bovine TB¹⁶. *M. bovis* infections were then passed on to people, who were drinking unpasteurised milk from those infected herds. At that time it was estimated that there were around 50,000 new cases of human *M. bovis* infections every year - and around 2,000 people per year died in the UK as a result of bovine TB¹⁷.

The widespread introduction of the pasteurisation of milk from the 1930s onwards had a dramatic impact on the incidence of *M. bovis* in people, whilst subsequent controls on the sale of unpasteurised milk led to further reductions in human cases of *M. bovis* infection. *M. bovis* infections now account for less than 1% of cases of human TB¹⁸, and it is generally accepted that the current risk of human infection with *M. bovis* can be considered negligible¹⁹.

From the 1930s onwards, efforts were also being made to reduce the incidence of *M. bovis* within the national herd. Starting in 1935, a national TB eradication programme began, with voluntary TB testing, slaughter of cattle testing positive for TB, and financial incentives for herds certified as TB free – known as attested herds. A compulsory eradication programme began in 1950 on an area by area basis, with cattle from ‘TB free’ (attested) areas used to restock herds in the worst affected areas.

By the 1960s, the whole of the UK had been declared ‘attested’. Although bovine TB had not been eradicated, the annual incidence of new infections of bovine TB in herds had been reduced to around one herd in 50²⁰. A continuing testing and slaughter programme meant that by the mid-1990s, the Ministry for Agriculture, Fisheries and Food (MAFF) estimated that the annual incidence of bovine TB (recorded as ‘herd breakdowns’ – when one or more cows in a herd are recorded as having TB) was down to just 0.41% in Great Britain²¹.

¹⁶ Krebs et al, 1997. *Bovine TB in Cattle and Badgers*. Report by The Independent Scientific Review Group.

¹⁷ Ibid

¹⁸ Health Protection Agency (2012)

¹⁹ Krebs et al, 1997.

²⁰ Ibid

²¹ Ibid

Badgers and bovine TB

In the early 1970s, it was felt that the persistence of bovine TB in certain parts of the country suggested that cattle were being infected with TB from another source, and a wildlife reservoir of the disease was suspected²². Badgers were first identified as having a potential role to play in the spread of bovine TB at that time. Although a number of species of wild animals were found to be capable of being infected with *M. bovis* (including foxes, rats, ferrets and several deer species) badger were implicated as being the wildlife reservoir for the disease²³, and this lead to two decades of targeted badger culling across the country, from the mid-1970s onwards.

In 1996, as rates of bovine TB infections in cattle again started to rise and amid fears that badger culling strategies were not working, the Government asked Professor John Krebs to undertake a review of all of the issues surrounding badgers, cattle and bovine TB. The review resulted in a report (the 'Krebs report'²⁴) written by Professor Krebs and the Independent Scientific Review Group, which was published in 1997.

The Krebs report found that the evidence supported the view that badgers are a significant source of bovine TB infection in cattle. However, the report also found this evidence to be comparatively weak (consisting of correlations rather than demonstrating cause and effect) and that it was not possible to determine what contribution badgers actually made to cattle infection. It also found that despite two decades of badger culling, it was impossible to determine how successful badger control had been in reducing the incidence of bovine TB. As a result, the Krebs report recommended that further research was required, particularly in relation to badger culling.

The Randomised Badger Culling Trial (RBCT) was set up in response to the Krebs report, and the trials were designed, overseen and analysed by the Independent Scientific Group on Cattle TB. The trials took place between 1998 and 2007 and were intended to investigate for the first time, through large-scale field trials, the effects of badger culling on the incidence of TB in cattle. The approach used was to compare three methods: Proactive Culling – active, annual culling of badgers on all accessible land; Reactive Culling – culling badgers on and adjacent to farms where a TB outbreak had occurred; and Control Areas, where badgers were surveyed but not culled.

²² Ibid

²³ Ibid

²⁴ Ibid

The results of the RBCT trials were reported in 2007²⁵, and the findings were stark:

- Reactive culling was associated with an approximately 20% *increase* in the incidence of cattle infected with TB; because of this negative impact, trials in reactive culling were suspended early.
- Proactive culling resulted in an estimated 23% reduction in the cattle incidence of TB within the culling areas – but an estimated 25% *increase* in the incidence of TB in adjacent, non-culling areas.
- Overall, it was demonstrated that proactive culling, which involved carefully controlled, intensive and sustained badger culling, could achieve only modest reductions in the incidence of TB in cattle. More recently²⁶, it has been estimated that over a 9 year period (5 years' culling plus a 4-year post-cull period), culling over an area of 150km² could be expected to lead to an average 16% reduction in TB incidence in the local area.

The unexpected increases in incidences of bovine TB in cattle in areas adjacent to (and even within) culling areas was attributed to the 'perturbation effect'. This can be described as the disruption of the social organisation or structure of badger populations in areas where trapping and culling has taken place, which encourages badger movement within, into and out of the cull zones and adjacent areas, and which can promote the spread of any diseases the badgers may carry.

With regards to badger culling, the 2007 report²⁷ reached two key conclusions:

- *“First, while badgers are clearly a source of cattle TB, careful evaluation of our own and others’ data indicates that badger culling can make no meaningful contribution to cattle TB control in Britain. Indeed, some policies under consideration are likely to make matters worse rather than better.*
- *Second, weaknesses in cattle testing regimes mean that cattle themselves contribute significantly to the persistence and spread of disease in all areas where TB occurs, and in some parts of Britain are likely to be the main source of infection. Scientific findings indicate that the rising incidence of disease can be reversed, and geographical*

²⁵ Independent Scientific Group (ISG) on cattle TB (2007) *Bovine TB: The Scientific Evidence*.

²⁶ Defra (2011a)

²⁷ Independent Scientific Group (ISG) on cattle TB (2007)

spread contained, by the rigid application of cattle-based control measures alone.”

Government policy and trials of badger culling

In July 2011, the Government launched a document outlining its approach to a bovine TB eradication programme for England²⁸. In essence, and in addition to on-going measures to control the spread of TB between cattle, the report was most notable for the inclusion of proposals to cull badgers, despite the findings of the Independent Scientific Group referred to above.

In January 2012, the Secretary of State for the Environment, Food and Rural Affairs announced that badger culling would begin in two pilot areas, in West Gloucestershire and West Somerset; in autumn 2012, Natural England issued the licences required to allow the killing of badgers in those areas. It is envisaged that the culling in the pilot areas will begin in July/August 2013, will take around six weeks to complete, and will be repeated annually for four years. The current Secretary of State for the Environment, Food and Rural Affairs, Owen Paterson, has indicated that if the badger culling trials are deemed to be a success, the government intends to roll out culling to 10 new cull zones next year, and 10 more in each of the three years after that²⁹.

On 4 July 2013, the Government launched a consultation on a ‘Draft Strategy for Achieving “Officially Bovine Tuberculosis-Free” Status for England’. Although this document provides further information about previously announced measures, it also presents new details about how the Government intends to try to eradicate TB in England. For the first time, it introduces the concept of ‘High Risk’ and ‘Low Risk’ areas for bovine TB, as well as ‘Edge areas’ between the two – Derbyshire falls within the proposed ‘High risk’ area. The draft strategy advocates different approaches to the control and eradication of bovine TB in these three different risk areas, and it is understood that if the culling trials are deemed to have been successful, the roll out of new cull zones would be targeted towards ‘High risk’ areas³⁰.

It should be noted that the purpose of the proposed trials is not to assess the benefits of badger culling in terms of reducing TB infections amongst cattle, but to examine the effectiveness (in terms of badger removal), humaneness and safety of culling using the methods proposed.

²⁸ Defra, 2011b. *Bovine TB Eradication Programme for England*

²⁹ Grey, L. 2013 *Badger cull 'could last 25 years'*

³⁰ Defra, 2013c.

The proposed badger culling trials have provoked significant media interest and a sizeable public reaction; as at the first of July 2013, an e-petition on the HM Government website³¹ calling for the cull to be stopped has received more than 250,000 signatures, making it the second most popular e-petition to date. Although the proposed badger cull has generally been supported by farming bodies such as the NFU³² and the British Veterinary Association³³, it has been firmly opposed by the RSPCA³⁴, the Wildlife Trusts³⁵, and a coalition of wildlife and animal welfare groups³⁶ including the Badgers Trust, the League Against Cruel Sports and the Humane Society International.

Specific concerns have been raised about the method of badger culling proposed in the new trials. Culling undertaken as part of the original RBCT trials involved trapping badgers in baited cages and dispatching them from there. As well as that method, the newly proposed trials allow for 'controlled shooting' of badgers – the shooting of free-ranging badgers out in the field – as a means of potentially reducing the costs of the cull. As significant concerns have previously been raised by the various expert panels about the potential for 'perturbation effects' to cause increases rather than decreases in TB in cattle, there are additional concerns that the inclusion of the previously untested method of free-shooting could significantly exacerbate the perturbation effect, and possibly compromise the effectiveness of culling, or even increase the spread of TB.

Badger vaccination

The Wildlife Trusts (the umbrella under which 47 local Wildlife Trusts operate) are actively opposing the badger cull, and promoting badger vaccination as a practical measure to tackle bovine TB in badgers. Currently, badgers have to be trapped in order to be vaccinated with an injectable BCG vaccine, although oral vaccines, which would be cheaper to deploy, are being researched.

Gloucestershire Wildlife Trust began a five year badger vaccination programme in 2011³⁷, whilst 10 county Wildlife Trusts, including Derbyshire Wildlife Trust, are intending to undertake badger vaccinations next year. In March 2012, the Welsh Government also announced plans for a five year badger vaccination programme within its bovine TB Intensive Action Area: to

³¹ <http://epetitions.direct.gov.uk/petitions/38257>

³² <http://www.nfuonline.com/science-environment/bovine-tb/>

³³ http://www.bva.co.uk/activity_and_advice/Bovine_Tuberculosis%20.aspx

³⁴ <http://www.rspca.org.uk/getinvolved/campaigns/wildlife/badgers>

³⁵ <http://www.wildlifetrusts.org/badgers-and-bovineTB>

³⁶ <http://www.teambadger.org.uk/index.html>

³⁷ <http://www.gloucestershirewildlifetrust.co.uk/what-we-do/bovine-tb/bovine-tb-badgers-and-trust>

date, 1,400 badgers have been vaccinated³⁸. Derbyshire Wildlife Trust recently launched a funding appeal seeking £50,000 to facilitate vaccination in Derbyshire.

Although vaccination will not treat TB in badgers which are already infected, research has shown that vaccination provides some protection to badgers, reduces the severity of the disease, and significantly reduces the spread of the disease between vaccinated badgers and unvaccinated cubs, and it is believed that badger vaccination should reduce the risk to cattle from badger-to-cattle transmission^{39, 40}.

Proponents of badger vaccination note that it is a publically acceptable measure which could help tackle TB in badgers and reduce the occurrence in cattle, with no known negative effects. Whilst badger vaccination does come at a cost (estimated to be around £2,250 per square kilometre per year⁴¹), recent press reports⁴² have suggested that the potentially significant costs of policing badger culls could make badger culling more expensive than vaccination.

³⁸ Welsh Government (2012) *Badger vaccination total tops 1400*

³⁹ Bovine TB Science Review Group (2011)

⁴⁰ Chambers et al (2011). *Bacillus Calmette-Guérin vaccination reduces the severity and progression of tuberculosis in badgers*

⁴¹ Defra, 2011c. *Measures to address bovine TB in badgers – Impact Assessment*.

⁴² Carrington, D. (2013). *Badger vaccination 'would be cheaper to implement than cull'*

**Appendix B – Full references for documents cited in the Cabinet report
“Derbyshire County Council’s position on bovine tuberculosis, badger
vaccination and badger culling on County Council land”**

- Health Protection Agency (2012) Tuberculosis in the UK: Annual report on tuberculosis surveillance in the UK, 2012. London: Health Protection Agency, July 2012. Downloaded from http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317134913404
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- Grey, L. 2013 *Badger cull 'could last 25 years'* [online] 26th May 2013, Available at:
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<http://www.guardian.co.uk/environment/2013/jun/03/badger-vaccination-cheaper-than-cull>
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<http://www.guardian.co.uk/environment/2013/jan/17/livestock-farmers-kill-badgers-study>