



TB Policy & Research Branch  
Department of Agriculture, Environment and Rural Affairs  
1st Floor East | Jubilee House  
111 Ballykelly Road  
Ballykelly, Limavady  
BT49 9HP

[TB.Consultation@daera-ni.gov.uk](mailto:TB.Consultation@daera-ni.gov.uk)

October 2026

Dear TB Policy and Research Branch,

Please find appended Born Free Foundation's response to the *Consultation on Potential Wildlife Intervention Options as part of the Bovine Tuberculosis in Northern Ireland: Blueprint for Eradication*.

Born Free Foundation is a charitable organisation registered with the Charity Commission for England and Wales, dedicated to ensuring that all wild animals, whether living in captivity or in the wild, are treated with compassion and respect and are able to live their lives according to their needs. We promote Compassionate Conservation to enhance the survival of threatened species in the wild and protect natural habitats while respecting the needs and safeguarding the welfare of individual animals. We seek to have a positive impact on animals in the wild and protect their ecosystems in perpetuity, for their own intrinsic value and for the critical roles they play within the natural world.

We have a longstanding interest in wildlife management issues in the UK and have challenged the Westminster government's policy of badger culling as part of its bovine TB control strategy in England over many years, on ethical, animal welfare, and scientific grounds.

We hope our response is helpful and stand ready to provide further information or clarification as required.

If you would confirm safe receipt of this submission I would be most grateful.

Sincerely

Dr Mark Jones, veterinarian.  
Head of Policy  
Born Free Foundation  
E: [markj@bornfree.org.uk](mailto:markj@bornfree.org.uk)  
M: 07947749475

Registered office:

**Born Free Foundation**

2nd Floor, Frazer House  
14 Carfax  
Horsham  
West Sussex  
RH12 1ER  
United Kingdom

01403 240170

[info@bornfree.org.uk](mailto:info@bornfree.org.uk)

[www.bornfree.org.uk](http://www.bornfree.org.uk)

bornfreefoundation

@bornfreefn

@bornfreefoundation

## **Consultation on Potential Wildlife Intervention Options as part of the Northern Ireland Bovine TB Strategy**

### **Response by Born Free**

#### **Introduction**

Born Free recognises that Bovine TB in beef and dairy cattle imposes a significant economic burden on Northern Ireland's farming community and the public purse, as well as placing a major financial, emotional and psychological strain on farming families and communities.

We fully accept that the persistence and spread of *M. bovis* within the Northern Ireland cattle population must be addressed through an effective bovine TB strategy. However, the evidence presented does not provide a sufficiently robust or credible case for concluding that any of the proposed badger intervention options put forward will make any meaningful contribution to reducing bovine TB in cattle.

We believe the precious resources allocated to a wildlife intervention policy should be better invested in effective cattle-based disease control measures and in providing practical financial support to farming families having to deal with the economic and emotional impacts of herd breakdowns.

We do have some concerns about the integrity of this consultation. Taking these into account we do not believe it provides a sufficiently robust evidential basis for informed public participation. This is a matter of high public interest because of uncertainty regarding the economic benefit claimed for badger interventions, and the use of public funding in pursuit of a benefit the existence of which is in considerable doubt.

We therefore believe that any decision to proceed with lethal badger intervention based on the evidence presented in this consultation would be unsound and vulnerable to challenge.

#### **Bovine TB in Northern Ireland**

The continued persistence and spread of bovine tuberculosis (bTB) in Northern Ireland's cattle herd is primarily due to limitations in the current herd testing regime, which fails to identify a substantial proportion of infected cattle within affected herds. This hidden cattle infection is subsequently spread between high-density cattle herds and is made worse by poor cattle movement control and inadequate biosecurity measures.

The high burden of bTB in Northern Ireland is a direct consequence of the historical and ongoing failure to effectively address the reservoir of infection within the cattle population.

More effective cattle control measures, particularly more effective herd tests, have been available for many years but have not been implemented to the degree required to substantially reduce disease transmission.

Novel phage-based diagnostic tests, such as Actiphage, offer an important means of detecting *M. bovis* infections that may be missed by conventional SICCT and IFN- $\gamma$  testing. Though not approved for routine statutory use, these tests can now be deployed in England and Wales on an exceptional basis, however, they do not appear to have been given any consideration in the Blueprint.

In view of the demonstrated and well-established role of cattle-to-cattle transmission in the epidemiology of bTB, there is a danger the disproportionate focus on wildlife has diverted attention and resources from implementing the necessary measures to effectively address bTB infection within the cattle population.

While bTB is clearly present in the badger population, the evidence for significant transmission from badgers to cattle is lacking, as is confirmation that badgers make any significant contribution to the incidence of bovine TB in cattle.

Although direct empirical evidence of badger-to-cattle transmission under field conditions has yet to be established, cattle-to-badger transmission has been widely demonstrated. For example, cattle imported into England from Northern Ireland were confirmed by Defra to be the source for a spread to a number of herds in Cumbria. Strain types previously recorded only in Northern Ireland were subsequently detected in the local badger population.

Therefore cattle-to-badger transmission provides a more plausible explanation for the observed genomic associations between infection in cattle and badgers.

Genomic analysis of *M. bovis* infection in County Down has also concluded that the epidemic appeared to be primarily cattle-driven with no good evidence of badger-to-cattle transmission.

Therefore, if cattle-to-cattle transmission is effectively controlled, we can also expect to see the prevalence of infection in badgers decline, without the need for lethal intervention.

Taking this into account we believe government and industry should urgently work together to focus on effective cattle-based measures to address bTB transmission within the cattle population, rather than focusing substantial financial resources on badger interventions.

## **Wildlife intervention**

Born Free strongly opposes any form of lethal badger intervention.

We do not believe the information and evidence in this consultation guarantees that any of the proposed badger intervention options will make any significant contribution to reducing bTB in cattle.

We do acknowledge that the inclusion of a non-lethal, badger vaccination-only option represents an improvement on the options presented in previous consultations. However, there is no credible peer reviewed scientific evidence demonstrating that badger vaccination reduces the incidence of bTB in cattle at a population level.

We also do not believe that M. bovis infection is a significant cause of poor welfare across the majority of the badger population.

Born Free recognises that a badger vaccination-only option provides a potential pathway towards developing a more ethical, proportionate and sustainable bTB strategy.

A badger vaccination-only intervention would:

- fulfil the Department's commitment to tackling bTB in wildlife;
- address farming organisations' calls for a wildlife intervention;
- help reduce the prevalence of bovine TB within the badger population;
- help protect badgers from M. bovis infection acquired through cattle-to-badger transmission;
- provide the best compromise in order to secure broad support across farming, conservation and wider public interests;
- be the most humane, ethical and environmentally responsible wildlife intervention;
- align Northern Ireland with vaccination-based approaches now being progressed in England; and
- avoid many of the ethical, evidential, legal and cost issues associated with lethal wildlife intervention.

Taking this into account, we support extending the Veterinary Surgery (Vaccination of Badgers Against Tuberculosis) Order 2010 to permit the lay vaccination of badgers in Northern Ireland. This would provide greater flexibility in the delivery of vaccination and could substantially reduce the costs and logistical constraints associated with a vaccination-only programme.

If a wildlife intervention is implemented, we believe DAERA should retain direct responsibility for its delivery, oversight and funding. This would avoid any potential perceived conflicts of interest, ensure transparency around the use of public funds, and maintain public confidence in the independence and integrity of the intervention.

### **The proposed use of stopped restraints (snares)**

Born Free strongly oppose the use of stopped restraints, also known as snares, for any reason. This highly controversial method of wildlife capture has been outlawed in Scotland and Wales.

We are concerned by the absence of a comprehensive independent welfare assessment of the deployment of restraints to capture badgers, particularly in relation to the impact of stress on the welfare of badgers captured using this method.

We are very concerned that DAERA appears prepared to propose their use in Northern Ireland despite the absence of such vital evidence. In our view, this is inconsistent with a precautionary approach to animal welfare, and would represent a potential breach of the Animal Welfare (Sentience) Act 2022.

## **The possible future extension of the current intervention window (open season)**

Born Free strongly opposes any extension of the current lethal intervention window (open season) for badgers (1 July–31 November).

Any extension of the lethal intervention period for badgers could have serious welfare implications for lactating female badgers and dependent cubs.

While an extension of the current intervention window is not presented as a firm proposal in the consultation, it is clearly a possibility that could arise from a decision to implement a lethal badger intervention.

The consultation should therefore explicitly assess the potential welfare consequences of any extension of the lethal intervention window and provide consultees with a clear opportunity to express their views on this possibility.

## **Habitats Regulations Assessment (HRA)**

Born Free believes the conclusion in the HRA assessment that Likely Significant Effects can be excluded is not supported by the evidence presented. Although credible pathways including disturbance, changes in badger ranging behaviour, predator-release effects, hydrological impacts and accidental bycatch have been identified, there has been too much reliance on qualitative assumptions, and on the absence of recorded incidents and evidence,, rather than any clear demonstration that such effects can be objectively excluded.

This is concerning in view of the potential geographical extent of the intervention, the fact that intervention areas have not yet been determined, and the HRA's own acknowledgement that many designated sites are already in unfavourable condition.

We therefore believe the categorical dismissal of cumulative effects is not justified and raises concerns that the precautionary approach has not been properly applied.

## **Strategic Environmental Assessment (SEA)**

The SEA does not provide a strong evidential basis for concluding that *Strategic Alternative 3* – implementing a wildlife intervention – is the best environmental option. Although it identifies potential benefits from reducing bTB, those benefits depend on assumptions about the effectiveness of wildlife interventions that are not supported by evidence, or evaluated by the SEA.

The report does identify significant negative effects of culling on badger populations and biodiversity, and uncertainty about the scale and duration of those effects, and recommends that further information and monitoring should be sought to address them.

*Strategic Alternative 2* – implementing the enhanced cattle and other Blueprint measures without wildlife intervention – is recognised as a means of reducing bTB, but the SEA does

not adequately quantify its likely benefits or compare them with the incremental benefits attributable specifically to wildlife intervention. The preference for wildlife intervention is insufficiently supported by the comparative environmental evidence presented.

The SEA does recommend an environmental monitoring and safeguarding framework for badger intervention. However, the SEA does not establish the population thresholds, trigger points, stopping criteria or other safeguards that would ensure that adverse effects are prevented.

We believe the SEA's treatment of uncertainty and monitoring should be considered in the context of the precautionary principle.

A precautionary approach would require the significant uncertainties surrounding population impacts, welfare and ecological consequences to be resolved, or appropriately constrained by enforceable safeguards, before any potentially irreversible environmental effects are authorised.

### **Regionalisation Project**

Born Free is very concerned by the premature implementation of a lethal badger intervention as part of the Regionalisation Project.

Regionalisation is listed as a key component of the *Bovine Tuberculosis in Northern Ireland: Blueprint for Eradication*. The Regionalisation Project is being conducted as a key part of the wider Blueprint strategy. However, DAERA has sought to exclude the wildlife intervention element from both stakeholder and public consultation by presenting the Regionalisation Project as a research experiment.

The Department's decision to proceed with a lethal badger intervention before the wider wildlife intervention consultation has concluded, raises serious concerns about the transparency, fairness and integrity of the stakeholder process. It also calls into question the integrity and value of the consultation itself, if a major element of the proposed policy has, in effect, already been put in place.

### **The consultation process**

Preparing a consultation on a subject as complex and controversial as wildlife intervention in badgers is challenging. However, the existence of significant uncertainties, contested evidence and conflicting expert opinion, places a responsibility on DAERA to ensure that the consultation process is conducted to the highest standards of diligence, fairness, transparency and impartiality.

Having examined the consultation on this basis, we have identified areas where the evidence, analysis and presentation of options do not appear to meet the level of clarity, balance, transparency and independent scrutiny required.

Bovine TB control has for many years been the subject of strongly contested claims and interpretations, particularly concerning the relative importance of transmission from cattle and wildlife.

The consultation should take this context into account. Where the evidence underpinning a proposed policy is uncertain or contested, consultees should be given sufficient information to understand the limitations and uncertainty attached to any proposals, before being asked to express their views.

The main Consultation Document fails to do this. It presents the proposed wildlife intervention options but does not communicate the extent of the uncertainty or expert disagreement surrounding the evidence for their effectiveness in reducing bTB cattle herd breakdowns.

This is important as the main document is the principal framing document for the consultation. It establishes the context in which consultees are asked to consider and comment on the policy options.

The main document is supported by a substantial body of technical and scientific material. The volume and complexity of this material places a considerable burden on consultees to identify and critically evaluate the information necessary to understand the basis for the proposed interventions.

If the limitations and uncertainty of the underlying evidence are not clearly signposted at an early stage, consultees may be led to believe the effectiveness of wildlife intervention is more firmly established than is actually supported by the evidence.

Clear communication is particularly important in the Easy Read Summary. While the Summary is a simplified description of the proposals, simplification should not come at the expense of balance or accuracy.

We believe the Easy Read Summary does not provide a sufficiently accurate, balanced or neutral representation of the evidence and proposals on which consultees are being asked to comment. This document is crucially important because it is intended to provide a condensed and accessible account of the consultation. The selection and presentation of information within it can influence how consultees understand and respond to the consultation.

A key concern is that the intervention options are not introduced with equivalent levels of information. Non-selective culling is not adequately defined when first presented, while controlled shooting is not clearly explained at all. By contrast, the other options provide a description of what the intervention entails. Controlled shooting is described only in terms of trained and authorised operators, rules, training and monitoring, without explaining what the method involves or its potential implications.

The non-selective cull is presented with a positive statement that it “*may reduce disease pressure more quickly than vaccination only*”, while its potential welfare, cost, delivery and public-confidence implications are simply reduced to the statement that these are “*important considerations*”, without explaining what those considerations might mean in practice.

In contrast, TVR is presented with both a positive and a negative consideration, while vaccination-only is presented solely through negative considerations.

The same imbalance exists in the presentation of trapping methods. Cage trapping is largely described through neutral, functional information. Stopped restraints are given a positive comparison—that they *“may be easier to use than cage traps”*—as well as a negative consideration. Controlled shooting, however, is accompanied by positive assurances concerning training, authorisation, rules and monitoring, while animal welfare and public safety are again reduced to unspecified *“important considerations”*. No equivalent potential disadvantages are identified.

Born Free believes the Summary should define every option and delivery method consistently, otherwise there is a major risk that the Easy Read document influences consultees' rather than simply enabling them to understand the choices being consulted on.

The treatment of the use of stopped restraints in the Easy Read Summary is a key concern to Born Free.

The section on how badgers could be captured outlines the use of cage traps and stopped restraints. The photographs on pages 20 and 21 present the two capture methods very differently. On page 20, a badger is shown inside a cage trap. By contrast, the photograph accompanying the information about stopped restraints shows a badger at the entrance to its sett, without any visual representation of the restraint itself or of a badger captured using this method.

This creates a very different impression of the two capture methods and risks sanitising a highly controversial method of capture, which has been banned in Scotland and Wales. Consultees should be given a clear and accurate visual representation of what the use of a stopped restraint entails, including what a badger caught in such a restraint looks like. This is particularly important in an Easy Read document, where photographs are used as a means of communicating information to consultees.

On page 7 the Summary states:

*“Bovine Tuberculosis (bTB) is a disease in cattle. However, the disease can be found in other animals such as badgers. The disease can cause illness in cattle. It also spreads from cattle to badgers, from badgers to cattle and within the badger population.”*

The statement fails to emphasise the key importance of cattle-to-cattle transmission in maintaining disease in cattle populations, and the lack of clear evidence for significant badger-cattle transmission. As a result the reader could wrongly infer that transmission from badgers is a principal driver of bTB in cattle, while cattle-to-cattle transmission is of minor importance.

Similarly, on page 9 the Summary states:

*“Scientific evidence shows badgers can carry the bacteria that causes bTB”*

and:

*“Badgers play a role in keeping the disease circulating.”*

The first statement is accurate, however, the second remains highly disputed among scientists regarding the significance of the role badgers may play in interspecies transmission. Taken together, consultees might reasonably infer more certainty than the evidence warrants.

The Easy Read Summary should be easy to understand without being misleading. In this case, however, the presentation of the evidence risks influencing consultees' views rather than simply enabling them to understand the evidence and proposals.

## **Design of the consultation questions**

The design of the consultation questions does not account for the difficulty consultees may experience in giving definitive responses to proposals about which they may not feel sufficiently informed.

Several key questions, including Q5, Q6, Q8 and Q9, as numbered in the main consultation document, require respondents to select Yes or No without providing an “unsure”, “don’t know”, or equivalent option.

The later five-point support/oppose scales are an improvement, but “neither support nor oppose” is not equivalent to being unsure or considering the evidence insufficient. The questionnaire therefore risks forcing respondents into providing definitive positions when their actual position may be that the evidence does not permit a reliable conclusion.

The online response form is also of concern. Respondents are required to provide definitive answers to the questions. In addition, a response to every online question is mandatory and must be completed before their response can be submitted. This means that consultees cannot indicate that they are unsure, decline to express a view, or provide comments without also selecting a definitive response. They are therefore effectively required to adopt a position, even where the available evidence does not enable them to reach a firm conclusion or where none of the available options accurately reflects their view. The resulting responses may therefore give a misleading impression of the strength or clarity of consultees’ views.

Providing consultees with the opportunity to freely express an unrestricted view is, at the very least, a matter of good practice. The requirement to select a definitive answer to every question before submission effectively converts an absence of opinion, uncertainty, or principled refusal to endorse the premise of a question into an apparent substantive and definitive response.

## **Communication of uncertainty**

Born Free believes the consultation documents do not communicate the level of uncertainty surrounding the evidence sufficiently clearly.

We are particularly concerned by the following:

- Much of the evidence concerning wildlife transmission and intervention effectiveness is observational, indirect or subject to scientific uncertainty and important limitations;
- Contrary evidence and scientific disagreement are not given sufficient prominence;
- Statistical modelling is presented with greater apparent precision than the evidence warrants;
- Uncertainty is not adequately carried through the economic analysis. The cost-benefit analysis presents single point estimates of costs and benefits, making the results appear more certain than they are; and
- The uncertainty surrounding causation is particularly significant. This limits the certainty with which wildlife intervention can be expected to reduce cattle disease.

We believe the uncertainty surrounding the evidence, assumptions and predicted outcomes is not sufficiently quantified, explained or carried through into the final assessment and presentation of policy options.

This risks giving consultees an impression of confidence and precision that the underlying evidence does not support.

### **Presentation of genomic evidence**

We believe genomic evidence is presented more strongly than the underlying science justifies.

The consultation places significant weight on genomic studies as evidence of transmission between badgers and cattle. However, the way this evidence is presented risks giving the impression that genomic analysis has established a substantial badger-to-cattle transmission pathway, when the underlying evidence is considerably more qualified.

Page 23 of the main consultation document states:

*“Strain types in badgers are similar to those identified in the local cattle population. Prevalence levels in badgers are positively associated with the local bTB prevalence in cattle”*

Presented in isolation and without an appropriate qualification, the statement is liable to lead consultees to infer that the presence of shared *M. bovis* strain types in badgers and cattle is firm evidence of transmission from badgers to cattle.

Shared strain types may demonstrate that badgers and cattle are infected with related or identical strains, and an association between badger and cattle prevalence may be consistent with epidemiological interaction. However, this alone does not establish interspecies transmission, nor does it provide evidence for badgers being a significant source of infection for cattle. Establishing transmission requires additional epidemiological or genomic evidence which addresses directionality and the relative contribution of the respective hosts.

The positioning of this statement early in the consultation document is therefore highly problematic. It may establish an initial impression that is stronger than the underlying evidence warrants. This is particularly important in a consultation in which consultees are being asked to form views on whether wildlife intervention is justified.

The statement should therefore be qualified at the point at which it is presented, otherwise it seriously risks overstating the evidential basis for wildlife intervention and may introduce or reinforce confirmation bias among consultees.

Page 10 of Annex VIII states:

*“modelling and genomic evidence confirms bidirectional transmission”*

We accept that whole genome sequencing (WGS) is a powerful and valuable epidemiological tool. By comparing the genomes of *Mycobacterium bovis* isolates, it can help establish whether infections are genetically related and help reconstruct patterns of infection and transmission. It can therefore provide important information about the relationship between infections in cattle and badger populations, but only if the study is sufficiently detailed over a long enough period.

However, there is an important distinction between demonstrating genetic relatedness and demonstrating the direction of transmission or the degree to which transmission might occur.

Where cattle and badgers carry closely related or indistinguishable *M. bovis* genomes, this may be consistent with transmission occurring between the two species. However, it does not, by itself, establish which species infected the other. Shared strains can arise because of transmission in either direction, because both species have acquired infection from a common but unsampled source, or because transmission has occurred through a more complex network involving both species and other hosts.

This limitation becomes particularly important when genomic data are used to support the proposition that badgers are a significant source of infection for cattle. WGS does not ordinarily provide a simple observational record of transmission direction. Directional conclusions generally depend on combining genomic data with epidemiological information and statistical or phylodynamic models. The resulting estimates are therefore model-based inferences, rather than direct observations of individual transmission events.

We believe several recognised sources of uncertainty need to be considered when interpreting such analyses:

- Incomplete sampling. The available isolates represent only a proportion of the infections occurring in the population;
- Unsampled infections and intermediate hosts. An apparent genetic link between a bovine and a badger isolate does not necessarily mean that one directly infected the other. Unsampled animals may lie between the sampled infections in the transmission chain;
- Temporal and spatial uncertainty. The time and location at which infection was acquired are not necessarily known with sufficient precision to reconstruct a transmission event from genomic similarity alone; and
- Dependence on modelling assumptions. Estimates of transmission rates and direction depend on assumptions concerning sampling, population structure, generation

intervals, evolutionary rates, migration and the underlying transmission process. Different assumptions can therefore affect the resulting estimates.

These limitations determine what conclusions can legitimately be drawn.

### **Evaluation of relevant real-world programmes**

We believe the consultation contains relatively little critical evaluation of the outcomes of longstanding and ongoing bTB control programmes in Wales, England and the Republic of Ireland, where different approaches have been adopted.

It would appear there has been no systematic, independent evaluation or comparison of the real-world outcomes achieved under these different policy approaches, including the relative contribution of cattle and wildlife measures.

The very limited consideration given to Wales is of particular concern. Unlike England and the Republic of Ireland, Wales has pursued a bTB control strategy centred predominantly on cattle-based measures, without badger culling. Crucially Wales has achieved a substantial reduction in cattle TB through this cattle-focused approach, demonstrating that significant progress in disease control is possible without the widespread culling of badgers. Wales therefore provides an important real-world comparator for assessing the extent to which strengthened cattle controls can contribute to reductions in bTB in the absence of widespread wildlife intervention.

In England and the Republic of Ireland, badger intervention has been implemented alongside extensive cattle controls and other changes to disease-control policy which have been implemented over time. This makes it difficult to differentiate the respective contributions of cattle and wildlife measures to observed changes in cattle TB. A reduction in cattle disease during a period of badger intervention cannot, without appropriate trial design and further analysis, establish the extent to which that reduction was caused by the wildlife intervention rather than by concurrent cattle measures or other factors. We note that in June 2025, the Council of Europe's Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) found, after several years of consideration of the badger culling policy adopted in England, that "badger culling has had no meaningful contribution to the control of bTB in cattle", and called on the Westminster government to "move with greater urgency and progress on the ending of the badger culling policy as there are clear satisfactory alternatives available."

We believe a robust evidence assessment should include a critical evaluation of the outcomes of the different national and regional programmes within British and Irish regions. The relatively limited analysis of these programme-level outcomes in the consultation, particularly the experience of Wales, risks giving greater prominence to evidence supporting wildlife intervention than to evidence that may provide a different interpretation of the relative importance of cattle and wildlife measures.

Taking this into account, we believe the selection and presentation of evidence fails to provide consultees with a sufficiently balanced account of the current scientific and policy landscape.

## **Consideration of the County Down TVR project**

The County Down Test, Vaccinate and Remove (TVR) project, conducted between 2014 and 2018, is the only bTB wildlife intervention field experiment to have been conducted in Northern Ireland to date. We believe it provides the most directly relevant empirical evidence available for assessing the potential effects of a badger intervention in a Northern Ireland context. However, we are concerned that the County Down TVR findings are afforded very little consideration in this consultation.

There appears to be an inconsistency in the treatment of methodological limitations across the evidence base. The limitations of the County Down TVR project are emphasised when considering the significance of its findings, while the Four Area Project, for example, is afforded substantial evidential weight despite having significant methodological limitations of its own, including limitations that overlap with those of the County Down study.

Although the TVR Project is used principally to inform operational feasibility, trapping, testing, costs and design, the study does not appear to have materially informed the assessment of the effectiveness of a wildlife intervention in reducing herd breakdowns. This is particularly concerning given that the project involved an intervention under Northern Ireland conditions and observed an approximately 86% reduction in badger TB prevalence but did not demonstrate a statistically attributable reduction in cattle TB incidence. Crucially, genomic evidence from the TVR Project indicated that cattle were likely driving the local epidemic.

This is particularly important because the consultation relies heavily on evidence from the Irish Four Area Project to validate the estimated benefits presented in the Cost-Benefit Analysis. The County Down TVR project provides evidence from the Northern Ireland epidemiological and policy environment and is therefore more directly informative to the question of how changes in badger infection translates into cattle TB outcomes in Northern Ireland than studies conducted under substantially different conditions. The real-world outcomes of the TVR project cast considerable doubt on whether the estimated benefits and savings underpinning the CBA are actually achievable.

A Northern Ireland field study in which a substantial reduction in badger TB prevalence was not accompanied by a statistically attributable reduction in cattle TB incidence should not be effectively discounted from consideration while studies conducted in other jurisdictions under different conditions are given greater prominence in efforts to inform estimates of the anticipated epidemiological benefits of intervention.

The limited consideration given to the County Down TVR findings therefore raises a significant concern about the balance of the evidence base presented to consultees, about whether the consultation gives appropriate weight to evidence that may qualify the expected benefits of wildlife intervention in Northern Ireland.

## **Reliance on modelling and derivative evidence**

The consultation places considerable reliance on modelling to justify a wildlife intervention. While modelling is a valuable decision-support tool, it is not a substitute for empirical evidence.

Model outputs depend on assumptions about disease transmission and intervention effectiveness, which remain uncertain and often scientifically contested. Small changes in these assumptions can produce markedly different results, and uncertainty can accumulate as outputs from one model are used as inputs to another. Consequently, we believe modelled estimates should not be presented as established evidence, particularly when the underlying assumptions may be contested.

While unequivocal empirical evidence supporting wildlife intervention has yet to be established, the absence of such evidence does not justify attributing greater certainty to modelling than the models themselves can support.

We are particularly concerned by the use of the 2019 Animal and Plant Health Agency (APHA) modelling paper, commissioned by DAERA, to justify a lethal badger intervention.

- The model's apparent benefits from lethal badger intervention are fundamentally conditional on its assumptions. They are modelled benefits, rather than observed Northern Ireland outcomes.
- The paper was presented in 2019. It does not therefore consider more recent evidence or data, particularly the empirical evidence demonstrated by the *actual* outcomes of the County Down TVR project.
- The modelling uses badger parameters derived from studies at Woodchester Park which may not be representative of the Northern Ireland context.

Although the modelling is ostensibly provided as evidence of *relative performance* of intervention options under consideration, we believe it may give consultees a strong impression of certainty about the effectiveness of a badger intervention when, in fact, no empirical evidence demonstrating an effect has been presented.

The 2019 DAERA/NIEA Follow up Report on the National Wildlife Management Centre TB model outputs acknowledges a number of limitations to the model and its outcomes.

The report concedes that the model:

- has substantial uncertainty: confidence intervals around the point estimates would be wide and could encompass all the intervention options and doing nothing;
- provides only a broad indication of relative performance, rather than demonstrating statistically significant differences between options;
- uses a simplified homogeneous landscape and does not account for farm fragmentation.
- lacks sufficient Northern Ireland field evidence;
- does not incorporate wider economic, environmental, legal, political or behavioural considerations; and that
- extrapolation from studies elsewhere could produce spurious assumptions.

Taken together, we believe these qualifications substantially limit the extent to which the model can demonstrate that a wildlife intervention would produce a predictable or measurable reduction in cattle TB under real-world Northern Ireland conditions.

Despite these acknowledged limitations, the report appears to give the model a stronger evidential status than these qualifications would support. In particular, it describes the model as 'validated', and states that *"DAERA's use of this TB model is validated by the fact it has withstood various peer reviews as indicated by the numerous scientific publications emanating for the model's outputs"*.

Peer review and publication do not, in themselves, constitute independent predictive validation of a model. They demonstrate that the methodology and assumptions have been subjected to scientific scrutiny, but they do not mean the model can reliably predict outcomes under real-world Northern Ireland conditions. Predictive validation requires comparison of model predictions with independent empirical observations.

The simulation model predicted a significant reduction in cattle TB following a TVR intervention. However, the subsequent County Down field study found no statistically significant effect. This divergence between the modelled prediction and the observed field outcome raises serious questions about the model's predictive validity and the danger of using its outputs to inform policy on wildlife intervention in Northern Ireland.

We therefore believe this model should not be treated as stronger evidence of intervention effectiveness than empirical evidence from an actual Northern Ireland intervention field study.

We also note the consultation places substantial reliance on evidence that is derivative rather than directly empirical. Analyses, models and conclusions presented in the wider evidence base may be ultimately dependent on a relatively small number of primary studies and datasets. We believe this distinction is important because a model output, review finding or assumption-derived estimate is not equivalent, nor should it be treated as equivalent, to an observed intervention outcome.

The evidential chain underlying DAERA's case for a wildlife intervention appears to progress from primary studies and observational evidence, through parameter estimates, modelling assumptions and interpretations of transmission, to conclusions about the likely effectiveness of badger intervention in reducing bTB in cattle. Each successive stage is dependent on the validity and reliability of the preceding evidence. Uncertainty, limitations or potential bias in the underlying evidence can be propagated, and potentially amplified, through subsequent analyses to influence the conclusions drawn about the likely effectiveness and justification for intervention.

We believe this of key importance where outputs from the 2019 APHA simulation model are used to inform the economic assessment. The model provides predictions based on assumptions, but it does not constitute direct empirical evidence that the predicted intervention effect will occur in Northern Ireland. The resulting economic estimate therefore remains conditional upon the validity of the underlying model and its assumptions.

There is a serious risk that the consultation gives derivative evidence greater evidential weight than is justified. A model-derived estimate of breakdowns avoided should not be afforded more weight than empirical evidence of an absence of observed reductions in breakdowns from a Northern Ireland field intervention, for example.

Although the uncertainty surrounding the estimated benefits is acknowledged to a certain extent, intervention outcomes derived from uncertain or model-dependent evidence should never be presented in a way that could give the impression they represent demonstrated real-world outcomes. Where the case for intervention depends materially on such derivative evidence, the uncertainty, assumptions and conditional nature of the resulting conclusions need to be made explicitly clear to consultees.

### **Cost-Benefit Analysis**

The Cost-Benefit Analysis (CBA) in Annex VIII is key to the proposal's justification for wildlife intervention. Section 5.3.5 of the annex acknowledges that *"it is not possible to be definitive on the number of breakdowns avoided as a direct result of each badger intervention option"*. However, we believe the CBA itself provides insufficient visibility of the substantial uncertainty underlying its estimates and conclusions.

Good practice should involve presenting confidence or prediction intervals, sensitivity ranges, or other appropriate measures of uncertainty around key estimate so that consultees can assess the precision of the results and the robustness of the economic case.

Presenting the benefits and savings as mainly single-point estimates creates an impression of accuracy that the underlying scientific and economic evidence does not support, giving consultees unwarranted confidence in the robustness of the economic case.

A precise model output does not make uncertain epidemiological assumptions more certain. The absence of confidence intervals or equivalent measures of uncertainty around the model-derived benefits therefore prevents consultees from determining the extent to which the apparent difference between an intervention and a *do nothing* approach is greater than the underlying statistical uncertainty in the model.

We believe the Cost-Benefit Analysis should also recognise the opportunity cost of allocating public resources to a wildlife intervention, including the potential benefits that could be achieved if those resources were instead directed towards proven effective measures to control bovine tuberculosis. The appropriate comparison is therefore between wildlife intervention and the alternative uses of the same resources, including additional enhanced cattle testing and surveillance, improvements to biosecurity, a greater emphasis on risk-based trading, and other cattle-focused measures capable of reducing transmission with established beneficial effects.

This is of key importance when a proposed wildlife intervention may have a relatively small estimated net benefit and where there is substantial uncertainty around that estimate. Equally, a finding that an intervention results in benefits that offset or are greater than its

costs does not mean it is the most effective use of public resources. The key question is whether the intervention produces greater disease reduction and public benefit than credible alternative interventions costing the same amount.

The options analysis should therefore have included, as a minimum, a properly specified baseline, the proposed wildlife-intervention scenarios, and one or more alternative cattle-control scenarios based on an equivalent level of public expenditure. This is particularly important given the evidence that cattle-to-cattle transmission is the primary driver of the persistence and spread of bTB.

The question is not simply whether wildlife intervention might produce a benefit, but whether it provides the best use of scarce financial resources for reducing bTB in Northern Ireland.

We believe the Cost-Benefit Analysis should demonstrate not just a positive central estimate, but also the robustness of that estimate, and whether the economic case survives reasonable uncertainty and comparison with alternative options.

Without this analysis, consultees are not being presented with the full policy choice. They are being asked to choose between forms of wildlife intervention, rather than being given the evidence necessary to determine whether wildlife intervention should receive public funding at all, and whether that expenditure represents the best available use of limited resources for reducing bTB in cattle herds.

### **Assessment of scientific evidence**

The scientific evidence presented in the consultation appears to have been subject primarily to internal scientific assessment by DAERA. The consultation does not identify the extent to which this assessment was subjected to independent external review.

This makes it difficult for consultees to assess the independence, robustness and balance of its scientific conclusions on which the proposed interventions are based.

Annex VI provides an annotated bibliography of peer-reviewed scientific literature published between 1 January 2015 and 31 May 2024 concerning badgers, *Mycobacterium bovis* infection and bovine tuberculosis (bTB) field intervention studies.

The opening paragraph states:

*“These articles have already been approved through each journals’ peer-review process, so no attempt has been made to critique these papers any further i.e. statements made in these papers are considered valid.”*

The fact that individual papers have passed a journal's peer-review process does not establish that their findings are equally robust, relevant to Northern Ireland, or sufficient to support the conclusions drawn from them. It does not remove the need to consider methodological limitations, conflicting findings, uncertainty, confidence intervals, effect sizes, competing interpretations or the extent to which particular studies can legitimately be applied to the Northern Ireland context.

By stating that no further critique has been undertaken, Annex VI risks leaving consultees with the impression that the findings reported in the papers can simply be accepted at face value. Although the bibliography is presented as a literature review, consultees may interpret it as a scientific opinion paper.

There is also a concern about the scope of the literature considered.

The bibliography is focused specifically on studies concerning badgers and *M. bovis* in the context of bTB field interventions. This may be relevant to the question of wildlife intervention, but it does not encompass all of the scientific evidence that may be material to understanding the persistence and transmission of bTB in Northern Ireland.

For example we believe evidence concerning:

- cattle-to-cattle transmission;
- the sensitivity and specificity of cattle testing;
- the consequences of false-negative cattle tests;
- cattle movements and herd-to-herd transmission; and
- the effectiveness and limitations of existing cattle-focused controls

may all be relevant when determining the extent to which wildlife intervention is likely to reduce disease.

The exclusion or limited consideration of such evidence risks creating an artificially narrow evidential framework.

It might also give consultees the impression that the scientific evidence relating to badgers is the only significant evidence relevant to the intervention decision. We believe a more balanced assessment should instead consider the full range of possible transmission pathways and their relative importance.

Annex VII is presented as a DAERA scientific opinion paper. Internal scientific advice is an important and legitimate component of government decision-making. However, in our view it is not equivalent to independent scientific review.

The consultation does not appear to provide sufficient information to enable consultees to establish how the scientific conclusions in Annex VII were independently challenged or tested.

This is of key importance where the scientific literature contains uncertainty, conflicting findings or competing interpretations. The issue is therefore whether the conclusions relied upon by the consultation have been subjected to sufficiently broad and independent scrutiny to give consultees confidence that the evidence has been interpreted objectively and in a balanced manner.

Given the potentially significant economic, social and animal-welfare consequences of wildlife intervention, this distinction is important. Where the evidence is uncertain or contested,

reliance on internal scientific opinion without clear evidence of independent challenge places a considerable burden on consultees to accept DAERA's interpretation of the literature.

As the proposed interventions will involve substantial public expenditure, uncertain benefits, and the killing of large numbers of a protected species, a higher standard of independent scrutiny should be expected.

We believe independent oversight is especially important because the consultation:

- relies extensively on predictive epidemiological and economic modelling;
- presents evidence from studies that continue to be debated and are subject to scientific uncertainty;
- contains analyses that depend upon numerous assumptions about transmission dynamics and intervention effectiveness; and
- proposes interventions with significant animal welfare and financial implications.

Taking this into account, good regulatory practice would normally favour transparent independent review to demonstrate that conclusions are objective and robust and not simply the product of internal consensus.

Therefore, key pieces of evidence, particularly foundational studies, studies that inform modelling assumptions and the ensuing evidence chains, or studies that are used to validate estimates, should be subject to rigorous evaluation and review by an independent expert panel.

We are concerned that the absence of such transparency makes it difficult for consultees to assess the credibility and objectivity of the evidence underpinning the proposed wildlife interventions.

We believe the consultation gives limited consideration and visibility to expert opinion that challenges, qualifies or provides alternative interpretations of the evidence underpinning wildlife intervention.

Considerable weight is placed on evidence supporting intervention, however the consultation does not appear to provide an equivalent account of credible scientific views that question the strength or reliability of that evidence.

This is important because the scientific evidence concerning the role of badgers in bovine TB transmission and the effectiveness of wildlife intervention is complex and subject to significant uncertainty.

The updated scientific opinion (Annex VII) is presented as a review of the latest evidence on badger intervention strategies, however it fails to give any meaningful consideration to more recent peer-reviewed reports challenging the effectiveness of badger culling in England.

Where evidence is contested or capable of more than one interpretation, consultees need to see not only the conclusions reached by the Department, but also the principal scientific arguments that support different conclusions.

The limited presentation of contrary opinion means that consultees may be left with the impression that there is greater scientific consensus and certainty than the underlying evidence warrants. This makes it difficult to determine whether conclusions in the consultation represent a genuine scientific consensus, the Department's preferred interpretation of disputed evidence, or a judgement made in the face of substantial uncertainty.

We believe a robust evidence-based consultation should identify and discuss material areas of scientific disagreement, explain the principal competing interpretations, and indicate why the Department has preferred one interpretation over another. Without this, consultees cannot properly evaluate the evidential basis for the proposed policy or the uncertainty surrounding its predicted benefits.

### **Consideration of welfare implications**

Two proposals under consideration, or which may be considered, raise serious animal welfare concerns:

- the use of stopped restraints (snares)
- the extension of the intervention window beyond the current open season (1 July–31 November).

The consultation gives insufficient consideration to the welfare implications of using stopped restraints (also referred to as snares) to capture badgers.

Although there is currently no legal definition of a snare in Northern Ireland, the commonly accepted definition is a trap designed to catch an animal by means of a loop or noose that tightens around it.

A stopped restraint functions as a stopped snare. It is designed to restrain a badger by means of a wire loop that tightens around the animal's body, rather than around its neck or a limb. Any distinction in terminology should not obscure the fundamental characteristic of the proposed method: a free-ranging wild mammal is physically captured and restrained by means of a looped restraint. This highly controversial method of capture is unlawful in Scotland and Wales.

The consultation's supporting material references two published studies examining physical injuries associated with the use of stopped restraints in badgers. The finding that 16% of badgers caught in restraints sustained injuries represents a substantial welfare concern and should not be treated as an incidental outcome. Neither study explicitly assessed welfare consequences relating to the stress experienced by the badgers caught by this method.

We are extremely concerned that the consultation does not appear to provide robust independent evidence examining the full welfare consequences of capture using stopped restraints, including the potential effects of prolonged restraint, fear, distress and physiological stress. These are fundamental welfare considerations when assessing a method that involves physically restraining any sentient wild mammal.

We consider the absence of comprehensive evidence should be treated as a material uncertainty in the welfare assessment, rather than interpreted as evidence that the method has a low welfare impact.

The consultation should explicitly acknowledge the limitations of the evidence base, including the apparent lack of independent research addressing the combined effects of physical injury, physiological stress, fear, distress and behavioural responses associated with restraint. It should also have explained how these evidential gaps were considered when reaching its conclusions on welfare.

The current presentation risks giving consultees a false impression that the welfare implications of this capture method are sufficiently established, when significant gaps in the evidence remain.

Although extension of the intervention window (open season) beyond the current 1 July–31 November period is not itself a firm proposal in this consultation, it is a potential consequence of decisions arising from the consultation. Consultees should therefore be made aware of the potential welfare implications of any such extension.

The consultation appears to treat the intervention window primarily as an operational and epidemiological consideration, rather than as a significant welfare variable. This is concerning because the timing of intervention can materially affect the welfare consequences for badgers, particularly where intervention involves the capture or killing of lactating females and the consequent separation of mothers from dependent cubs.

An extension at the beginning of the intervention period could bring intervention closer to the period during which cubs remain dependent on their mothers. An extension at the end of the period could introduce additional welfare risks associated with later-season trapping and exposure to potentially adverse weather conditions.

Treating an extended intervention period simply as an increase in the number of operational days risks overlooking these important seasonal welfare considerations.

Where the captured animal is a lactating female, the period of restraint represents a period during which she cannot return to dependent young. If she is subsequently killed, the consequences for those cubs may be substantially greater. The welfare assessment should therefore consider not only physical injuries associated with restraint, but also the duration and consequences of maternal separation. The potential welfare impact therefore extends to animals that may not themselves be captured or directly killed.

The welfare assessment needs to recognise that the risks cannot be evaluated solely by counting direct injuries or mortalities among captured or recovered animals. A comprehensive assessment needs to consider both the direct psychological and physiological welfare impacts on the target animal and the indirect welfare impacts on dependent offspring and wider family group members.

The consultation needs to explicitly assess the risks of maternal separation, abandonment and potential starvation of dependent cubs, alongside the direct welfare harms associated with capture, restraint and killing.

Without this crucial information, consultees cannot make a fully informed judgement about the potential welfare consequences of the options on which they are being asked to comment.

### **Inclusion of the 2016 TB Strategy Partnership Report (Annex V)**

The TB Strategy Partnership Report was produced in 2016, approximately ten years before this consultation.

During that period there have been substantial developments including:

- new epidemiological evidence;
- whole genome sequencing studies;
- updated analyses of studies referenced in the report; and
- outcomes and analyses of the County Down TVR project

We are therefore concerned that the consultation relies partly upon a document that could not have considered the latest available evidence.

Presenting a decade-old report as a consultation annex risks giving historical recommendations equal weight with more recent evidence and may also give it an authority and relevance that it does not deserve.

Although the TBSPG was characterised as an independent advisory group, its membership is primarily industry-focused, without equivalent specialist representation in badger ecology, wildlife conservation or animal welfare.

The TBSPG report was not an independent scientific review. It was established to produce a strategy rather than to conduct an independent systematic review of the evidence. Its role was primarily advisory and policy-focused, and many of its conclusions represent judgement.

Its inclusion may influence how consultees perceive the current evidence base and risks reinforcing pre-existing assumptions and confirmation bias.

We believe the inclusion of the 2016 TBSPG Report as a consultation annex is not justifiable. Its inclusion risks conflating previous policy positions with current scientific evidence and may

create the impression that the consultation is seeking endorsement of an established strategy rather than objectively evaluating the available options.

## **Monitoring and Evaluation Frameworks**

While DAERA indicates that animal welfare and ecological effects will be monitored, we do not believe the consultation sets out a sufficiently detailed monitoring framework. Consultees have no clear basis for assessing how monitoring would be undertaken, how appropriate baseline conditions would be established, which indicators would be measured, or what degree of independent evaluation and oversight would apply.

This is crucially important where controversial capture and culling methods are being proposed. Monitoring should not be treated simply as an operational safeguard to be applied after an intervention has commenced. We believe the consultation should establish a comprehensive and independently scrutinised monitoring and evaluation framework covering both animal welfare and ecological effects.

This framework should include defined baseline measurements, measurable and transparent outcomes, specified monitoring methodologies, reporting requirements, independent oversight, and predetermined thresholds that would require an intervention to be mitigated, modified or suspended where adverse effects are identified. Without such safeguards, harmful effects could remain undetected, be inadequately reported, or only become apparent after significant impacts have occurred.

We do not believe consultees can be expected to make informed responses when the consultation does not provide a sufficiently clear account of the statutory framework, operational safeguards and oversight arrangements that would govern the proposed interventions.

## **Conclusion**

Born Free does not consider that the evidence presented in this consultation provides a sufficiently robust, reliable or proportionate basis to justify a lethal wildlife intervention.

The evidence fails to establish with sufficient confidence that killing badgers in Northern Ireland would produce a meaningful and measurable reduction in cattle herd breakdowns, or that any such benefit would justify the substantial financial, environmental, welfare and ethical costs involved.

We consider much of the case presented for intervention depends upon evidence that is observational, indirect, model-derived or otherwise subject to significant uncertainty. The consultation does acknowledge important limitations in the underlying modelling, including substantial uncertainty around the predicted outcomes and the possibility that confidence intervals would encompass the different intervention options and doing nothing. However, these limitations are not adequately reflected in the way the evidence and economic case are presented to consultees.

This is extremely important when the modelled estimates of avoided herd breakdowns form the basis for the projected economic benefits of intervention. A model-derived prediction should not be treated as an observed outcome, and an apparently precise monetary estimate cannot remove uncertainty in the epidemiological assumptions on which that estimate depends. Where uncertainty in the predicted epidemiological benefit is substantial, it must carry through into the economic assessment and the resulting policy decision.

We believe the evidence concerning badger to cattle transmission is far more qualified than the consultation's presentation may suggest. The presence of *M. bovis* in badgers, spatial associations between badger and cattle infection, and genomic similarity between isolates does not establish the direction, frequency or epidemiological significance of transmission between the two species. The consultation cannot reasonably move from evidence of infection and association to the conclusion that lethal intervention will deliver a predictable reduction in cattle disease without addressing these key uncertainties.

We do not believe the consultation has adequately evaluated the evidence from other jurisdictions. In England, Wales and the Republic of Ireland, wildlife interventions have operated alongside extensive cattle controls and other changes in disease-control policy, making attribution of subsequent changes in cattle TB difficult. Progress in reducing bTB in Wales provides an important contrasting real-world experience because a significant reduction of bTB in cattle has been achieved without widespread badger culling. These programme-level outcomes deserve much greater critical assessment than they receive in the consultation.

Just as importantly, Northern Ireland has its own directly relevant empirical evidence. The County Down TVR project substantially reduced badger TB prevalence but did not demonstrate a statistically attributable reduction in cattle TB incidence. Whatever interpretation is placed on that result, it is of key relevance to the question of whether reducing infection in badgers under Northern Ireland conditions translates into a measurable reduction in cattle disease. It should therefore be given appropriate weight alongside, rather than effectively subordinated to, modelled predictions and evidence from other jurisdictions.

The economic case is insufficiently robust to support a decision of this magnitude. Where the estimated benefits are relatively small and are derived from uncertain epidemiological assumptions, a central-case positive estimate cannot by itself demonstrate that an intervention represents good value for public money. It is not simply whether a wildlife intervention might produce some benefit, but whether it is likely to produce a greater reduction in cattle TB and greater public benefit than alternative uses of the same resources, particularly enhanced cattle testing, surveillance and other measures addressing cattle-to-cattle transmission.

We are very concerned that the consultation has significant unresolved welfare and environmental uncertainties. The proposed use of stopped restraints and any potential extension of the intervention window raise serious concerns relating to physical injury, stress, fear, distress, maternal separation and impacts on dependent cubs.

Taken as a whole, we believe these issues mean that the consultation has not established a sufficiently robust case to demonstrate that a badger intervention would deliver the claimed benefits or savings.

We therefore believe the precautionary principle is particularly relevant in this case. Where the proposed policy involves the killing of a protected and sentient native species, substantial public expenditure and potentially significant ecological and welfare consequences, there should be an extremely strong robust evidential basis for concluding that the intervention is likely to achieve a meaningful benefit, and that it represents a proportionate and justified use of public resources.

In our view, this consultation has failed to meet that threshold, and the adoption and implementation of lethal wildlife intervention would expose DAERA to potential legal challenge under national legislation and binding international agreements, which in turn could result in further inappropriate use of public funds.