



McClelland House  
10 Heron Road  
Belfast  
BT3 9LE

T 028 9045 4094

[info@ulsterwildlife.org](mailto:info@ulsterwildlife.org)  
[www.ulsterwildlife.org](http://www.ulsterwildlife.org)

**xx September 2021**

Dear Minister,

### **Bovine TB Consultation Response**

Please find below the Ulster Wildlife response to the bovine TB consultation. We fully acknowledge the complex and costly nature of the disease and the impact that bTB has on farming families and as such this consultation has been taken very seriously by the charity and carefully considered. We would like to see a solution to bTB and feel that progress is urgent and needs to happen now, however indiscriminate badger culling is not considered to be a proportionate, humane or acceptable way to address this issue when more ethical alternatives exist. Four out of five badgers killed will be healthy which is not publicly acceptable especially for a protected species.

We are also of the view that there is no one size fits all solution or silver bullet in cases where bTB transmission is linked to a wildlife source. The Department needs a tool box of options for different scenarios selected by analysis on a case by case basis with Test, Vaccinate or Remove used routinely as the foundation for any decision making process.

Infection of bTB is most commonly spread by cattle to cattle contact although the bacteria is shed in mucus, saliva, milk and faeces and indirect infection is also possible via shared equipment or contractors. It is acknowledged that badgers can play a role as a secondary host in the spread of TB on or between farms however, in most cases this risk is low compared to cattle-to-cattle transmission. This has been reinforced by numerous studies:

- The independent scientific review of the bTB Strategy completed by a team of experts led by Professor Sir Charles Godfrey<sup>1</sup> published in 2018. This concluded that badger culling can have a "**modest**" effect in reducing cattle TB. This report highlights that DEFRA's policy would lead to more than 40,000 badgers culled annually in addition to the 140,000 badgers already killed and that such high levels of culling may not be publicly acceptable. This is a correct assumption based on the feedback we have received from the public during the consultation period and the signatures on the petitions. Badger culling for bTB has proved to be one of the most divisive and controversial policies of recent times in England and Wales. The expert working group urged the government to accelerate the development of non-lethal controls, such as vaccination.
- RBCT data analysis<sup>2</sup> estimating that 5.7% of transmission to cattle herds is from badgers.
- Martin et al<sup>3</sup> who concluded that infected badgers explained 9-19% of cattle TB incidents in the East of England

From the information provided in the consultation it is not possible to accurately estimate the numbers of badgers that would be culled across the 1200 km sq area proposed, however since DEFRA estimates that a 70% kill rate is necessary and the programme runs for 7 years, the number of badgers culled will be substantial and needs to be professionally modelled by an independent expert ecologist.

In a submission to the TB strategy review, the Zoological Society of London concluded that the best available estimates suggest that badger-to-cattle transmission cause between 1% and 25% of new breakdowns, with 6% most likely<sup>4</sup>. Therefore, at least 75%, and possibly as many as 99%, of TB-affected herds normally acquire infection from other cattle herds. This relatively high rate of cattle-to-cattle transmission is readily explained by inadequacies in the testing programme.

As such, any wildlife intervention needs to be **proportionate, humane and provide a long term sustainable solution**. Indiscriminate culling poses the risk of perturbation - the effects

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<sup>1</sup> Bovine TB Strategy review; Professor Sir Charles Godfrey, FRS (Chair), Professor Christl Donnelly FRS, Professor Glyn Hewinson, Professor Michael Winter OBE, Professor James Wood; [Report to Rt Hon Michael Gove MP, Secretary of State, Defra \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/684823/Report_to_Rt_Hon_Michael_Gove_MP_Secretary_of_State_Defra.pdf)

<sup>2</sup> Donnelly, C.A., Nouvellet, P. The contribution of badgers to confirmed Tuberculosis in badgers in High-Incidence areas in England. PLOS Currents Outbreaks. Edition 1, <https://doi.org/10.1371/currents.outbreaks.097a904d3f3619db2fe78d24bc776098> (2013).

<sup>3</sup> Martin, S. W. et al. The association between the bovine tuberculosis status of herds in the East of England Project Area, and the distance to badger setts, 1988-1993. Prev Vet Med. 31, 113-125 (1997).

<sup>4</sup> Professor Rosie Woodroffe, Eradicating TB from cattle and badgers – a review of evidence. Zoological Society of London – September 2018

of which remain unknown within Northern Ireland. The only reliable local information available on perturbation is through the Test Vaccinate or Remove Pilot Project where social groups remained largely intact therefore no perturbation was experienced.

### **1. Do you agree with the criterion for selecting herds to receive interferon gamma testing?**

The cornerstone of TB control in cattle and other species is the rapid, accurate identification and removal of animals infected with the TB bacterium *Mycobacterium bovis* (*M. bovis*) before they can spread the disease to other animals. Use of the interferon gamma test (IFN- $\gamma$ ) will maximise the probability of detecting bTB-infected animals in cattle herds affected by breakdowns and should be compulsory within the categories outlined given the significant investment made in time, resource and compensation by government through public funds.

The interferon-gamma test is more sensitive than the skin test therefore it is less likely to miss infected animals. On average, with a specificity of 96.6%<sup>5</sup> in practical terms this means 3-4 false positives per 100 disease-free animals tested. This is disconcerting for farmers however, much better than leaving potentially infected animals to transmit to other cattle within the herd or to neighbouring farms if the goal is to drive down the levels of bTB. The tuberculin skin test has a higher specificity of 99.98% which equates to one false positive per 5,000 disease-free animals tested. The main limitation of the tuberculin skin test is its sensitivity. In practice this means that a significant proportion of TB infected cattle can be missed.

The IFN- $\gamma$  (interferon gamma) assay is used in Ireland as an ancillary diagnostic test to the single intradermal comparative tuberculin test (SICTT) to maximise the detection of *Mycobacterium bovis* infected animals in cattle herds. It is also being adopted in England and Wales (compulsory in the latter). Of particular note is the progress that has been achieved in Wales as evidenced in Table 2.2 extracted from the DEFRA Quarterly publication of National Statistics on the incidence and prevalence of tuberculosis (TB) in Cattle in Great Britain published in June 2021<sup>6</sup>

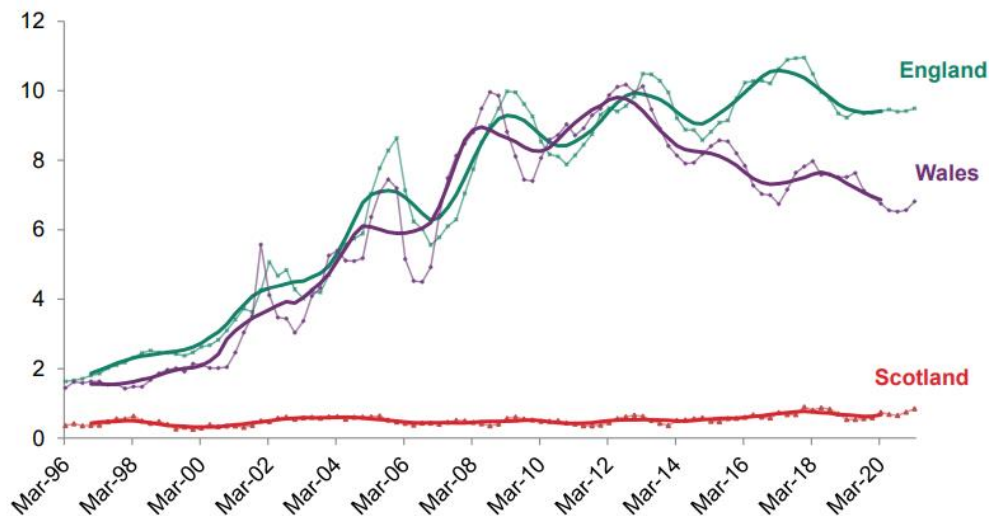
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<sup>5</sup> De la Rua-Domenech R, Goodchild A.T, Vordermeier H.M, Hewinson R.G, Christiansen K.H, Clifton-Hadley R.S. (2006). Ante mortem diagnosis of tuberculosis in cattle: A review of the tuberculin tests,  $\gamma$ -interferon assay and other ancillary diagnostic techniques. *Research in Veterinary Science* 81 (2006) 190–210

<sup>6</sup> DEFRA Quarterly publication of National Statistics on the incidence and prevalence of tuberculosis (TB) in Cattle in Great Britain published in June 2021. [Latest national statistics on tuberculosis \(TB\) in cattle in Great Britain - quarterly - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/latest-national-statistics-on-tuberculosis-tb-in-cattle-in-great-britain-quarterly)

## 2.2 Figures showing Herd incidence since 1996

Figure 1: New herd incidents per 100 herd years at risk of infection during the year - GB, per quarter



We therefore support the proposals for the increased use of interferon gamma provided adequate compensation is provided for the farming community and this takes account of the value and loss of income. Careful consideration needs to be given to the criteria for use to ensure the maximum benefit is obtained from the investment and this does not inflict unnecessary pain on farmers. Below our rationale for supporting these measures:

### Limitations of the SICCT test in identifying all infected cattle

The Single Intradermal Comparative Cervical Tuberculin (SICCT) test has a low to moderate Sensitivity (Se) which can result in a proportion of infected cattle not being identified as infected when the herd is subject to SICCT testing. At standard interpretation the Se range is generally between 50%–80%<sup>7</sup>. A sensitivity of 80% means that 20% of infected cattle would be missed by the test, and at 50% half of the infected cattle would not be detected. Even at Severe Interpretation the values can still be low. In a study into *M bovis*, chronically infected herds in NI conducted in 2018, it was found that the Se values at Severe Interpretation ranged from 49%-60%. The Se can vary depending on a range of factors such as the stage or severity of infection and other circumstances, for example, co-infections

<sup>7</sup> Lahuerta-Marin A<sup>1</sup>, Milne MG<sup>2</sup>, McNair J<sup>2</sup>, Skuce RA<sup>2</sup>, McBride SH<sup>2</sup>, Menzies FD<sup>3</sup>, McDowell SJW<sup>2</sup>, Byrne AW<sup>4</sup>, Handel IG<sup>5</sup>, de C Bronsvort BM<sup>5</sup>. (Aug 2018)

Bayesian latent class estimation of sensitivity and specificity parameters of diagnostic tests for bovine tuberculosis in chronically infected herds in Northern Ireland. <https://www.ncbi.nlm.nih.gov/pubmed/30103911>

from liver fluke, Johnes disease, etc. Indeed cattle in the very advanced stages of disease may respond very poorly to the test, as shown by the example above.

As a result, a proportion of infected cattle can remain in breakdown herds when the herd regains Officially TB Free status (OTF) and movement restrictions are lifted. The presence of these infected, yet undetected cattle in herds which regain OTF can then result in a re-emergence of disease in their own herd, or the translocation of disease to new herds and new areas if these cattle are sold on via auctions, marts or private sales. The disease can also be spread to other herds etc if these cattle attend shows or are hired out for breeding purposes.

Therefore in order to overcome the limitations of the variable Se of the SICCT test it is important to supplement this testing with additional tests which can identify infected cattle at different stages of infection and with a higher Se value, which interferon gamma testing will facilitate. In essence the SICCT test is a useful basic herd screening test, but additional testing is required at the individual animal level to ensure the more effective removal of infected cattle before OTF status is regained.<sup>8</sup>

### **Recurrence**

Further evidence of the need for supplementary testing using interferon gamma is provided by the data which shows how many OTF herds suffer a further breakdown within a short period of time, which indicates that bTB infection was not eliminated from the herd when OTF status was regained. We therefore support the criteria that recognise this situation when herds exhibit more reactors at the first or second check test or via cattle with lesions at routine slaughter.

Given the significant investment by the Department in the costs of testing, quality assurance and compensation, we are of the view that secondary testing should be compulsory where required by the Department.

### **Evidence from use of interferon gamma in the rest of the UK**

Both Wales and England have already deployed increased interferon gamma testing over the past few years in order to increase detection of infected cattle, which have not been identified via SICCT testing.

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<sup>8</sup> <https://tbhub.co.uk/wp-content/uploads/2020/08/AR-factsheet-skin-test-11.08.20.pdf>

**In Wales** there has been a marked increase in the number of IFN- $\gamma$  tests undertaken since 2012 when the use IFN- $\gamma$  was expanded for a variety of situations including use in persistently infected herds, cases with 2 Inconclusive Reactors and in the Low Risk Areas to clear infection. As a result between March 2014 and March 2017 a further 5677 gamma positive cattle were removed. Details of when, where and why IFN $\gamma$  has been used in Wales can be found at the link below. DAERA will already be familiar with this information.

<https://gov.wales/sites/default/files/publications/2017-12/bovine-tb-the-increase-in-slaughtering.pdf.pdf>

Since that report further gamma testing has been undertaken and in 2017 there were 35,660 IFN- $\gamma$  tests identifying 2,314 positives, in 2018 there were 57,607 IFN- $\gamma$  tests identifying 2,869 IFN- $\gamma$  positives and in 2019 (last full year of data) 65,499 IFN- $\gamma$  tests identifying 3,198 IFN- $\gamma$  positives. Data for all of 2020 not yet available.

Data can be found at the link below - see report for December for each year and Table 3b

<https://data.gov.uk/dataset/f48e8d0a-f527-4f69-8aff-b07db7c26f09/interferon-gamma-testing-for-bovine-tuberculosis-monthly-reports-from-april-2016>

**In England** IFN- $\gamma$  testing was used in very low numbers until 2012 and then more widely in the following 2 years. In 2014 more widespread deployment was adopted with a change in policy which introduced IFN- $\gamma$  testing for all confirmed breakdowns in the Low Risk and Edge TB Areas. In 2017, a further policy change led to much greater deployment in the High Risk Area. See Graph on Page 60 of the report in the link below.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/923195/tb-epidemiology-england-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/923195/tb-epidemiology-england-2019.pdf)

In 2017 there were 98,529 IFN- $\gamma$  tests undertaken in England, which identified 5,094 positives, in 2018 there were 193,638 tests undertaken which identified 9,620 IFN- $\gamma$  positives and in 2019 there were 263,774 IFN- $\gamma$  tests undertaken which identified 10,026 IFN- $\gamma$  positives. (See Tables 3b for each year from December reports from the reference above).

### **Conclusion on the use of Interferon Gamma**

In conclusion, the increased use of IFN- $\gamma$  is crucial in addressing infected cattle not identified by SICCT testing, due to the low to moderate sensitivity of the SICCT test. Evidence from England and Wales demonstrates that deployment of the IFN $\gamma$  testing is identifying further

cohorts of infected cattle which need to be identified and swiftly removed if herds are to be more truly clear of infection when OTF status is restored and movement restrictions lifted.

The criteria set out in the Consultation Document details those scenarios where supplementary testing can be most effectively applied to clear infection from those herds which pose the greatest risk of harbouring undetected disease. In addition the scope and rationale of the criteria provides a proportionate and targeted use of IFN- $\gamma$  to greatly assist in the Eradication Programme.

### **Potential future use of Actiphage Test**

We would also ask that consideration is given to experimental use of the Actiphage test on a non-approved basis to accelerate progress. Actiphage is used in England and Wales in parallel with the existing skin test and currently approved by APHA as an un-validated test for use in a chronic bTB breakdown with a high degree of accuracy which reduces the risk of false positives. It offers the potential for rapid screening and can differentiate infected from vaccinated animals (DIVA test)<sup>9</sup>.

This is a rapid, accurate test for bovine tuberculosis (bTB) which detects mycobacteria in a blood samples, giving a simple yes/no answer. It offers the potential to identify animals at an early stage of infection and remove them from the herd and will be valuable for pre and post movement. This product recently won the BVA Innovation Award in 2021 and is described as “having the potential to be a game changer in tackling bTB.” The product is currently going through the World Organisation for Animal Health verification (OIE) and the company indicates that validation should be complete late spring or summer 2022. This test is currently being used in the Gatcombe farm project with Dick Sibley.

[https://www.youtube.com/watch?v=XxpYNchLj\\_0](https://www.youtube.com/watch?v=XxpYNchLj_0)

## **2. Do you agree with proposals to introduce testing of non-bovines as deemed necessary by the Department?**

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<sup>9</sup> [Benjamin M C Swift](#)<sup>1</sup>, [Nathan Meade](#)<sup>2</sup>, [Elsa Sandoval Barron](#)<sup>3</sup>, [Malcolm Bennett](#)<sup>3</sup>, [Tania Perehenic](#)<sup>2</sup>, [Valerie Hughes](#)<sup>4</sup>, [Karen Stevenson](#)<sup>4</sup>, [Catherine E D Rees](#)<sup>2</sup>

The development and use of Actiphage<sup>®</sup> to detect viable mycobacteria from bovine tuberculosis and Johne's disease-infected animals. <https://doi.org/10.1111/1751-7915.13518>. 2019

Bovine TB (bTB) can be carried and spread by a variety of species including badgers, deer, alpacas, llamas, goats, foxes, cats and dogs. We therefore agree with the introduction of testing non-bovines as deemed necessary by the Department. However, we are strongly of the view that only infected animals should be removed. There is no justification for killing healthy animals.

### 3. Do you agree with the Departments preferred approach?

Ulster Wildlife disagrees with the preferred approach for wildlife intervention in the consultation as it is disproportionate and inhumane in relation to the contribution to transmission. This reflects public opinion as evident from the joint petition with the USPCA and NI Badger Group which at the point of submission of this response has **x,000** signatories.

Badgers are a protected species and indiscriminate culling by shooting free roaming animals is emotive and viewed as unacceptable by the public. There are ethical alternatives which have been shown to be effective in reducing the level of badger TB from 14% to 2% within the 5 year period. The AFBI study<sup>10</sup> provided further validation of the use of DPP Whole Blood as a real time trappingside diagnostic test for badgers, and the use of the DPP Whole Blood, particularly under field conditions. It also demonstrated that a test, vaccinate or remove approach can significantly reduce badger *M. bovis* prevalence (40% per annum), and suggested this option could be considered in future TB control strategies. This approach also eliminates the risk of perturbation. **This is Ulster Wildlife's preferred option.** Although the pilot did not look at cattle impacts, all control options work on the premise that a reduction in badger infection prevalence reduces the transmission rates to cattle so this reason is invalid with the decision making process. It would be difficult to get a comparative result with culling.

Methods to reduce the cost of TVR should be further explored and farmers could be trained to undertake the trapping part of the process which would leave only the testing intervention to be completed by a DAERA/Private vet, thereby reducing cost substantively. If testing was timed prior to cattle turn out and before badger cubs are born, disease loading would be reduced through the removal of infected animals and maximizing the benefits that the vaccination offers in conferring a level of immunity to their young. This would increase the farmer's confidence in terms of the safety of his cattle during the grazing season when badger proof water and feed troughs can be used to further minimize the risk of transmission by badgers.

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<sup>10</sup> A Bayesian analysis of a Test and Vaccinate or Remove study to control bovine tuberculosis in badgers (*Meles meles*) Mark E. Arnold<sup>1</sup>\*, Emily A. Courcier<sup>2</sup>, Lesley A. Stringer<sup>2</sup>, Carl M. McCormick<sup>2,3</sup>, Ana V. Pascual-Linaza<sup>1</sup>, Shane F. Collins<sup>4</sup>, Nigel A. Trimble<sup>4</sup>, Tom Ford<sup>3</sup>, Suzan Thompson<sup>3</sup>, David Corbett<sup>3</sup>, Fraser D. Menzies<sup>2</sup>



Culling is not an exact science and often does not deliver the anticipated results. Despite the widespread cull in England, the overall level of bTB across the country during the 12 month period to 31 March 2020 did not demonstrate an overall reduction in bTB. This is illustrated by the earlier graph from the DEFRA quarterly statistics on bTB and corresponding statistics which can be located in the same report. Whilst a reduction of bTB in High Risk areas occurred, there was a corresponding increase of the disease in Edge Areas. In addition, for example, in Dorset there was no change in TB OFT incidence rates and other research<sup>11</sup> suggests that an increase in cattle TB may occur in areas surrounding the culling areas due to an increased M bovid transmission due to perturbation of badger populations.

Within the UK, from the stats Wales is worth more in depth consideration. This approach has not been included within the bTB consultation strategy and in our view this is a serious omission that needs to be rectified. **We would ask that the Department and TBEP explores this approach in depth and we would ask to be included in this process as a key stakeholder.**

Within the wildlife intervention proposals in the consultation, the cost differential is not substantive equating to £6.5m across 7 years if restraint and TVR is deployed rather than indiscriminate culling through free shooting. The latter results in the slaughter of large numbers of healthy badgers which potentially may destabilize the population for a cost reduction of £928,570 per annum. This sends the wrong message to consumers especially in the midst of a global and local biodiversity crises. This is particularly sensitive when emerging methodologies such as vaccination (UCD research) suggests that a positive acceptable solution is nearing the end of the pipeline and is near market in terms of application. When healthy badgers are culled it is an action that cannot be reversed and has huge intangible negative impacts, not least for the image of the agricultural industry who are meant to be 'custodians of the countryside'.

Due to the level of badger baiting in NI, our view is trapping with TVR should be the preferred methodology. As costed this is the most expensive option, however if farmers were trained to trap badgers and with TVR conducted by local vets, this could offer a value for money solution. From an environmental perspective this would certainly be a better option than farmer led companies shooting free roaming badgers and we would ask that further consideration is given to different ways of delivering the TVR approach. This option will have long term consequences for the industry in terms of their role and function within society.

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<sup>11</sup> Woodrofe, R. et al. Effects of culling on badger *Meles meles* spatial organisation: implications for the control of bovine tuberculosis. *J Appl Ecol.* 43, 1–10 (2006).

#### 4. Do you agree with the Department's preferred funding model for wildlife intervention?

Ulster Wildlife disagrees with the preferred funding model for wildlife intervention.

As outlined in the consultation, to bring forward a wildlife intervention, the Department intends to exercise its powers under Article 13 and 47 of the Diseases of Animals (Northern Ireland) Order 1981 [1981 No. 1115 (N.I. 22)] to make subordinate legislation to remove badgers, in an area that the Department may specify. To make an Order under Article 13 "Power to destroy wildlife", DAERA must demonstrate that it is satisfied, in the case of any area:

"That there exists among the wild members of one or more species in the area a disease, other than rabies, which has been or is being transmitted from members of that or those species to livestock of any kind in the area;

and

"That destruction of wild members of that or those species in that area is necessary in order to eliminate, or substantially reduce the incidence of, that disease in livestock of any kind in the area."

#### Article 13

In relation to the Article 13 Order required to carry out a badger intervention, we do not agree with DAERA's interpretation of the legislation since DAERA's own evidence through the TVR study indicates that at least 4 out of 5 of the badgers culled will be healthy.

This method of control is therefore disproportionate and will have at best a modest impact on the levels of bTB in most cases. We would therefore ask the Department to consider each case on its merits taking into account the specificity and sensitivity of the DPP test coupled with individual compliance in the farm unit with best TB practice.

Our view is that it would be of benefit to apply an bespoke agreed approach on a farm basis or small defined geographical location grounded on a sound evidence base provided through TVR. Unless the farmer is fully compliant with the core standards for bTB control, any wildlife intervention will not deliver any long term tangible or intangible benefits. **We would stress that it is important not to under-estimate just how emotive and unpopular this strategy will be with the public and there will need to be a clear and transparent process underlying any wildlife intervention.** Within Ulster Wildlife as a key stakeholder in this issue we will not be support of the cull as outlined in the consultation and will be publicly campaigning for a better solution.

In relation to the Department determining which areas badgers may be playing a significant role in the maintenance of bTB in cattle before proceeding to make an Order and in doing so take account of local cattle, badger and bTB data. After many years of discussion, there are

clearly different views amongst Departmental staff on the role and contribution of badgers on the issue of bTB and as outlined above there needs to be a clear transparent process based on fact rather than personal or organisational opinion – TVR results seem to be the only acceptable objective methodology on which to base this decision. As covered earlier in our submission, we would like to see a risk assessment with a traffic light system applied to each farm business based on a bTB audit for the purposes of helping farmers move toward a robust risk rating over time. This could be completed by the farmer in partnership with his Private/DAERA vet supported through regional partnership groups and capacity building initiatives with on farm best practice demonstrations. It would be an investment that should yield positive results.

Our experience over the years strongly reinforces the view that most farmers do not differentiate between transmission routes between cattle to cattle and badger to cattle (or vice versa). Conversation almost exclusively focuses on wildlife intervention rather than acknowledging the role of livestock transmission and the required controls. There is therefore the need for significant upskilling carefully planned and implemented within the agricultural industry if the disease is to be tackled effectively.

### **Area selection**

The consultation states that DAERA must introduce separate subordinate legislation for each intervention area. In addition to Article 13 of the Diseases of Animals (Northern Ireland) Order 1981 the Department may after consultation with the NI Environment Agency (NIEA) and subject to the following provisions of this article, by order, provide for the destruction of wild animals in that area. An Order under this Article must specify the area to which it applies, the disease to which it applies and the species to which it relates.

From our experience to date, whilst there may be some merit in demarcating areas where there are particular bTB hot spots on which to focus, this will not provide equitable opportunity amongst the farming community for those who need help and bespoke advice on the issue of bTB. In addition to clusters of bTB, individual issues can occur out with these areas such as the recent cases with John Carson and Albert Wallace. Wildlife interventions should be targeted to where they are likely to have the greatest impact i.e. where all other control factors are in place, farmers are competent in biosecurity and transmission of the disease has a high probability of being badger centric. This will not necessarily fall within the geographical areas selected using the criteria proposed by the Department.

Each farmer impacted by recurring breakdowns should be able to avail of the same support structures, build up a picture of what is happening on their farm and work out appropriate risk mitigation measures. Depending on the farm unit, this might or might not require TVR or another wildlife intervention.

It is important to ensure that area selection using legislation does not become an exclusion zone for those in need of support who happen to fall outside this area are ignored. This is particularly important if the objective is to reduce and/or eradicate bTB for the next generation.

As illustrated by previous scientific references there can be a reduction in a high risk area and a corresponding increase in Edge Areas resulting in a neutral impact in terms of overall incidence level and cost. Our view is that every farmer who suffers a major breakdown of bTB experiences a similar level of pain often with a major impact on their income, livelihood and emotional distress and worry for the whole farm family. There should be effective and well-designed structures and support services in place to provide help through such difficult times.

### **Cost of the intervention options**

We ask to see the full costings of each of the options included in the consultation and have further discussions on the component parts of the calculations - there will no doubt be ways to further improve the cost effectiveness of each option. One notable cost is that of DAERA oversight (£9m) which is consistent across each of the options. The level of oversight required will depend on the method deployed, the level of quality assurance needed and the competence of the contractor. For example, for restraint, trap & TVR option, the cost of badger intervention and treatment is £10.9m and the cost of oversight is £9m. If this is the case, DAERA staff might as well complete the TVR removing or substantively reducing the need for oversight. Private vets can also provide a cost effective delivery option and could be quality assured as part of the wider validation process for TB testing.

There are many anomalies within this costing table that require further debate. The option of teaching farmers how to both trap and set restraints to reduce the cost of TVR so that the only tangible cost is the veterinary intervention is worth consideration. If they can deliver control through shooting free roaming badgers, there is no reason why this time can't be put to an alternative use.

Using ecological best practice for other species work, the effectiveness of this methodology could be improved and farmers will know their land, location of setts and patterns of behaviour better than any third party. If they are keen to resolve the issue of bTB, they have the knowledge and skills to make a very positive contribution to the process consistent with their role as 'Custodian of the Countryside' rather than be asked to assume the role of the 'Grim Reaper' of an iconic wild animal damaging the image of the industry.

We would also ask that vaccination costs are included in the costings within the economic appraisal to mirror recent development in R&D by UCD. This approach could be used in combination with TVR to deliver a positive outcome. The DAFM badger intervention costs for 2020 are outlined below:

### ***Badger intervention costs for 2020***

2020 Badger Removal Programme - €2,974,281

2020 Badger Vaccination Programme - €1,545,103

The numbers of badgers culled/vaccinated in 2020 were given thus in a Dáil PQ

Badgers culled in 2020 - 2,428

Badgers vaccinated in 2020 - 2,513

Combining these gives provides a cost per badger...

Cost per badger culled - €1,224

Cost per badger vaccinated - €617

Please note that vaccination works out at (almost exactly) half the cost of culling. These figures are specific to restraint trapping, which is used for both culling and vaccinating badgers in the RoI.

**Table 1 Estimated cost of an initial seven year badger non selective cull intervention over 1200km<sup>2</sup> (economic costs, in real (2020) prices, i.e. no inflation uplifts included)**

<b>Method</b>	<b>a) Cage Trap &amp; Shoot Cull</b>	<b>b) Restraint Trap &amp; Shoot Cull</b>	<b>a) Controlled Shooting</b>
<b>Intervention deployed by:</b>	<b>Private sector under contract to Government</b>	<b>Private sector under contract to Government</b>	<b>Private: Farmer-led</b>
<b>Badger capture and treatment</b>	~£24.8m	~£8.0m	~£3.8m
<b>Badger removal, PM, Disposal</b>	~£1.2m	~£1.2m	~£1.2m
DAERA oversight costs	~£9.0m	~£9.0m	~£9.0m
<b>Total cost per 1200km<sup>2</sup> area</b>	<b>~£35.0m</b>	<b>~£18.2m</b>	<b>~£14.0m</b>

**Table 2 Estimated cost of an initial seven year badger selective cull via 'TVR' intervention over 1200km<sup>2</sup> (economic costs, in real (2020) prices, i.e. no inflation uplifts included)**

Method	d) Cage Trap & TVR	e) Restraint Trap & TVR
<b>Intervention deployed by:</b>	<b>Private</b>	<b>Private</b>
<b>Badger capture and treatment</b>	<b>~£27.0m</b>	<b>~£10.9m</b>
Badger removal, PM, Disposal	~£0.6m	~£0.6m
DAERA oversight costs	~£9.0m	~£9.0m
<b>Total cost per 1200km<sup>2</sup> area</b>	<b>~£36.6m</b>	<b>~£20.5m</b>

### Options Appraisal

Ulster Wildlife disagrees with the preferred option in the economic appraisal for the reasons outlined within the consultation response. Option 8 is our least preferred option and we would ask that this analysis is reconsidered.

#### 5. Do you agree with the Departments proposal for a £5000 cap on compensation?

We feel that this is a matter for the Department. The £5000 cap on compensation per animal should have minimal impact on the agricultural industry with the exception of pedigree breeders who have a higher risk of transmission as they regularly import animals to improve the genetics of the herd. However with informed purchasing, good biosecurity, careful planning and pre and post movement testing this risk can be minimized.

The purchase of bulls is potentially the other main factor to consider and could be important in terms of breeding for TB resistance within herds although artificial insemination offers a viable alternative.

To enable breeders to actively manage risk when purchasing animals, upgraded testing should be available pre and post movement using gamma interferon or new emerging tests if they prove to have increased accuracy. Animals should be kept in isolation until assessed as bTB free. The cost of the test would be very modest given the value of the animals purchased and should be considered as part of the overall cost of doing business. This will limit spread within and between herds.

Transport is a key consideration as bTB can be transmitted in transit if the vehicle is not properly cleaned and disinfected.

#### 6. Do you agree with the Department's proposal for a reduction in compensation?

We agree that there needs to be a step change within the agricultural industry in terms of bTB control measures and management practices. There is no excuse for farmers who take risks (calculated or unknowingly due to lack of knowledge) which impact on other farmers or

unnecessarily rely on tax payers money for risk mitigation. However, we also appreciate the significant gaps in science that makes it difficult for farmers to understand and have confidence in best practice recommendations. It is also acknowledged that some risk factors will be outside their control.

We would suggest that if the cattle to cattle controls are effectively adopted by the agricultural industry as per the consultation. This should deliver significant cost reductions in it's own right in terms of the requirement for public funds within a relatively short time frame. When coupled with the compensation ceiling per animal, this negates the need for reductions in compensation at what is a very challenging time for farmers.

Our view is that given the scientific uncertainties that still surround bTB transmission, its control, the testing regime and the significant impact it can have on farming families, compensation cuts should **only** apply where farmers have not followed core standards agreed between the industry and DAERA or adopted risky behavior. If interferon- gamma is to be applied it is important that a transition period applies as it would impact on the viability of farm businesses as the new regime is bedded in. This will result in more animals being removed from herds as has happened in England and Wales but deliver a long term impact in the reduction/eradication of bTB.

We would like to see risk-based audits included as part of the annual bTB test with clear recommendations discussed with farmers as to how they further reduce the risk of infection. Due to repeat breakdown, some farmers will be aware of the factors in disease transmission but others potentially less knowledgeable. As science further develops, new information will be presented that will impact on farming practice.

Farms could be assessed and given a risk rating using agreed standards with statutory improvement notices issued as required. The level of risk identified during the audit would influence the level of compensation that the farm business can access and be designed to change behaviour.

- Farms with a robust risk rating should be deemed to be eligible for 100% compensation unless there is a breach of core standards.
- Farms with a medium risk rating should be eligible for a 100% compensation for a 2 year transition period until they have rectified the issues identified and changed their management practice. If remedial action is not implemented within this timeframe, this would attract a 5% reduction in compensation for the subsequent year when they can resolve any outstanding issues with a 5% reduction per year if action is not taken on the advice given. It is important that advice is practical and achievable since most farm businesses do not have significant funds available for

reinvestment.

- Farms assessed as high risk should be eligible for 100% compensation for a transition period of 2 years and then drop to 90% if the problems are not rectified within this timeframe with a reduction of 5% per year with non compliance.

We fully recognize that bTB has significant implications for farmers. Not only can it have a detrimental impact on many years of livestock breeding/genetic improvements, a breakdown also affects the income and cash flow on the farm and can leave the business in difficult financial circumstances and this needs careful consideration.

To use a current live example from within the agricultural industry to demonstrate the impact of the proposals, if a 25% reduction was applied to 120 cows slaughtered on the holding, the loss of compensation would equate to approx. £105,000. This is accompanied by a 50% reduction in income from milk sales (and possibly greater if further cattle are removed with latent infection). The farm is an inter-generational business and two families are reliant on this income for a living and to service bank borrowings for necessary farm improvements. **It is therefore important to be in a position to help farmers manage risk and to assist them through difficult times.**

As the farm business has assets, the farmer is not eligible for benefits but may be eligible for working tax credit depending on residual income, though this takes time to arrange and the variability of income as the business is restocked and becomes operational again is challenging within the government framework for Working Tax Credits.

A temporary time bound arrangement similar to furlough would provide a better mechanism for support where bTB has a severe impact on the farm and enable those affected to reflect, think through the way forward and work out the best plan to restock and resume operations minimizing future risks and repeat incidents. The principle of furlough was established during Covid and the farming community did not avail of this scheme playing their part in society. A long term view should be taken and investment made in an industry that is critical for the future of NI and the UK as the impact of climate change and food security kick in with drought, floods and disease risk in a global context.

We would therefore ask that DAERA considers the resilience of the agricultural industry as it moves forward with bTB control strategy. This policy transition is moving forward at a time when CAP is being replaced with a new policy regime which could adversely impact on farm businesses as it rebalances to address the issues of climate change and biodiversity. It is important that this transition to effect a reduction in bTB does not destabilize the industry and Veterinary Service and Animal Health Policy need a considered response which builds solid foundations for the future.



## Conclusion

In conclusion, Ulster Wildlife as a key stakeholder in this issue would like to see an environmentally ethical and responsible approach adopted by the farming community, vets and government. NI has led the way with the Test, Vaccinate or Remove pilot and with some lateral thinking and a contribution of time from the farming community in implementing parts of this methodology (trapping), an acceptable solution is available.

The TB strategy should be designed to include:

- Rewarding farmers for good biosecurity practices through a framework for earned recognition
- Empowering and supporting private vets to advise their clients with timely, localised data
- Enabling better data-sharing and communication between government vets and private vets to reduce risk and provide early warning systems
- Support for knowledge-based livestock trading
- Provide long-term funding for bTB advisory partnership services to build capacity within the industry to effectively address the issue and recognise and manage the risk factors with the greatest weighting
- Adoption of Test Vaccinate or Remove methodology as an ethical wildlife intervention as a foundation approach.
- Directing research funding to the areas which would have the greatest impact

This approach would include simple standards and guidelines such as the example below which can be found on the TB Hub [Bovine Tuberculosis / TB Prevention in Animals | TB hub UK](#).



### **STOP** infected cattle entering the herd

- Ask for TB history information before you buy new cattle.
- Post-movement test cattle entering the herd.
- Isolate all higher-risk cattle before they enter the herd.



### **REDUCE** risk from neighbouring herds

- Check local TB outbreaks data online at [www.ibtb.co.uk](http://www.ibtb.co.uk)
- Put in place effective barriers between neighbouring herds.
- Avoid sharing equipment or vehicles with other farms.
- Avoid sharing cattle grazing with other herds.



### **MINIMISE** infection from cattle manure

- Store manure for a long period before spreading on farm.
- Only spread manure on arable land or pasture that is not going to be grazed by cattle for at least two months.
- Minimise aerosols and contamination of roadways when spreading.
- Don't spread manure from other farms.



### **RESTRICT** contact between badgers and cattle

- Find out if badgers visit your farm.
- Introduce barriers to prevent badgers accessing cattle.
- Limit access of cattle to badger latrines and setts.



### **MANAGE** cattle feed and water

- Restrict badger access to feed stores, troughs and mineral licks.
- Don't put feed on the ground at pasture and clean up spillages.
- Use clean, fresh water and restrict badger access to water troughs.
- Only feed waste milk to calves if it has been boiled or pasteurised.

We are strongly of the view that any policy developments should build capacity within the industry, support farmers and their families through the transition process to a better future and deliver for both agriculture and the environment. Any other outcome will be considered a failed policy outcome for DAERA intervention. We are keen to see this issue addressed now to alleviate stress and hardship for the agricultural industry but not in a way that is detrimental to the environment or cause further species decline at a time when we are experiencing biodiversity decline.

Best Regards



Ken Brundle

Chair of Ulster Wildlife