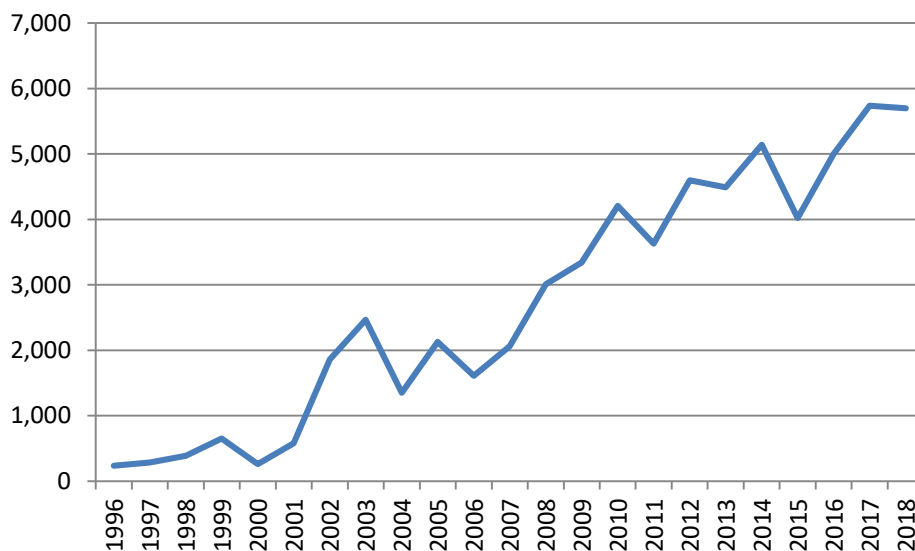


Supporting information on badgers and bovine tuberculosis (bTB)

October 2020

Bovine tuberculosis has been steadily rising in England since the 1980s. Defra recognise that “the risk and consequences of [bTB] infection [is] one of the greatest factors affecting the livelihoods of numerous farmers¹”. Whilst reported cases are highest in the South West of England, there has been a similar trend locally², with a steady rise in cattle sent to slaughter due to bTB since 1996 in the 6 counties within which the Peak District sits (Fig 1). Since 1996 62,769 cattle have been sent to slaughter due to bTB within these six counties. The majority have been in Staffordshire (59%), with 24% in Cheshire, 16% in Derbyshire and less than 1% in the remaining three counties.

Fig. 1- Number of cattle sent to slaughter due to bTB outbreaks in the 6 counties within which the Peak District falls, 1996-2018²



The Krebs report concluded that there is compelling evidence that badgers are a significant source of bTB infection in cattle³, though the incidence of bTB in badgers is unclear due to the difficulty in diagnosis. Figures from the Randomized Badger Culling Trials (1998-2005) in proactive cull areas averaged 13.6% (range 1.6% to 37.2%), with an average of 8.2% in the Derbyshire/Staffordshire area⁴. Limitations of diagnosis suggest it is 54.6% reliable in detecting bTB⁵, which calculates to an average figure of 24.9% incidence across all trial areas and 15% in the Derbyshire/Staffordshire area.

Estimating badger numbers is imprecise; however the best available evidence suggests that the population in England and Wales stood at approximately 485,000 badgers in 2017, an increase of around 88% since the 1980s⁶.

Following the Randomised Badger Culling Trials Defra published a Strategy for achieving Officially Bovine Tuberculosis Free status for England in April 2014⁷. In addition to cattle-based measures and farm biosecurity this proposed both vaccination and culling of badgers to reduce the population in High Risk Areas (which includes Staffordshire); and badger vaccination (backed by a financial support scheme) in Edge Areas (which includes Derbyshire and Cheshire) with some possible culling. Defra recognise that, based on experience to date, there is uncertainty about the relative effectiveness of vaccination and culling. In a policy paper reviewing the Bovine TB Strategy updated in 2019¹ they also recognize that “moving from lethal to non-lethal control of the disease in badgers is highly desirable”.

Badger Culling

Trial culling (1998-2005) showed an average reduction in bTB incidence in cattle of 28.3% within the cull areas over the cull period and the following 5 years, and an average increase of 25% in the surrounding 2km area during the cull period, due principally to increased badger movements (however this increase did not persist after the cull period)⁸.

Advice from Defra is that at least 70% of badgers need to be culled within an area in order to achieve an effective reduction in transmission of bTB to cattle. Conversely there is a requirement under the Bern Convention that any culling should “*not be detrimental to the survival of the population concerned*”. Licences for culling therefore specify a minimum and maximum number of badgers to be culled in any specific cull area, usually within the range of 70-95% of the initial population. There is also a requirement that culling continues for a period of four years.

In 2017 the national cost of culling 19,274 badgers in 21 cull areas⁹ (including policing costs) was approximately £6.6 million¹⁰ (approximately £343/badger).

Individual cull areas are not geographically identified due to the risk of disruption by those opposed to culling. However, since culling commenced in 2013 there have been 32 cull areas in England, principally in the South West, but extended to Peak District local counties as follows:

- One area in Cheshire (736 badgers culled in 2017, 472 in 2018)^{9,11}
- One area in Staffordshire (3,979 badgers culled in 2018)¹¹

Badger Vaccination

The impact of vaccination on reducing the incidence of bTB in cattle is unknown; however trials have shown that¹²:

- Vaccination reduces the rate of new infections in badgers by 76%
- Vaccinating more than $\frac{1}{3}$ of adults in a badger social group reduces new infections in unvaccinated badger cubs by 79%
- Vaccination reduces the likelihood of badgers developing lesions or excreting bTB bacteria, reducing the risk of transmission
- As badgers typically live for three-five years, over a typical four year programme vaccination should reduce new cases of bTB as infected animals die off.

In 2018 641 badgers were vaccinated in England. Locally, Staffordshire, Derbyshire and Cheshire Wildlife Trusts all run vaccination schemes (the former without government

funding as it lies within the High Risk Area, the latter two with 50% government funding as they fall within the Edge Area). This includes areas within the Peak District National Park.

Vaccination programmes make extensive use of trained volunteers. The cost based on experience to date is approximately £80/badger/year (£320/badger over a typical four-year programme)¹³.

Biosecurity measures

Biosecurity is about minimising the risk of introduction of disease onto farms. In the context of bovine TB control, it involves stopping TB-infected cattle entering the herd, restricting contact between cattle and badgers, and reducing the TB-risk from neighbouring cattle herds.

In their 2019 policy review paper¹ Defra recognised that “A very unfortunate consequence of the controversy around badger culling... has been a deflection of focus from what can be done by the individual farmer and by the livestock industry to help control the disease. In particular, the poor take up of on-farm biosecurity measures and the extent of trading in often high-risk cattle is, we believe, severely hampering disease control measures. All the industry bodies we spoke to recognised this as an issue and saw the need for industry to take more ownership of the problem... There are many relatively cheap [biosecurity measures] a farmer can do to separate cattle from badgers, cattle from other cattle on neighbouring holdings, and potentially infected from uninfected cattle. These are ‘no regret’ biosecurity options whose take up is disappointingly low”.

References

- 1 <https://www.gov.uk/government/publications/a-strategy-for-achieving-bovine-tuberculosis-free-status-for-england-2018-review/bovine-tb-strategy-review-summary-and-conclusions>
- 2 <https://www.gov.uk/government/statistical-data-sets/tuberculosis-tb-in-cattle-in-great-britain> (data extracted for Derbyshire, Staffordshire, Cheshire, S Yorkshire, W Yorkshire & Greater Manchester)
- 3 <http://www.bovinetb.info/docs/krebs.pdf>
- 4 https://webarchive.nationalarchives.gov.uk/20130402175639/http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/isg/report/final_report.pdf
- 5 <https://veterinaryrecord.bmj.com/content/163/16/473>
- 6 <https://www.nature.com/articles/s41598-017-00378-3>
- 7 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/300447/pb14088-bovine-tb-strategy-140328.pdf
- 8 <http://www.bovinetb.info/docs/corporate-consult-tb-control-measures-100915-tb-control-measures-annexb.pdf>
- 9 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670223/badger-control-monitoring-summary-2017-final.pdf
- 10 <https://www.gov.uk/government/publications/bovine-tb-government-badger-control-costs/government-badger-control-costs-2017>
- 11 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765439/badger-control-monitoring-2018.pdf
- 12 <https://tbhub.ahdbdigital.org.uk/wp-content/uploads/2018/03/AR-factsheet-badger-vaccination.pdf>
- 13 [Derbyshire Wildlife Trust \(pers. comm.\)](#)

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