Agriculture and Rural Development Committee Bovine TB review

Ulster Wildlife Trust written evidence

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The Ulster Wildlife Trust welcomes that the NI Assembly's Agriculture and Rural Development Committee is carrying out a review of Bovine TB and having been involved in the issue for considerable time, we are pleased to respond to the call for written evidence and look forward to further engaging with the review.

For ease of review by committee, this document is set out using the subjects suggested in the committee's invite letter, and is limited to 2000 words as instructed.

1.0 Ulster Wildlife Trust Introduction

The Ulster Wildlife Trust is NI's largest locally based nature conservation charity. We are supported by over 11,500 members from across Northern Ireland. Our aim is a Northern Ireland, rich in wildlife and valued by all. We work towards this aim with people and places across NI, for both living landscapes and living seas. We have been a member of the bTB badger stakeholder group, and have a considerable interest in the issue, as do the other Wildlife Trusts across the UK.

2.0 UWT position summary:

The Ulster Wildlife Trust believes the priorities for eradicating the disease should be –

1. To continue to improve on-farm bio-security measures to reduce cattle to cattle and cattle to badger transmission.
2. To implement a short to medium term programme of badger vaccination to reduce bTB transmission from badgers to cattle.
3. Facilitate the development of a cattle vaccine along with a change to EU legislation to allow a cattle vaccine to be used.

3.0 Biosecurity measures

It is now widely agreed that tight biosecurity measures are essential if we are to limit the spread of bTB within herds, as well as containing outbreaks within geographical areas. This means implementing measures such as:

- Limiting contact between cattle and local wildlife, particularly badgers by 'badger proofing' sheds and feeding areas, and fencing off setts where appropriate.
- Carrying out frequent bTB testing and subsequently isolate and slaughter infected cattle
- Eliminating the spread of bTB between herds with measures such as pre-movement testing

A key activity in moving NI closer to best practice regarding biosecurity and bTB, has to be understanding the current practices and identifying any correlation between activity and outbreaks. It is encouraging to note the bTB research budget committed in the Programme for Government by DARD, and we hope that this can be instrumental in finding a solution. We also look forward to the results of the Co Down biosecurity study which are due out 'later this year'.[1]

Bio-security measures to exclude badgers from cattle in farmyard buildings have proven to be achievable and effective at reducing potential points of contact. The Central Science Laboratory (CSL) in York conducted an experiment to assess whether it was possible to reduce contact between badgers and cattle within farmyard buildings and what the likely cost of such measures would be.[2]

The methods used to exclude badgers from farm buildings in which cattle and cattle feed were housed were solid metal gates, gates with adjustable metal panels, solid metal fencing, feed bins and electric fencing. Badger activity was monitored using motion-triggered, infrared cameras for at least 365 nights on each of the farms in the study. Comparing with controls, CSL discovered that badgers were not able to access buildings if exclusion measures were used. When consistently employed, these measures were 100% effective in preventing badgers accessing buildings. The average cost per farm of implementing these badger exclusion measures was £4045. We would also encourage the Department to consider biosecurity measures for inclusion in any future grant-aided programmes, e.g. the Farm Modernisation programme.

Research has shown that the spread of bTB *between* herds is most likely to occur when cattle are transported around the countryside.[3] If infected animals are moving around the country or between herds, it is clear that bTB will continue to spread. Movement of animals between farms is a critical factor in the increase in bTB, and cattle controls were enhanced in NI following the 2002 TB Policy Review, since this there has been a 50% decrease in bTB.

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[1] http://www.dardni.gov.uk/tb-biosecurity-study-questions-and-answers-leaflet.pdf

[2] An experiment to assess the cost-effectiveness of farm husbandry manipulations to reduce risks associated with farmyard contact between badgers and cattle - SE3119 2009, available here: randd.defra.gov.uk/Document.aspx?Document=SE3119_8676_FRP.doc

[3] Gilbert, M., et al., Cattle movements and bovine tuberculosis in Great Britain. *Nature*, 2005. 435(26): p. 491-496; and: Carrique-Mas, J.J., et al., Risk of bovine tuberculosis breakdowns

A recent article in the Farmer's Journal quoted a DARD Official as saying that biosecurity in Northern Ireland's farms was not something to be proud of. It is clear that further work can be done on improving biosecurity on farms here.

4.0 Vaccinations

Vaccination of cattle and badgers has the potential to reduce bTB without the negative impacts of perturbation arising from a badger cull (info on perturbation below). Since 1998, the UK Government has invested £30 million in developing TB vaccines for cattle and badgers. The current status of vaccine development is:

- Cattle vaccine has been developed but requires regulatory approval and changes to EU legislation to permit its use;
- Injectable BadgerBCG vaccine available since 2010; [4]
- Oral badger vaccine being developed but needs to be tested before potential submission to regulatory bodies.
- The UK Government has now completed development of a cattle vaccine and submitted an application in January 2012 to the Veterinary Medicines Directorate (VMD) for marketing authorisation. Defra has also made progress in the development of a Differentiate Infected from Vaccinated Animals (DIVA) test and expects to seek certification later in 2012.

Cattle in the UK are routinely vaccinated against diseases, but the use of TB vaccine is banned under EU law (*Directive 78/52 EEC, 1977*). This is because the bovine BCG vaccine interferes with the mandatory tuberculin skin test. Cattle that had been vaccinated would technically fail the test, meaning they couldn't be declared Officially TB Free. There is an opportunity to lift the EU prohibition on vaccination of cattle against TB through the development of the new European Animal Health Law currently under consideration. The Wildlife Trusts have recently initiated meetings with the European Commission's Directorate General for Health and Consumers to discuss removal of EU regulatory barriers to cattle vaccination.

Vaccination of badgers is a practical and immediate step that the NI government should commit to as a viable alternative to a cull. Injectable Badger Bacillus Calmette-Guérin (BadgerBCG) is identical to the BCG vaccinations with which school children were immunised aged 13 between 1953 and 2005.

[4] Bovine TB Eradication Programme for England, Defra 19 Jul 2011: www.defra.gov.uk/publications/files/pb13601-bovinetb-eradication-programme-110719.pdf

Field trials of the BadgerBCG vaccine have been taking place for years and there is clear evidence that deployment of the vaccine is effective in reducing bTB in badgers. For example, in 2008, a vaccination field trial led by The Food and Environment Research Agency (FERA), involving a population of more than 800 badgers in a high-risk area of Gloucestershire, demonstrated a 73.8% reduction in the incidence of positive serological TB test results in wild badgers.[5],[6]

The only current method for immunising badgers is via injection; however, Oral Badger BCG is being developed in collaboration with other countries, including the Republic of Ireland and New Zealand and Defra has invested £6m on this research since 2005. It is possible that an oral vaccine could be available as soon as 2015, resulting in potential cost reductions for vaccination programmes.

Ultimately, badger vaccination is a cheaper method than culling. During current small scale studies, Gloucestershire Wildlife Trust has undertaken to keep accurate records of costs.[7]
The resulting estimations of costs showed badger vaccination could be carried out for an average of £51 per hectare, or £765,000 per 150km2. The Gloucestershire Wildlife Trust also calculated the costs of vaccination for their 66 ha farm holding to be approximately £2,856. These costs are, in fact, higher than they would be, should the Government adopt a larger vaccination programme (DEFRA's figures for vaccination are half). It should be noted that cost depends on badger density, ease of access to land and accurate
estimates follow badger activity surveys.

From trial results so far, it is reasonable to conclude that a widespread badger vaccination programme could increase immunity in the badger population and significantly reduce the proportion of infected badgers within 5 years. **It is on this basis that Wales, and ROI have committed to badger vaccination as a replacement for culling of badgers, and indeed the recent**

[5] Report of GCP (veterinary) study on wild badgers 2009, Defra 2009, available here: http://randd.defra.gov.uk/Document.aspx?Document=SE3250b.pdf

[6] Chambers B. et al (2010). "Bacillus Calmette-Guérin vaccination reduces the severity and progression of tuberculosis in badgers", *Proc. R. Soc. B* 22 Jun 2011 vol. 278 no. 1713 1913-1920: rspb.royalsocietypublishing.org/content/278/1713/1913.full.pdf+html

[7] Nature Reserves Badger Vaccine Deployment Programme 2011, Gloucestershire Wildlife Trust: http://www.gloucestershirewildlifetrust.co.uk/sites/wt-main.live.drupal.precedenthost.co.uk/files/GWT-Badger-Vaccination-Deployment-Programme-2011_0.pdf

report from the UK government think tank, the Bow Group recommends that England adopts vaccinations a central to eradication of bTB. [8]

5.0 Dealing with TB in wildlife

It has long been known that TB can be transmitted between cattle, between badgers and between the two species. Other animals that can carry the disease incluxde pigs, camelids, sheep, goats, deer.

Badgers are believed to be one of the main risks of transmission of the disease, largely as their roaming grounds overlap with farms. Badgers are listed in the *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*)[9], which came into place in 1982, to protect European Wildlife and Natural Habitats. They are also protected locally in the Wildlife (NI) Order 1985. Badgers are an important part of NI's natural heritage and the Ulster Wildlife Trust believes we all have a responsibility to ensure that bTB is eradicated from this species of local wild mammal and that government should invest in vaccinations for badgers. Culling is not a long term solution, would be a very costly exercise, would convey a very negative image of farming to the general public, and public opinion would be firmly opposed to a cull.

Much work has been carried out in England to identify if culling of badgers could be part of a long term solution, this included the Randomised Badger Culling Trials (also referred to as the Krebs Trials, 1998-2007.) This work was overseen by an Independent Scientific Group (ISG) which published its final report in 2007.

After years of research involving the culling of approximately 11,000 badgers and a cost to the taxpayer of £50m, the ISG concluded

"After careful consideration of all the RBCT and other data presented in this report, including an economic assessment, we conclude that badger culling cannot meaningfully contribute to the future control of cattle TB in Britain."[10]**This report affirms on this basis that killing badgers could**

[8] http://www.bowgroup.org/files/bowgroup/Badger%20Culling%20Bow%20Group%20Target%20Paper%20-%20Mar%202012.pdf

[9] Convention on the Conservation of European Wildlife and Natural Habitats 1979: http://conventions.coe.int/treaty/en/Treaties/Html/104.htm

[10] Bovine TB: The Scientific Evidence, Final Report of the ISG on Cattle TB: http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/isg/report/final_report.pdf

actually increase the spread of bTB in areas around the cull, making matters worse, facts which are accepted in Defra's Nov 2011 impact assessment[11]

Having considered the available scientific evidence, we believe there will be no winners from continuing to pursue badger culling as an option. To pursue badger culling is not a viable long-term solution - it ignores the main body of scientific evidence relating to culling, which shows that at best it is ineffective, and at worst can exacerbate the problem through perturbation.

Perturbation is used to describe the effect upon the socio-spatial organisation of badger populations, whereby badger groups move into neighbouring setts where culling has taken place, and the immigrant badgers are then exposed to infection and risk further spread of the disease[12]– see figure 1.

Lord Krebs, the architect of the Randomised Badger Culling Trials informed the Bow Group in Feb 2012 that *"Defra has said it wishes its policy for controlling TB in cattle to be science-led. There is a substantial body of scientific evidence that indicates that culling badgers will not be an effective or cost-effective policy. The best informed independent scientific experts agree that culling on a large, long-term, scale will yield modest benefits and that it is likely to make things worse before they get better. It will also make things worse for farmers bordering on the cull areas. Furthermore, it is not a credible national strategy. It is hard to imagine that the policy could be deployed over the whole 38,000km2 of TB affected farmland, which would involve killing perhaps a quarter of the UK badger population, year after year. Instead the focus should be on further improvements to bio-security and vaccination. The long-term aim must be a cattle vaccine with a marker to distinguish vaccinated from the infected cattle."*

[11] Measures to address bovine TB in badgers, Defra 30 Nov 2011, available here: http://archive.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/tb/documents/bovine-tbimpact-assessment.pdf

[12] Woodroffe, R., Donnelly, C.A., Cox, D.R., Bourne, F.J., Cheeseman, C.L., Delahay, R.J., Gettinby, G., McInerney, J.P. & Morrison, W.I. (2006). Effects of culling on badger (*Meles meles*) spatial organization: implications for the control of bovine tuberculosis. *Journal of Applied Ecology*. **43**: 1-10.

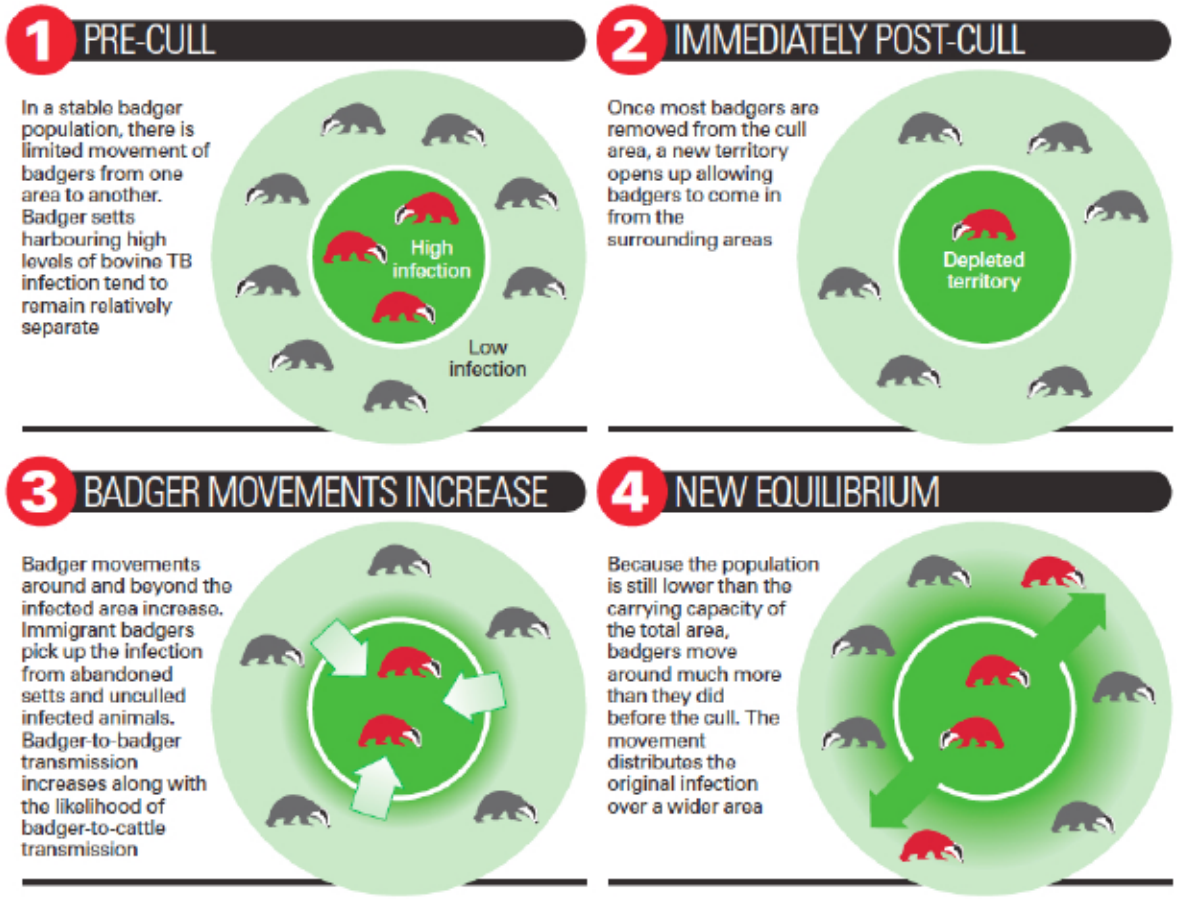

Figure 1: The Perturbation Effect – source The Wildlife Trusts

6.0 Any other issue

We would like the Committee in their review of bTB, to consider the wider impact on the ecosystem of removal of badgers in any area. A study carried out by the Central Science Laboratory (of York) has concluded that removal of badgers from an ecosystem does have a knock-on effect, with a main observation being a significant increase in fox numbers where badgers have been culled, bringing with it a whole new set of problems[13]. Increase in fox numbers in turn has an effect on ground nesting birds and hares, and foxes are often held responsible for predating upon agricultural livestock such as piglets, poultry and lambs.

[13] The ecological consequences of removing badgers from an ecosystem - ZF0531 2007, available here: randd.defra.gov.uk/Document.aspx?Document=ZF0531_6288_FRP.doc

7.0 Conclusion

The Ulster Wildlife Trust fully supports the aim of eradication of bTB – a disease which has brought significant hardship to many in the farming community and become one of NI's most expensive animal health problems. It is a complex disease, and requires long term commitment from both government and landowners to achieve the ultimate goal of eradication. A stronger preventative approach is needed and a major part of this should be support offered to landowners to improve biosecurity, including guidance and support on badger-cattle separation measures.

We will continue to work with Government, farmers and landowners here to confront this disease, taking a science-based approach.

www.ulsterwildlifetrust.org