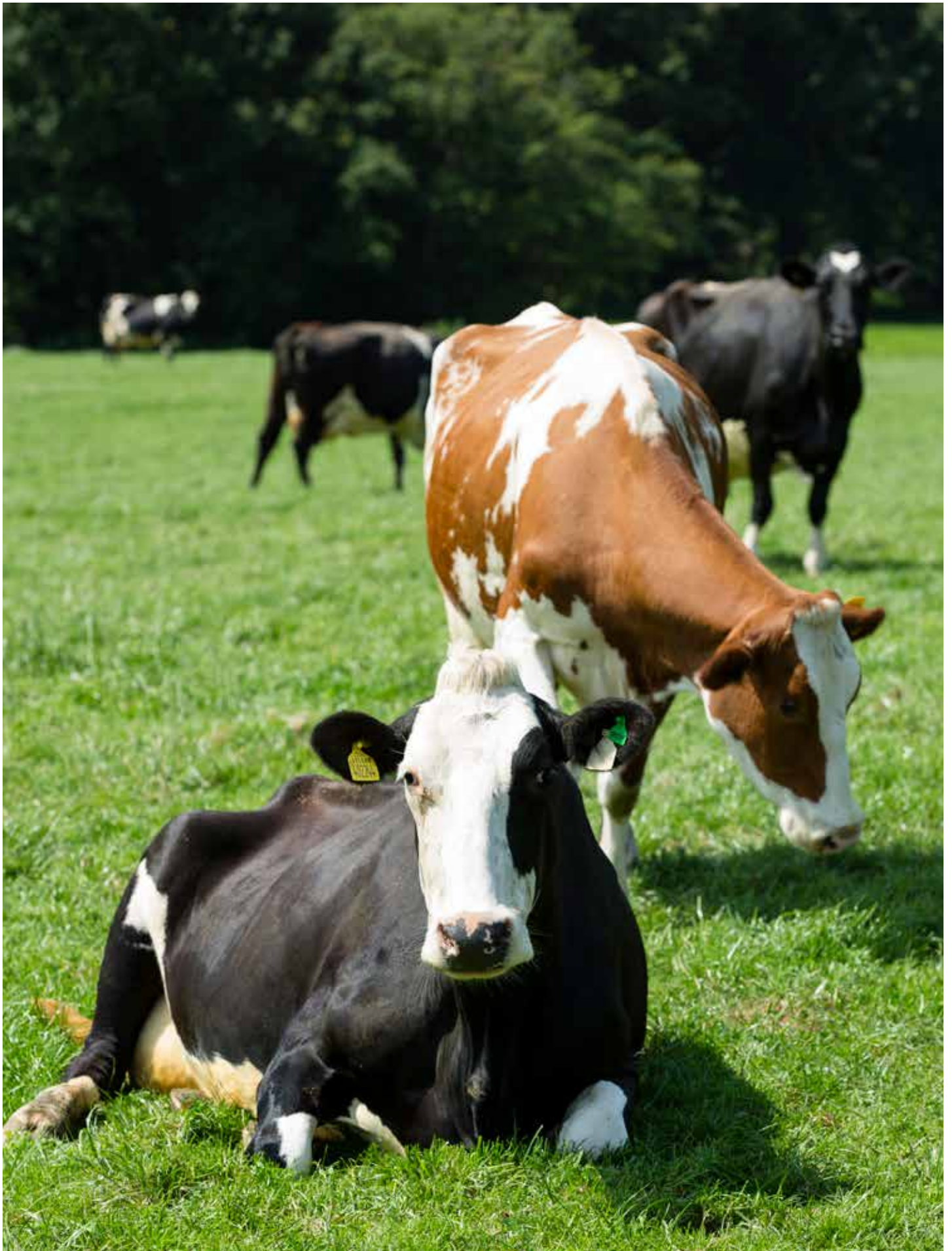




Ruminations on bovine tuberculosis (bTB):

A summary of stakeholder responses to the RSPCA's bTB eradication consultation





In 2019, the RSPCA invited views on proposals for management measures that we would like to see implemented to halt the spread of, and ultimately eradicate, bovine tuberculosis (bTB) in cattle in England and Wales. As part of the process, the RSPCA produced a report, *Bovine TB: It's not all black and white*. The report outlined the measures that we believe should form the focus of any bTB policy, along with more detailed reasoning behind those proposals and references to the relevant literature to support our arguments.

bTB and the policies enacted to tackle it can have serious emotional and financial impacts on farmers, their families and their communities as well as suffering and death to huge numbers of cattle and badgers. Recent and more historical data indicate that current approaches are failing to bring this devastating and widespread disease under control, let alone eradicate it. A more humane, evidence-based and sustainable solution is urgently needed.

The RSPCA does not support the current badger culling policy, which to date has been expanded year on year with only limited evidence that it is having a positive impact on bTB and the true/definitive reasons behind this effect unclear. Historically, the RSPCA has been supportive of scientific investigations and trials on the association between badgers and bTB infections, but we – along with many international experts – believe the current culling programme has no scientific basis.

However, we are aware that our opposition to the widespread culling policy has resulted in some people viewing the RSPCA as 'pro-badger' and so, by default, anti-cattle, despite clear information and evidence to the contrary. The RSPCA agrees with the conclusions of the Godfray report (Godfray et al. 2018), in that the focus on the badger has prevented other, more effective and relevant measures being taken to prevent the spread of disease between cattle. The RSPCA would take this one step further and say that, for some people, the focus on the badger has shifted the blame entirely onto the badger, as demonstrated by correspondence in the *Veterinary Record* (Loeb 2020), with the unfortunate side effect of many believing that cattle are not part of the problem.

The object of the RSPCA report was to outline why we believe that focus on control needs to switch to cattle-based measures and to provide evidence for why an undetected reservoir of disease in cattle is a much greater cause for concern. The associated consultation then provided those who read the report with an opportunity to comment on our proposals.

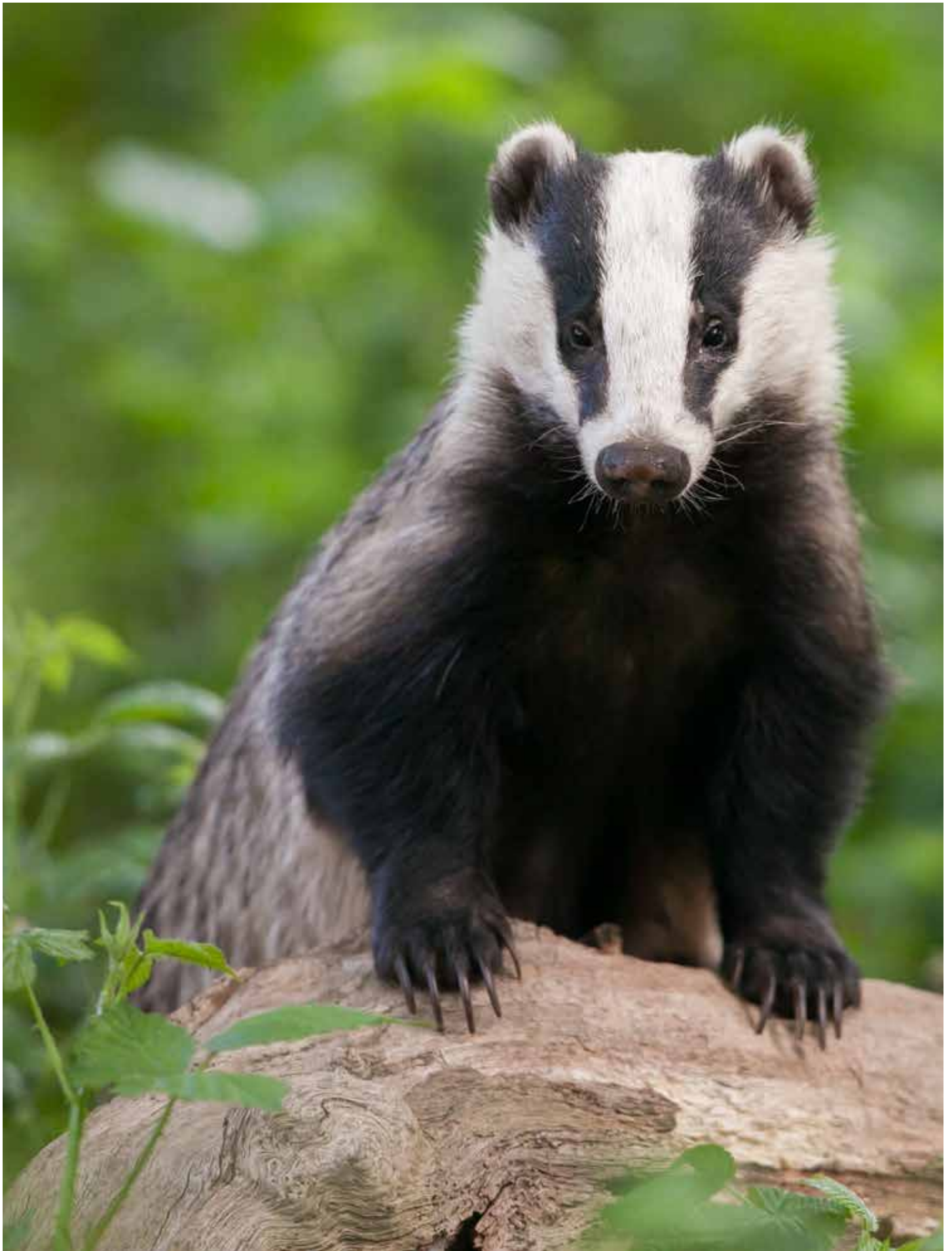
This consultation was open to the public on our website, but the RSPCA specifically sought views from farmers and vets as they are at the forefront of efforts to manage this disease, though others' views were also welcome and valuable. The RSPCA accepts that some stakeholders' responses may have reflected their attitude towards the RSPCA and hence may have been skewed by some people wishing to express their general view of the organisation's stance on this topic. However, responses from some members of the public who are not involved in farming may have, likewise, caused results to be weighted in the opposite direction.

The consultation was open for responses for six weeks, from 16 September to 1 November 2019.

The RSPCA acknowledges that things have changed since the conclusion of the consultation. The government has published its response to the Godfray report (Defra 2020) and we are pleased to see that the government has included many proposals focusing on improved management of the disease in cattle, including six-monthly testing in the High Risk Area (HRA) and the need to better empower private vets to tackle this disease – both proposals the RSPCA supports. More recently, the government has launched two consultations, to gather responses on proposals outlined in its response to Godfray, including changes to cattle management practices and an exit strategy for badger culling. The results of the first consultation have now been published with new policies on increased use

It is our belief that everyone wants the same outcome – successful management, and ultimately, eradication of bTB in both farmed and wild animals. The RSPCA hopes to join with industry bodies to align messaging and provide support in the many areas in which we are unified on this matter. The RSPCA is committed to helping farmers in managing and eradicating bTB*.

*If you would be interested in finding out more about this please email: bovinetbteam@rspca.org.uk and we will contact you in due course.



of additional tests are welcome. We also welcome the new Cattle Health Certification Standards (CHeCS) accredited TB Entry Level Membership aimed at making it more accessible to more farmers and including a new training programme for participating vets in the management of bovine TB. However, we note that badger culling will continue for the next few years and that it will always be available if it is decided it needs to be deployed.

General overview of responses

Overall, the RSPCA reached its target audience with many farmers and vets providing responses early in the process. Many responses were thoughtful and well considered, indicating that the relevant sections of the RSPCA report had helped to inform the responses – this provided us with valuable insights, for which we are very grateful. Other responses appeared not to relate to the recommendations being proposed, perhaps being more motivated by an individual's attitude towards the badger cull overall. These included responses both in favour of and against the cull.

Introductory questions

1 Please let us know about your profession:

Farmer (owner), farmer (tenant) land agent, farm advisor, farm manager, veterinary surgeon, scientist/academic/researcher, NGO employee (animal charity, nature conservation charity, etc.), interested member of public, other.

2 How long have you been in this profession?

0–5; 5–10; 10–20; 20–30; More than 30 years; N/A

3 Please tell us which area you are in as defined by bTB strategy in

- England: High Risk Area (HRA), Low Risk Area (LRA), Edge Area
- Wales: High TB Area; Low TB Area; Intermediate Area
- Scotland

Many responses were thoughtful and well-considered, indicating that the relevant sections of the RSPCA report had helped to inform the responses.



4 For England, please tell us if you live in a badger cull area:

- Yes
- No
- Don't know/not sure

Overview of responses for questions 1–4

- Overall, there were 1,177 responses comprising:
 - 598 farmers (owners, tenants and farm managers)
 - 112 vets
 - 406 members of the public, with other categories containing a few individuals.

The target audience made up 61% of the total (51% farm, 10% vet). Members of the public made up 35% of responses.

- Only 48% of responses provided feedback on all questions (i.e. had a 100% question response rate). Some questions were not relevant to some individuals. For example, the question on herd health plans was not relevant to those not working with cattle and did not have an option for 'not applicable' so this level of completion is unsurprising.
- The location of respondents was predominantly England (87%), which means we received very limited insight into what Welsh farmers and vets think of the policies enacted there. The report was not specifically focused on England, with the exception of the chapter on alternatives to badger culling (Chapter 7).
 - Of the English respondents, 36% recorded themselves as being in a cull area.
- 43% of all respondents were based in the HRA.
 - Of those in the HRA 65% reported themselves as being in a cull zone, 22% were not and 13% were unsure.

Proposal 1:

Formation of bTB control cooperatives

RSPCA PROPOSAL: To restructure current cull companies into bTB control cooperatives and give them responsibility for funding bTB control, such as allocating grants to those involved in the company for advice (financial and veterinary advice including potential use of further tests) and implementation of biosecurity and biocontainment measures on their farm.



Studies done with farming communities in areas with relatively high incidences of bTB have shown the disease has a huge impact on farming communities, leaving many feeling helpless and resigned.

The badger cull in England, when introduced in 2013, was the first opportunity farming communities had to come together and address the disease proactively as a local community. The year-on-year increase in cull licences applied for and granted, shows how much the farming community has pulled together to address the disease in the only – and from their perspective, the most obvious and straightforward – way open to them and which in some cases, they have been encouraged to undertake.

Each licence requires:

- landowners to sign up to their land being accessible for culling to take place on it
- significant financial investment from those setting up the company, and
- coordination: to apply for the licence, ensure the requirements of the licence are met and the personnel to carry out the culls are equipped and trained.

This needs an underlying dedication and cooperation. We believe this to be a demonstration of the desire and commitment of local farming groups to work collectively and effectively to control bTB, and an opportunity to expand the role of these structured groups.

We proposed these community groups, currently focusing on badger culling, should be restructured to manage all aspects of bTB control at a local level – from biosecurity implementation to enhanced testing uptake so that bTB can be effectively controlled and managed by those who know the industry best. This would replace their role in organising and delivering the culling of badgers, which we feel should not be part of their remit, making them more effective in the successful management of the disease.

There has been poor uptake of biosecurity and TB management advice currently offered free or heavily subsidised by such schemes as the TB Advisory Service (TBAS) and Cymorth Wales. It is acknowledged this poor uptake may be due, at least in part, to a lack of awareness, but it is necessary that farmers engage with these initiatives especially since the new approach recently announced by the government will involve more focus on these non-cull activities.

Stakeholder responses:

- 5 **Do you agree with our proposal that the cull companies should be restructured into bTB control cooperatives with the ability to offer grants or other schemes?**
 - There was general opposition to cull companies becoming cooperatives (58% against). 54% of veterinary responses and 76% of farming responses disagreed with this proposal. Members of the public, however, agreed with this proposal with only 33% against it.
 - Those against the proposal tended to state it was because they felt culling should be kept as an option. It should be noted that this was not excluded as an option in the proposal (despite the fact we do not think it should be an option) but that control of culling (i.e. licences granted, etc.) should be maintained by Natural England, etc. as it is now.

- Some felt the cull companies already covered the areas laid out in the proposal, however, this is not the case since the idea was for cooperatives to offer information on all options (including badger vaccination, further testing, etc.) and decide where, as a local community, farmers wanted to invest money, and how they could best control bTB in their area.
- Responses in favour of the cooperatives felt that insufficient focus was placed on other measures, particularly in areas where badger culling was occurring, and that these needed to be taken more seriously.
- Responses may have also been affected by the suggestion that reimagined companies would offer those in the community a way to limit or prevent practices that the majority disagreed with, if they felt it increased disease risk.

The RSPCA still believes in developing these cooperatives to give farmers and local communities more control and community responsibility towards tackling bTB. Such reimagined companies would provide a platform for all methods of control to be discussed and considered equally, rather than one method of control being focused on to the detriment of others. Another advantage of such companies would be to develop a wider approach to bTB, rather than one based on each farm. We believe there would be benefits to having an approach based on village, parish or a wider area, especially in terms of developing risk-based trading processes. We also note that this approach would fit extremely well with the government's recently announced forward plan for bTB control.

The government's response to Godfray has stated that badger culling is going to continue for the next few years, but that it will be phased out over the next 10 years. However, like Godfray, the government recognises that local groups will

play an important part in controlling the disease: *"The government believes that there are opportunities to build on and extend the existing network of local bTB partnerships, driven by shared government-industry governance, and incorporating bespoke biosecurity interventions and wildlife control."* This includes the existing bTB Eradication Groups. The RSPCA is heartened that the government agrees not only with the principle that those working on bTB control in their local area have an important role to play, but that there is also more they can do to achieve this through directing focus onto a broader range of control strategies.



The RSPCA acknowledges the good work being done by TBAS and others in managing the disease. We would like to see more funding offered for the operation of these schemes and incentives for farmers to seek their advice, even in low risk areas, as prevention is better than cure.

6 How can the agencies currently offering grants or free schemes improve farmer engagement and uptake?

- The main reasons (from both farming and veterinary responses) given for poor uptake of existing schemes was a lack of communication, or communication being delivered through the wrong channels. Most members of the public responded that they were unable to give a view on this question.
- In our report, the RSPCA comments about the lack of uptake for TBAS, but from responses to the consultation, it seems that this is largely down to marketing; those who have had a visit by TBAS spoke positively about the scheme and would promote it to colleagues, indicating that word of mouth and case studies could be one of the best ways to market such schemes.
- Suggestions were made that funding opportunities and free advice schemes should be advertised through widespread media channels such as the farming press.
- Suggestions for further communication and marketing of TBAS or similar schemes included:
 - sending leaflets/information about available schemes with Animal and Plant Health Agency (APHA) notifications of TB testing or test results
 - representatives' attendance at local markets or farm events (although we note some schemes have been present at big events such as UK Dairy Day)
 - using local vet practices to target farms proactively before a breakdown occurs.

- Some responses from farmers indicated:
 - a belief that any measures would be ineffective without concurrent badger culling
 - that they want practical advice and to be given costed options in order to make more informed decisions about what was best for their business
 - there is distrust among some farmers of external advisors, such as APHA, Defra and the RSPCA. These respondents wanted their local vet to provide this advice, a point that was supported more broadly by responses from farmers to later questions.
- Veterinary responses indicated a desire to understand all options more thoroughly, including the economic implications of potential measures. This desire to know more detail was also echoed later on in the survey.
- Responses from members of the public indicated that they felt there should be an obligation for producers to cooperate with these schemes with some kind of incentive (generally proposed to be in the form of compensation penalties for those not partaking).

The RSPCA welcomes these responses as they include some constructive ideas and, in our view, have given an indication (in combination with responses to other questions later in the survey) of the direction those coordinating training programmes or advice programmes should try to take for most success. It also seems clear that one proposal the RSPCA was considering, in terms of providing a service for farmers, needs to be reviewed.



7 What do you think the current schemes have done/failed to do to achieve better uptake?

- Most of the responses echoed those of question 6, though some slightly different themes did come through. This question did not intend to suggest that current schemes, such as TBAS, are not excellent sources of information for producers. Indeed we hold the opposite opinion, but it is acknowledged by those running these schemes that uptake has been disappointing, especially in light of the positive reviews they receive.
- Some comments indicated that more focus and publicity needed to be given on the positive outcomes delivered by these schemes, through the promotion of case studies. Others stated that such schemes need to demonstrate that the measures they propose really can reduce bTB in cattle.
- Some vets indicated that in their experience these schemes are often discovered by, or suggested to, a producer after an outbreak, which is too late in terms of bTB management. It also generally means the producer is in a different mindset, being busy focusing on minimising the impact to the business and the stresses associated with a breakdown and hence not prioritising the taking of advice on more holistic measures.

- Other respondents, generally from within the farming community, mentioned that even with good uptake, a lack of follow-up by the scheme meant that implementation would be low (some also attributed this to a lack of grants to invest in necessary changes), and the feedback was that a continued conversation was necessary to see what had worked and what needed adjusting.

Overall, the responses to this section were very informative.

The process would be more efficient if such advice was required at a local level, such as through the bTB cooperatives we proposed, as a cooperative approach over a wide area may well spread the benefits of measures taken and encourage producers to implement the plans. Much of the advice would be relevant to other farmers in the area and a cooperative approach over a wide area may also help spread the costs of any actions as well as the benefits. The cooperatives could possibly help with this funding, for example by agreeing that all producers receive the funds to implement the top two recommendations in their tailored plan.

Proposal 2: Strengthening biosecurity, biocontainment and cow resilience

RSPCA PROPOSAL: a. Encourage changes in farm management to improve biosecurity and biocontainment and to generate more resilient animals. This would include a bTB management plan tailored to each farm, taking into account each farm's financial situation and bTB risk level.

b. Assurance schemes to come together to produce aligned bTB control plans for scheme members, with standards including minimum biosecurity requirements to specifically prevent bTB.

Cattle management

We believe it is important farmers take more ownership of the management of the disease. As a first step, this could be through developing robust bTB management plans with their own private vet, who has undergone additional specific training.

We believe bTB management plans should include all aspects of preventing and controlling bTB and be specific to the farm, taking into account size, husbandry systems and resources.

The plan should consider:

- Biosecurity – the risks of disease entering the herd, and how these risks can be effectively managed to predict and prevent a herd becoming infected with bTB
- Biocontainment – the risks of disease spreading within the herd if it already exists, and how these risks can be managed in the case of an outbreak
- Resilience – the risk of individual susceptible animals to succumb to the disease and how this can be managed, through husbandry, nutrition and genetics
- Surveillance – the best use of the tests available, including statutory and non-statutory tests, to detect disease and identify infected and infectious animals.

Biosecurity requirements

Currently, members of badger culling companies have to have biosecurity measures in place: *“Reasonable biosecurity measures are... implemented by participating farmers on their land to provide a strong protection against the*

spread of infection. For this purpose ‘reasonable measures’ means measures that in the particular circumstances are practicable, proportionate and appropriate, having regard to the bTB Biosecurity Five-Point Plan”. These are reviewed by Natural England (NE) though spot-checks were only conducted on 5% of farms involved in the culling and the measures are not comprehensively detailed. For Approved Finishing Units (AFUs) there are terms and conditions which must be met, and the most recent proposal for Approved Finishing Units: Extended (AFUEs), had the most comprehensive set of biosecurity measures within the terms and conditions of any to date. The relevant measures should be extended to all cattle producers at high risk of a bTB breakdown, especially those partaking in a badger cull.

Biocontainment requirements

Biocontainment (the steps taken to reduce the risk of a disease spreading within/through a herd) is rarely addressed as a topic in itself in the context of bTB management.

Like many aspects of controlling this disease, biocontainment measures are likely to require financial input and management changes. They will, however, likely result in improvements in other aspects of cattle farming and welfare. Measures such as good colostrum management, improved buildings, and steps to reduce the stress of the animals e.g. through improving comfort, reducing social mixing during the production cycle, etc. should all be considered according to the individual farm's situation.

¹ Defra (2018) Guidance to Natural England: Licences to kill or take badgers for the purpose of preventing the spread of bovine TB under Section 10(2)(a) of the Protection of Badgers Act 1992 pg 5.

Stakeholder responses:

8 Do you agree with our proposal that each and every cattle farm should have a farm-specific bTB management plan?

- 77% of vets thought every farm should have a specific bTB management plan.
- Only 49% of farm respondents thought this was necessary, a result that perhaps provides some explanation for the poor uptake of schemes such as TBAS, and which could be linked to the fatalistic attitude that some in industry are reported to have towards the disease (Maye et al. 2014).
- Concerns were raised by vets regarding implementation of these plans; a couple of farmers' comments indicated that they did not implement their plans, either due to a lack of faith in its effectiveness or a lack of funds.
- 85% of the public agreed with this proposal, with many expressing shock that it wasn't the case already, particularly in situations where badgers were being culled.
 - Members of the public also stated that such plans would be pointless without implementation and that this would need to be overseen and supported.
 - Two suggestions put forward were of particular merit:
 - One suggestion was for an online form that could be used to create an automated bTB plan for an individual's 'type' of farm. We would expand this to suggest that such a plan could include the basic principles and then offer suggestions to farmers of areas where their farm is at particular risk so they can receive targeted and tailored advice to address the risks. Thought needs to be given as to who would operate this service though.
 - Another suggestion was to have bTB plan templates which could then be tailored to an individual's circumstances.

Both these suggestions indicate an awareness of the time constraints farmers and vets are under. They also display an appreciation that some measures for some farms would be an unnecessary waste of resources (both time and money) and that such plans are likely to obtain the greatest traction and implementation if they are specific and realistic.



9 If you currently have a Herd Health Plan, does it include measures to prevent or reduce the risk of infection by bTB:

- **Within the herd or between herds?**
- **Between cattle and wildlife?**
- 58% of the veterinary respondents and 53% of the farming respondents reported producing or having a Herd Health Plan (HHP) covering bTB, though the nature of the question made it difficult to know how many draw up/have plans which do not include bTB measures.
- The vets' responses reported that 77% of plans address both cattle-to-cattle and cattle-to-wildlife aspects; only 44% of farming responses indicated this.
- Farmers reported that 71% of herd health plans addressed within and between herd measures and 56% had cattle to wildlife measures.
- 63% of veterinary responses indicated their plans covered within and between herd transmission and 52% covered cattle to wildlife measures. However, many vets responded 'not applicable' in the comments box, possibly due to the wording of the question (Q9, also relevant to Q10).



In particular, the poor take up of on-farm biosecurity measures and the extent of trading in often high-risk cattle is, we believe, severely hampering disease control measures. All the industry bodies we spoke to recognised this as an issue and saw the need for industry to take more ownership of the problem.

An extract from the Godfray Report 2018

10 If not, is this something you would discuss with your vet when next reviewing your HHP?

- The majority of veterinary and farmer responses (55% and 58% respectively) indicated that if they did not have a HHP covering bTB they would discuss this at their next HHP review.

The responses to this set of questions were interesting. Although members of the public were not the main target for this consultation, their reaction to the fact that there is no requirement for a TB health plan is something the industry should take notice of. As the RSPCA's views have been supported by the veterinary community's responses, the Society has added a specific requirement to the *RSPCA Welfare Standards for Beef Cattle* for bTB to be addressed in the Veterinary Health and Welfare Plan (VHWP) on all RSPCA Assured beef units, and intend to make this a statutory requirement for the dairy cattle standards too. This requirement has always been in the standards, but it was only compulsory if the disease was "currently affecting and likely to affect the herd". This has now been extended so all herds, regardless of location or bTB risk, must have a bTB management plan in place as part of their VHWP. We note that the British Veterinary Association's (BVA) policy on bTB (BVA 2020), includes a recommendation on the need to include how new animals are introduced to the herd and isolated in their HHPs.

The government's response to Godfray indicated that they will consult on a requirement for herds with persistent bTB (a breakdown lasting 18 months or more) to have a HHP in place with specific bTB measures. It is reassuring that it may become a requirement for some farms to have bTB specific aspects in their HHP but disappointing that this doesn't cover a higher number of farms.

Proposal 3: Funding of control measures

RSPCA PROPOSAL: Funding of the improvements in biosecurity and biocontainment, provision of financial and specialist veterinary advice and further testing should come from a variety of sources, some government and some industry (as is currently the case) – for example from the bTB control cooperatives, via milk premiums (where applicable) or assurance schemes.

Government currently spends more than £100m per year on the control and eradication of bTB. Each new breakdown in the high risk area is estimated to cost £19,032 (2018 prices) with government costs amounting to £8,929 and farmer costs of £10,103. However, there is no significant funding directed at those farms that do not have a breakdown but are at risk through poor biosecurity. There is an opportunity to direct funding at prevention rather than control. The government's response to Godfray (Defra 2020) acknowledged that farmers who implement biosecurity measures should be recognised, but through reduced rates of compensation for those not complying with biosecurity requirements rather than grants that would allow farmers to implement improved biosecurity. However, we note that grants for biosecurity measures which would be relevant to the control of bTB may be available through the mechanisms introduced in the Agriculture Act 2020 for improving the health and welfare of livestock. There may also be other mechanisms where funding could be available, such as the Animal Health Pathway. However the funds are provided, we view this as a good example of public money being spent for public good.

We believe that alongside free advice services, such as the TBAS, and/or funding for improved handling facilities incorporating biocontainment measures into on-farm management, it is vital that producers receive financial advice. Many of the proposed changes have financial implications and changing the testing regime could result in the loss of many more cattle as the undetected reservoir we believe exists in the cattle herd is gradually identified, as is being seen in Wales. We are convinced that, although this has significant financial implications in the short term, in the longer term the removal of the animals will have a meaningful effect in reducing bTB in the cattle population and will have a smaller net cost along with the many benefits from achieving true Officially TB Free (OTF) status.

In the Welsh bTB eradication programme, the targeted chronic farms receive financial advice as part of the package, as it is acknowledged that TB costs go beyond the test itself and the possible loss of cattle. They also include the loss of productivity of that animal – her milk, her calf and her genetics, and producers will need a long-term financial business plan in place to reassure them while they get bTB under control on their farm.

Stakeholder responses:

- 11 Do you agree with the proposal to review funding mechanisms for controlling and eradicating TB, so that farmers are incentivised to prevent bTB entering their herds, rather than compensated for having it?**
- 64% of veterinary responses thought funding mechanisms needed reviewing, moving away from compensation (although not removing it altogether) and moving towards incentivising those currently free, and those with breakdowns, to keep bTB out of the herd, or eliminate it from the herd.
 - Only 34% of farming responses wanted funding reviewed. Responses indicated that the hassle, loss of time and potential loss of animals was an intrinsic motivation (this was acknowledged in the RSPCA report). They felt that compensation should not be removed since all measures may be being taken but the herd still breaks down with bTB with this sometimes being attributed to uncontrollable wildlife sources when animals are out at pasture.
 - 83% of responses from members of the public wanted to see current funding mechanisms reviewed.

The RSPCA continues to believe that funding needs reviewing, with an increased emphasis on financial incentives for farmers willing to take steps to keep bTB out of the herd, or minimise the impact of bTB within the herd. Comments received stating that farmers have not been able to action HHPs due to lack of finance reinforce the view that funding mechanisms need to be reviewed. Compensation is still likely to be a necessary part of the bTB programme. However, we believe this should be reviewed so those that are taking all possible steps are fairly compensated, but those undertaking what Godfray describes as “risky trading” (Godfray et al. 2018) or not proactively engaging in bTB control on their farm should not receive the same levels of compensation. In some circumstances, they should perhaps forego compensation. The new Agriculture Act offers possibilities for providing a different funding mechanism as the UK weans itself off the Common Agricultural Policy (CAP). The government has stated that direct payments will end as a consequence of leaving the EU and that there will be “...support for farmers to invest in equipment, technology and infrastructure that will help them deliver ‘public goods’, and improve productivity”.

12 Do you think any of the following could be used to create better funding to prevent and control bTB (10 strongly agree – 1 strongly disagree)?

- Capital grants to improve handling facilities and allow more thorough skin testing.
- Capital grants to help implement biosecurity and biocontainment measures.
- Graduated compensation payments dependent on compliance with biosecurity and biocontainment standards i.e. ‘earned recognition’.
- Premiums for products (meat and milk) from TB Free herds.
- Financial support for specialist veterinary advice for prevention and control of TB in the form of a farm-specific bTB management plan.
- Capital grants to improve biosecurity and biocontainment were ranked as most important, followed by financial support for specialist veterinary advice for prevention and control of bTB in the form of a farm-specific bTB management plan. This was the

We believe that alongside free advice services, such as the TBAS, and/or funding for improved handling facilities incorporating biocontainment measures into on-farm management, it is vital that producers receive financial advice.

case in the overall responses, the individual farmer responses and the veterinary responses. Members of the public however ranked these the other way around, with funding for specialist veterinary advice highest, followed by grants for biosecurity and biocontainment measures.

- Premiums for meat and milk from TB Free herds were lowest in all categories (veterinary, farming, members of the public and overall), and most strongly rejected by the farming responses with 50% of respondents strongly disagreeing with this (compared to 10% of all respondents ‘strongly disagreeing’ with this proposal). Farmer responses to other survey questions, stating the view that bTB is a government issue, along with the belief from many that they are taking all measures to prevent bTB in their herd yet still experiencing bTB breakdowns, is likely to have influenced this view about compensation criteria.

The RSPCA notes that funding for incentives, such as capital grants to improve biosecurity and biocontainment ranked high among most respondents and this supports the idea that the funding mechanisms could be overhauled, with more emphasis placed on prevention. With regards to having a premium for TB Free products, if the responses do reflect an attitude within industry that bTB is the government’s problem, then this is disappointing, particularly as Godfray stated that industry should take more ownership of the disease. It is good to note that the government’s response to Godfray has highlighted a need for industry to feel a shared sense of ownership of the disease and that it sees this as an important factor in eradicating this disease.

Proposal 4: Strengthening and supporting the role of vets

RSPCA PROPOSAL: a. Private vets and government vets to take a greater role in proactively managing the disease through discussions with clients, development of farm-specific HHPs, knowledge exchange and applying for licences so as to be able to offer clients the ability to carry out further testing.

b. Government to facilitate applications by private vets to carry out further testing (i.e. using other tests alongside the Single Intradermal Comparative Cervical Test (SICCT) through developing clear guidelines published on the TB hub after reviewing and simplifying the process with input from private vets.

Both government vets and private vets have important roles to play in the control of bTB. In recent years private vets have largely had a role in carrying out TB testing on their clients' farms, but proactive planning and discussion about how to tackle bTB on-farm has rarely been carried out.

While initiatives such as the TB Advisory Service and various industry conferences are welcome, relatively few farmers and vets engage in such events or services. There is a potential for a network of specifically trained vets to become TB advisors akin to the Accredited Johne's Veterinary Advisors who make up part of the successful National Action Group on Johne's strategy.

Access to further testing such as PCR, ELISA, Enferplex and Actiphage testing is currently tightly controlled and the process whereby a vet can get permission to carry out such tests is complex and time-consuming (see Proposal 5 and our report *It's not all black and white* for details of the potential benefits of using these). It is vital the government facilitates private vets' access to these tests. We propose a thorough review, undertaken with practising private vets, to simplify the process where possible, culminating in clear guidelines about the availability and use of novel tests as part of a bTB management plan on the TB hub. This should give private vets confidence they can complete the process in line with the law and quickly so it is easily manageable.



Stakeholder responses:

13 Do you think a network of specifically trained Accredited TB Advisors should be facilitated to provide specific advice on bTB prevention and control through private veterinary practice, working in partnership with APHA?

- 80% of veterinary respondents saw a benefit to having specially trained bTB veterinary advisors, similar to the Action Johne's scheme, with a training programme alongside monitoring to ensure delivery was consistent across those taking part. Some also wanted the training to cover the financial implications of the measures as they recognised their knowledge gap in this area.
- Among the farming community only 44% wanted this, with comments indicating either that their local vet practice was already TBAS trained, or that they didn't want external advisors coming in to give advice but wanted advice from their local practising vet.
- Responses from members of the public indicated 85% were in favour of this proposal; 62% of the overall responses were favourable.

The differences in responses between vets and farmers was interesting as the farmers appear to have much faith in their vets while the vets acknowledge that they would benefit from more information. The RSPCA thinks that this proposal should be amended to reflect the wishes of the farming community to have their local vet provide them with bTB control advice. We therefore propose that local vets are given the necessary knowledge and training to be able to provide advice to their clients, a proposal echoed by the BVA in its TB policy document (BVA 2020). The aim should be to ensure that all farm vet practices have at least one bTB Special Advisor who can disseminate knowledge to their colleagues and give producers more detailed bTB control advice covering all options, including a knowledge of the economic impact of the various choices. This should not be focused on HRA and Edge only; all farmers and vets need to have access to the same information. This can be demonstrated by the rapidity with which the disease has spread within the Edge area, and 'hot spots' that have developed in LRAs. Anecdotal evidence received from both farmers and practising vets in these areas indicates that bTB hadn't been a disease they were worried about or focused on. So, when farms began to

break down with bTB nobody knew how to deal with it or what to do, and hence the opportunity for proactive measures and quick action to curb the spread had been lost.

14 Do you have any other suggestions as to how the veterinary profession can become more involved in contributing to the management of bTB on individual farms and across industry as a whole?

- The response rate for this question was particularly low, with only 30% of respondents providing comments.
- Suggestions from the farming community indicated they wanted vets to have:
 - more of an economic appreciation of their suggestions
 - more autonomy over further testing of cattle.
- Veterinary suggestions included more communication with APHA, including being informed of clients' bTB results in more detail, and having regular updates about the local bTB situation to inform their advice to their clients. They also wanted clearer information about the additional tests offered for cattle including:
 - what steps would be taken in the light of the results of such tests
 - what each test could offer and its drawbacks in comparison with others
 - more autonomy over the use of these tests.
- Veterinary respondents also wanted guidance about schemes and grants available to farmers and how to apply for these. Some also mentioned a desire for vets to have a unified voice across the profession to avoid polarised opinions, which make it difficult for consensus to be heard as to what is the best thing to do for cattle.
- Some farmers and vets mentioned a desire for the control over badger culling to be held by the vet overseeing an individual farm, making decisions for that farm, with a few indicating this could be achieved through a Test and Vaccinate or Remove (TVR) system. Although we see the benefits in terms of only infected badgers being culled and thus presumably a reduction in the numbers of badgers culled, as is currently the policy in Wales, the RSPCA is still wary of such an approach.

Any actions taken on individual farms for disease control purposes need to be part of a larger plan with a well-defined common strategy and goals, as has been demonstrated with schemes in place to address other diseases, for example Bovine Viral Diarrhea (BVD). Individual policies enacted on different farms may not achieve this. If any badger culling is adopted as part of a larger disease control policy, the RSPCA firmly believes that it must be regulated by relevant statutory authority.

- Members of the public felt that vets needed a better appreciation of all the options and that a communication barrier existed between some vets and their clients making discussion about bTB difficult. One suggestion included making bTB a compulsory Continuous Professional Development (CPD) topic for practising farm vets but this would be difficult to achieve and enforce. Firstly, developing an appropriate training programme would need regular updating and secondly, the Royal College of Veterinary Surgeons would need to identify which individuals are in farm practice (how much farm

animal contact would count as farm practice, would it be relevant only for those with cattle-keeping clients or all farm vets?), and somehow to ascertain if they have undertaken the CPD or not. However, this is closely aligned to the responses and our summary from Q13, i.e. that all farm vet practices should have at least one vet trained as a bTB Special Advisor who can disseminate knowledge to colleagues and offer detailed advice to clients.

The RSPCA welcomes the comments, especially from vets, that vets would appreciate more knowledge and training on the subject of bTB; this is an area we will investigate as one where we could make a contribution. We also note that comments on the need to speak as one voice are timely, given that the BVA has recently published a new bTB policy, and given the correspondence in the veterinary press mentioned earlier. In order to deliver an effective containment and eradication policy for bTB, there needs to be agreement as to which areas need prioritisation and how they should be tackled. The veterinary profession is critical in determining this.



Proposal 5: Improving the approach to and accuracy of testing

- RSPCA PROPOSAL:** a. Government to address the factors that affect the sensitivity of the SICCT while it continues to be the main test used for identifying infected animals.
- b. To move away from the SICCT as the main herd screening test to an alternative test with equal specificity but higher sensitivity, or move to using a combination of tests (parallel testing) to maximise both sensitivity and specificity, particularly in persistent and recurrent infected herds.

The UK currently uses the SICCT to screen herds for bTB infection. Two different types of tuberculin protein are injected (avian and bovine), one above the other and then 72 hours later the reactions (if present) are measured and compared. Reactors to this test are defined as bTB positive in accordance with APHA guidance using two levels of interpretation – Standard and Severe. Reactors must be removed from the herd (via slaughter). Those with intermediate reactions are defined as 'inconclusive' and must be retested in 60 days, and those with 'no reaction' are determined to be clear (they may have reactions to the injections but their differences in size are within the permitted limits, which vary depending on the interpretation of the test). The Gamma Interferon (IFN- γ) test uses the same principles to detect sensitised cells in the blood of cattle, but is laboratory based rather than using the cow as an indicator.

Different tests have different abilities to detect the organism. The SICCT has a high specificity but a low sensitivity (i.e. if the test is negative, there is a high chance the animal is actually infected and the test has 'missed' the presence of the organism – this could be as many as 50 infected animals testing negative out of every 100 infected animals tested). No test is perfect and some with lower specificity will cause healthy animals to be slaughtered, but will have a higher sensitivity so are less likely to leave infected animals in the herd.

Overall 74% of all respondents did not think the current testing regime was adequate, and this increased to 89% among the general public.

The sensitivity of the routine SICCT to detect infected animals can vary markedly with such external factors such as the tester, physiological status of the animal, season, and concurrent disease. Some diseases currently endemic in the UK cattle herd are known to interfere with the SICCT, for example BVD (de la Rua-Domenech et al. 2006). In some cases of endemic disease the effect on the SICCT is well established, however, for other diseases the research is lacking or, although it may make sense logically, e.g. due to the disease's effects on the immune system, a connection with bTB is not clearly established.

However, there are other tests available. These include tests that can detect bTB organism in the faeces (which would suggest an animal is shedding) and a test that can detect organisms hiding, or latent, in the blood (the 'Actiphage' test, which is currently unvalidated). Tests for the presence of antibodies against the bTB organism in cattle body fluids e.g. blood, saliva, etc. – such as Idexx, ELISA and Enferplex – are also available to complement the SICCT. Although none of these tests gives a perfect answer we believe 'parallel testing' (where several tests are used on one animal/in one herd) should have a much greater role.

Stakeholder responses:

- 15 Do you think the current testing regime, using a combination of different interpretations of the SICCT and Gamma Interferon, is adequate for eliminating bTB?**
- The majority of vets (71%) and farmers (64%) did not think the current testing regime was adequate. However the reasoning behind their views was different, with vets believing the test was inadequate at an individual level and was leaving infected animals in the herd, whereas

farmers believed it was responsible for false positives due to post-mortem results indicating no visible lesions (despite the literature, much of which was cited in the RSPCA's report, emphasising the high specificity of the test, i.e. the likelihood of the test resulting in false positives being low).

- 16 Do you agree with our proposal that the government should continue to further investigate the efficacy of the SICCT, including the variability in sensitivity, and consider enhanced testing systems, particularly in persistent and recurrently infected herds?**
- The majority of all respondents (80%) agreed that investigations into factors which may affect SICCT effectiveness should continue (72% of farmers, 84% of vets, 91% of the members of the public), with further investigations into the role enhanced testing could play in persistent and recurrently infected herds.
- 17 Do you think novel tests, which may not currently be validated or recognised by the authorities, should be made readily available for use alongside in parallel with the statutory testing programme (i.e. parallel testing)?**
- Reservations included a lack of clarity over what control farmers and their vets would have over the decisions available for the future of animals found to be positive to these tests, who would pay for the tests and so

63% of veterinary responses wanted further tests to be readily available in parallel with statutory testing. 50% of farmers indicated the same.

on. It was felt that promoting uptake of these tests shouldn't penalise the proactive farmers who do decide to allow their vet to use them.

- Some vets felt they needed more information about the different tests before they could confidently advise their clients on their use, despite feeling that the use of these tests, particularly in persistent and recurrently infected herds would be a useful measure.
- Some farmers felt that cattle were stressed enough with the current levels of testing and thus any further testing (or samples taken for further testing) should be done at the same time as others, or should be done in such a way as to avoid additional handling of cattle.
- 84% of the public wanted to see novel tests being used.

The RSPCA believes the responses given to this particular question should be noted by all involved in implementing the current policy to control bTB. Although we are aware of new tests in development, these are likely to take some time to be validated while it is clear that many don't trust the current





system. Unfortunately, it is disappointing that, based on the comments received, there is still a lack of understanding that the SICCT is a herd-based test and should not be used to determine the individual status of a particular animal. We therefore think this RSPCA proposal is still very important if the SICCT is going to remain as the primary method of testing both herds and individuals e.g. for pre- and post-movement testing.

The RSPCA would also like to take this opportunity to highlight the difficulty farmers and their vets would have in including further testing as part of their bTB management plan if it can only be undertaken when the farm is shut down with bTB and has to be suspended once they have tested clear (as is currently the case). It is therefore logical to review the necessity of suspending the use of further tests, and their restriction to being used on chronic or persistent breakdown farms only. We believe that farmers and their vets should be allowed to deploy such tests as part of a disease prevention programme, particularly in recurrently infected herds as well as persistently infected herds.

It is promising that there is a milk screening test in development that may allow dairy herds the opportunity to screen their animals' bTB status

through the usual milk recording process. This could be an effective way for herds currently clear of the disease to have their bTB status monitored without the need to disturb the cows. As an animal welfare organisation, we recognise the concerns raised by some respondents about additional testing resulting in additional handling. Any methods that can be deployed to reduce this should be investigated further.

The government's response to Godfray indicated that the government is assessing the cost-benefit analysis of using more sensitive testing in cattle herds under various circumstances, e.g. surveillance testing for OTF herds as well as the tests used for pre- and post-movement testing. We are reassured by this, and the roll out of six-monthly testing in the HRA, as we believe this acknowledges that the current testing requirements are not sensitive enough to achieve bTB control across the UK and need to be addressed. We also acknowledge that, in their latest consultations, the government is seeking views on how the testing regime can be improved.

Proposal 6: Ensuring evidence-based communication and advice

RSPCA PROPOSAL: That all stakeholders be aware of the importance of giving accurate advice and of correctly prioritising prevention and control measures with particular emphasis on managing environmental risks rather than wildlife.

- The Biosecurity Five Point Plan should have cattle measures first, rather than wildlife ones, since cattle-to-cattle transmission is the greatest cause of bTB incidence on farms.
- Government statements indicating badger culls are achieving results should be evidence-based and informed by properly analysed data and not be based on preliminary data, as this cannot confirm such correlations.

Biosecurity advice is available for farmers through the TB hub and the TBAS, which aim to support their efforts to prevent bTB breakdowns. The advice is predominantly aimed at preventing badgers and cattle mixing and is based on research conducted between 2005 and 2009. This assessed whether it is possible to reduce contact between badgers and cattle within farmyard buildings, and concluded that badgers were not able to access the building if the exclusion measures suggested were used, with a success rate of 100% (Judge et al. 2011).

It is unfortunate, especially given the clear evidence of the much greater risk of cattle-to-cattle transmission, that official advice on prevention of bTB appears to focus on badger controls, rather than the issues of biosecurity and biocontainment involving cattle-to-cattle transmission and environmental contamination from cattle shedding large numbers of bTB bacteria in dung and urine when at pasture (Phillips et al. 2003).

Announcements stating that the two pilot badger culls in Somerset and Gloucestershire have succeeded in reducing bTB in cattle are open to challenge². More recent data from APHA would indicate that the removal of badgers from the pilot cull zone in Gloucestershire has had no effect at all (APHA 2020). The conclusion of the report also clearly states “...these data alone cannot demonstrate whether the badger control policy is effective in reducing bTB in cattle”, yet upon making this preliminary data public, statements were made claiming these results did just that. Similar reports, such as the Brunton Report (Brunton et al. 2017)

² [gov.uk/government/news/new-data-shows-drop-in-bovine-tb-as-further-measures-to-fight-disease-unveiled](https://www.gov.uk/government/news/new-data-shows-drop-in-bovine-tb-as-further-measures-to-fight-disease-unveiled)

contained many caveats in the results section and concluded “...it would be unwise to use the findings of this analysis to develop generalisable inferences about the effectiveness of the policy at present”. The more recent paper (Downs et al. 2019) also contained a number of qualifying statements that tend to be ignored by those who use the paper to demonstrate that badger culling is a success.

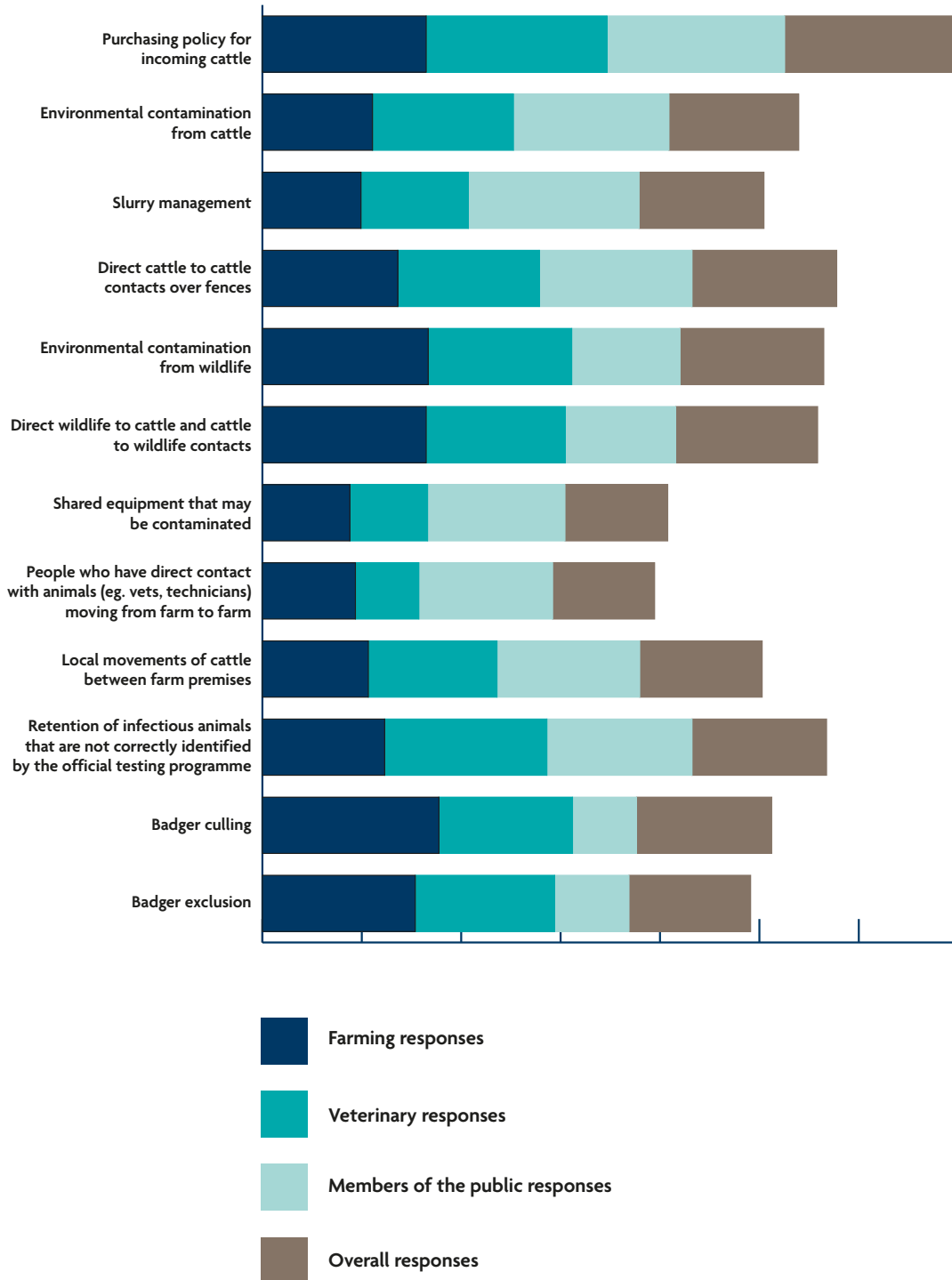
We are also concerned with regards to how the conclusions of the Godfray report have been reported. The Godfray Review, in our view, did not conclude that badger culling in itself was effective, but instead weighed up the pros and cons of both culling and alternatives, stating: “Whether culling in addition to current cattle controls can reverse the increasing trend in bTB in England is not known, but it does represent an important option to help in controlling the disease”. However, the review also said “...moving from lethal to non-lethal control of the disease in badgers is highly desirable” and described the benefits of culling as “...real but circumscribed”. In fact, the government’s recent announcement about its longer-term future plans to address bTB indicate that Godfray’s conclusions have been acknowledged as sound.

The evidence (APHA 2018) indicates that incidences in bTB have declined dramatically, but the starting point used for measuring this decline was three years prior to the culls starting, indicating that bTB was already declining before culling began.

Official guidance and advice for farmers and vets involved in the prevention and control of bTB should be based on fact and best practice. Effective controls should be prioritised and practical ways of implementing advice should be offered.

Stakeholder responses:

18 Please indicate your view on priorities for prevention and control advice by putting the following strategic advice in priority order, from 1 to 12, with 1 being highest priority.





19 Please indicate who you think is best qualified to provide prevention and control advice to farmers, in order of effectiveness from 1 to 6, with 1 the most effective:

- Local private vets ● APHA staff ● TBAS ● Specifically trained vet network (akin to the BCVA Accredited Johnes's Advisors) ● NFU Advisors ● Farm assurance schemes ● Other (please state).

	Veterinary responses	Farmers' responses	Public responses
1	Specifically trained vets	Local private vets	Specifically trained vets
2	TBAS	Specifically trained vets	TBAS
3	Local private vets	TBAS	Local private vets
4	APHA	APHA	APHA
5	NFU Advisors	NFU Advisors	Farm assurance schemes
6	Farm assurance schemes	Farm assurance schemes	NFU Advisors

Vets were top of the list for all response categories (overall, veterinary, farming and members of the public).

This is in line with comments received from farming communities in response to Q7, which indicated a lack of trust in external advisors. This helps to confirm that the RSPCA and others aiming to progress the bTB control work should consider contributing to bTB training programmes for vets as part of future work programmes. It also indicates that vets feel more training is needed for their profession before they can become bTB advisors – they rank specially trained vets and TBAS Advisors above a local vet in practice.

The RSPCA is aware of some vet practices training their employees through TBAS, which seems to have been received favourably by their farming clients based on the comments received through the consultation on this topic.

Proposal 7: Moving to badger vaccination

RSPCA PROPOSAL: To move from a badger culling policy aimed at controlling the possible spread of disease from wildlife to a badger vaccination policy, along with the other cattle-focused proposals included, e.g. improved efforts on biosecurity and biocontainment, better testing, etc.



Historically, the debate raged over the role of badgers in the spread and maintenance of bTB, despite several reports, much research and well over 20,000 badgers killed between 1975 and 1997. In 1997, it was proposed that a trial be conducted to try and answer this question once and for all (Krebs 1997). The Randomised Badger Culling Trial (RBCT) was the largest trial of its kind ever attempted with nearly 11,000 badgers killed. The RSPCA did not oppose the trial as it recognised that more evidence was needed. The results showed that proactive badger culling does have a small effect in reducing new incidents of bTB in cattle by about 16%, showing that badgers are implicated, but the conclusion of the authors of the final report was that “*badger culling can make no meaningful contribution to cattle TB control in Britain*” (Bourne 2007). This is corroborated by a paper suggesting that while 38% of cases of cattle bTB could be attributed to badgers in the areas studied, only 5.6% of cases were due to direct transmission, with the rest being due to onward cattle-to-cattle transmission (Christl A. Donnelly and Nouvellet 2013). Further corroboration comes from a review of data from Woodchester Park showing that the disease transmission is more frequent between cattle than badger-to-cattle (Crispell et al. 2019).

It was therefore disappointing and perplexing that the government announced in 2012 that farmers would be licensed to cull badgers. So far nearly 141,000 badgers have been culled, and while recent announcements appear to support the idea that the cull is working, even the authors of the report on which these announcements were based stated that “...*these data alone cannot demonstrate whether the badger control policy is effective in reducing bovine TB in cattle*” (APHA 2018). As outlined in Proposal 6 above, such discrepancy between the conclusions of advisory reports and associated public announcements from others can result in misperceptions and confusion and highlights the vital importance of such announcements being evidence based and holistic.

Badger vaccination is considered to be a viable alternative to culling by many, with many advantages such as cost, and the avoidance of badger perturbation which has the potential to make the disease situation worse in areas of culling (Jenkins et al. 2007).

Vaccination programmes, unlike culling, enable badger social groupings to remain relatively stable (C. A. Donnelly et al. 2007) (Woodroffe et al. 2006). Although it does not fully protect animals from getting the disease it does reduce the risk of them becoming infected and reduces excretion of the bacilli if they are. Cubs can also be conferred immunity.

...the conclusion of the authors of the final report was that “*badger culling can make no meaningful contribution to cattle TB control in Britain*” (Bourne 2007)

The cost of vaccination is frequently raised as a barrier to its use. However, a report by the Zoological Society of London shows that volunteer-led vaccination would be cheaper to implement per km² per year than the current cull policy (Woodroffe 2018) (£592 for vaccination as opposed to £2,247). One of the contributors to the cost is the need to trap animals, but the data from the culls show that some cull zones are killing more badgers by trapping/shooting rather than free shooting, implying that trapping is not proving to be an obstacle to the operations of some of the cull companies. Currently there are several funding schemes for vaccinating badgers, for example the government's Badger Edge Vaccination Scheme (BEVS), and also schemes led by charities such as county wildlife trusts.

20 Do you think that vaccination should be considered as a viable alternative to culling?

- Overall, responses indicated 36% in support of badger vaccination, with 16% 'maybe' in support. Members of the public were strongly in favour of this method of bTB control in wildlife with 80% in support of bTB vaccination and 6% responding as 'maybe'.
- Farming and veterinary respondents did not see badger vaccination as a viable alternative to culling (15% of farmers and 10% of vets responded 'yes' to question 20, 17% and 31% responded 'maybe' respectively).
 - Some of the reasons given for this, which are commonly cited, were addressed in the report. For example, the cost of cage trapping, the difficulty achieving sufficient coverage of badgers, the fact vaccination does not cure infected badgers, etc.
 - One concern repeatedly cited was a lack of evidence that badger vaccination has any effect on bTB in cattle and this seems to be a major factor affecting uptake. Vets report that they are uncomfortable promoting something they don't have any evidence will work, and farmers' comments suggest they are unwilling to invest in something that may not give results.
 - Some said that since badger culling was effective and necessary (stated as being due to high badger populations, the suffering of infected badgers and the need for a healthy badger population) they didn't see a need for an alternative method.

- Members of the public felt that badgers were not the main problem and more needed to be done in cattle populations before focusing on wildlife. They, along with many others from all response groups, stated a wish to see a cattle vaccination. It is therefore reassuring that two such vaccines are currently under development.

21 Do you think it would be acceptable and practical to offer badger vaccination within the current cull zones for those farmers who don't wish to cull, but want to engage in bTB control?

- 42% of overall responses were in favour of this, specifically 80% among members of the public, but only 22% among farmers and 32% among vets.
 - Some raised the obvious concerns of vaccinated badgers being subsequently culled, however we would of course expect that in cull areas neighbouring vaccination areas badgers would be cage trapped rather than free shot, allowing for the identification and release of vaccinated badgers.
 - Most reasons cited avoiding complicating the picture by using one method or another.
 - Several farmer responses were concerned that such areas of vaccination might result in revoking cull licences neighbouring those areas, and so were against the proposal for that reason.
 - Two comments of particular interest were put forward.
 - One (from a farmer) stated concerns that allowing such options side by side could increase community divisions. This is a plausible concern, particularly if the vaccinators are relying on the goodwill of neighbours (who are culling) to protect their investment in vaccinating badgers in their locality.
 - The other stated that vaccination could be a good method of reducing the guilt some producers feel in not participating in their local cull, thinking of themselves as a potential "infection source" due to not culling badgers. It is concerning if neighbours are made to feel this way, since, given what is known of a badger's roaming behaviour, it is likely the badgers will roam from one farm to another. Any badger could therefore move into cull areas, so being exposed to culling, in the same way as those whose setts are within cull zones.

22 If so, do you think there should be more support for farmers to work together to implement large-scale vaccination programmes?

- Given responses to the above question, it is unsurprising that farmer and veterinary respondents did not see value in large-scale vaccination programmes. In contrast, members of the public were 82% in favour of large-scale vaccination programmes.
- Specifically, only 44% of overall responses, 21% of farmers and 27% of vets would like to see support for large-scale vaccination programmes. This is unfortunate since such projects may be an opportunity to gather the necessary data – which so many cited as being lacking – to assess the effect of badger vaccination on bTB in cattle. We acknowledge such a trial would take time to produce results but we believe the findings in the Welsh Intensive Action Area (IAA) are promising and should be built upon.
- 14% of overall responses – 17% of farmers and 32% of vets – were non-committal, responding ‘maybe’, with the rest (41%, 60% and 39% of responses respectively for overall, farming and veterinary respondents) selecting ‘no’.



The RSPCA was disappointed to see the low support for badger vaccination, but is pleased that the government’s response to Godfray recognises badger vaccination as an important tool that needs to be developed and deployed. This is part of a programme of work to achieve Godfray’s assertion that a move away from lethal to non-lethal control is “highly desirable”. However, we are wary about how it will be deployed; the statements in the report indicate that it could be used alongside culling to allow some areas to attain 90% coverage of land area in a cull zone as required by the licence.

It was noted that various statements were made in responses that are frequently used elsewhere, but which often don’t stand up to scrutiny. For example, one comment indicated that now only the minority of badgers culled are cage trapped (quoted as being 15% down from about 40%).

However:

- Based on data up to 2019³, over 35% of badgers were cage trapped each year although this reduced to 29% in 2019. The highest percentage of badgers culled in a cull area using cage trapping was 66%.
- On average 35.73% of culled badgers have been cage trapped (suggesting that the 15% figure quoted in the respondent’s statement is incorrect) and thus these culled badgers could have been vaccinated.

Additional comments about suffering of infected badgers and the need for a healthy badger population do not exclude the need for vaccination; in fact, they could be used to support it. However, the general attitude from farmers and vets responding to the consultation indicates that support for vaccination from the two communities most involved in the management of TB on the frontline is lacking. The RSPCA is frustrated at this, largely because the reasons given for this are the lack of evidence to show that large-scale badger vaccination can have a role in reducing bTB in cattle. Such data could have been available now, if policy decisions taken in 2010 to stop six trial vaccination areas had been not been so short sighted. The controversy over the refusal to issue a licence to cull in Derbyshire in 2019 serves to emphasise the difficulties here, as the vaccination projects in this county could serve as a project to test if vaccination has a role to play in decreasing the disease in cattle. We are interested to see that the government has agreed that more research is required to investigate

Much of the resistance to vaccination is based on comparisons with culling, so the IAA results are interesting, especially when viewed in the light of data published by Defra in 2019 on bTB data in the cull zones. Compared with the IAA, the original central zone in Gloucestershire has shown a rise in bTB prevalence over the five years of culling of 30%, where the buffer zone has seen no change, in the original Somerset cull area the prevalence has dropped by 10% where the buffer zone has seen a 52% reduction.

this with the possibility of a programme of work in East Sussex, but we are wary of the suggestion that vaccination could work alongside culling to allow more areas of the HRA to be culled.

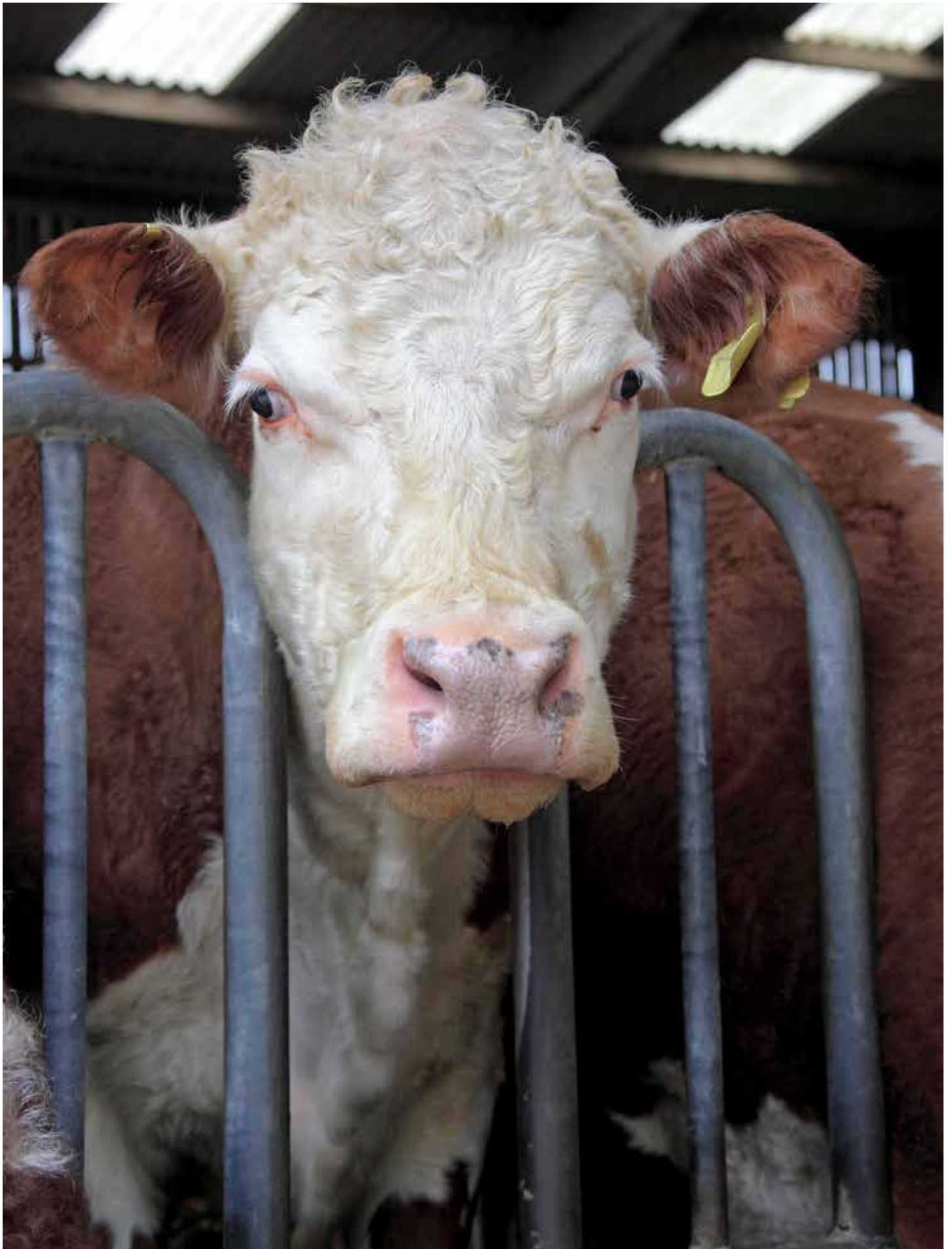
Data from the IAA in Wales indicates that large-scale vaccination of badgers could be effective in reducing the disease in that species (based on reduction in TB prevalence in road casualty badgers, but noting low sample size in later years). Assessing the data for the impact on cattle is difficult however, because, as with the badger cull in England, it is hard to tease out if one measure used in the area to control bTB (such as use of Gamma Interferon, six-monthly testing, badger vaccination) is more effective than another. However, the results from the IAA are positive with the overall incidence of disease decreasing from 27.1% in 2010 to 14.1% at the end of March 2019, a reduction of 48% (Welsh Government 2019) – this is compared to a 23% drop in the comparison area, so the IAA intervention caused relative reduction in prevalence of 52%. Between 2010 and 2016 (the year after badger vaccination stopped) the reduction in TB prevalence in cattle within the IAA was 64%, data indicating what it was in the comparison area was not available.

Comparing incidence reductions of bTB in cattle in cull zones vs the IAA also shows that TB incidence reduced in the IAA by 35% compared to a 23% reduction in the comparison area (2010–2016), this means there was a relative reduction in incidence of 34%⁴. This information wasn't available up to 2019. This is compared to relative incidence reductions between cull zones and their buffers of 37% in Somerset and 66% in Gloucestershire. It would be interesting to see to what extent the other factors in the two areas (cull zones vs the IAA) are the same, with regards to cattle controls.

The study published recently on the effectiveness of culling (Downs et al. 2019) was too late to be included in the RSPCA report, although it was published while the consultation was open, so it did influence a number of the comments we received. Although we understand the basis for the analysis, we would still treat the analysis with caution due to, as stated by the authors: “...the observational nature of the study [meaning] we cannot exclude entirely biases in our results due to for example, unknown or unmeasured confounding”. Although the authors recommend further review of the data from the culls in order to assess their efficacy at reducing bTB in cattle, such analysis will have to adapt, given that many of the comparison areas used are now part of cull areas so will no longer be available for future analysis. It would be interesting to see how the analysis conducted by Downs et al would look with the data from the Gloucestershire cull zone in 2019, showing an increase in new herd incidence.

3 Bovine TB: summary of badger control monitoring during 2019 – www.gov.uk/government/publications/bovine-tb-summary-of-badger-control-monitoring-during-2019

4 It should be noted, this figure is not directly comparable to Downs et al, due to the added analysis done to the data used in the Downs calculations. Incidence rate in Downs et al is adjusted for certain confounding factors and the relative incidence rates (incidence rate ratio) are calculated using this adjusted incidence rate.



Proposal 8: Suggestions and the need for further targeted research

RSPCA PROPOSAL:

- We propose that further research should be conducted to investigate and review:
- Survival of bTB in the environment grazed by cows, especially under cow pats
- Progress of the disease through a cattle herd
- Cattle movements and the relationship with bTB in Britain, for example, a repeat of the work done by (Gilbert et al. 2005), along with new badger survey data
- Risk factors at individual farm level – why do some farms never get TB despite being in HRA hot-spot areas?
- The role of endemic disease and how that has evolved.

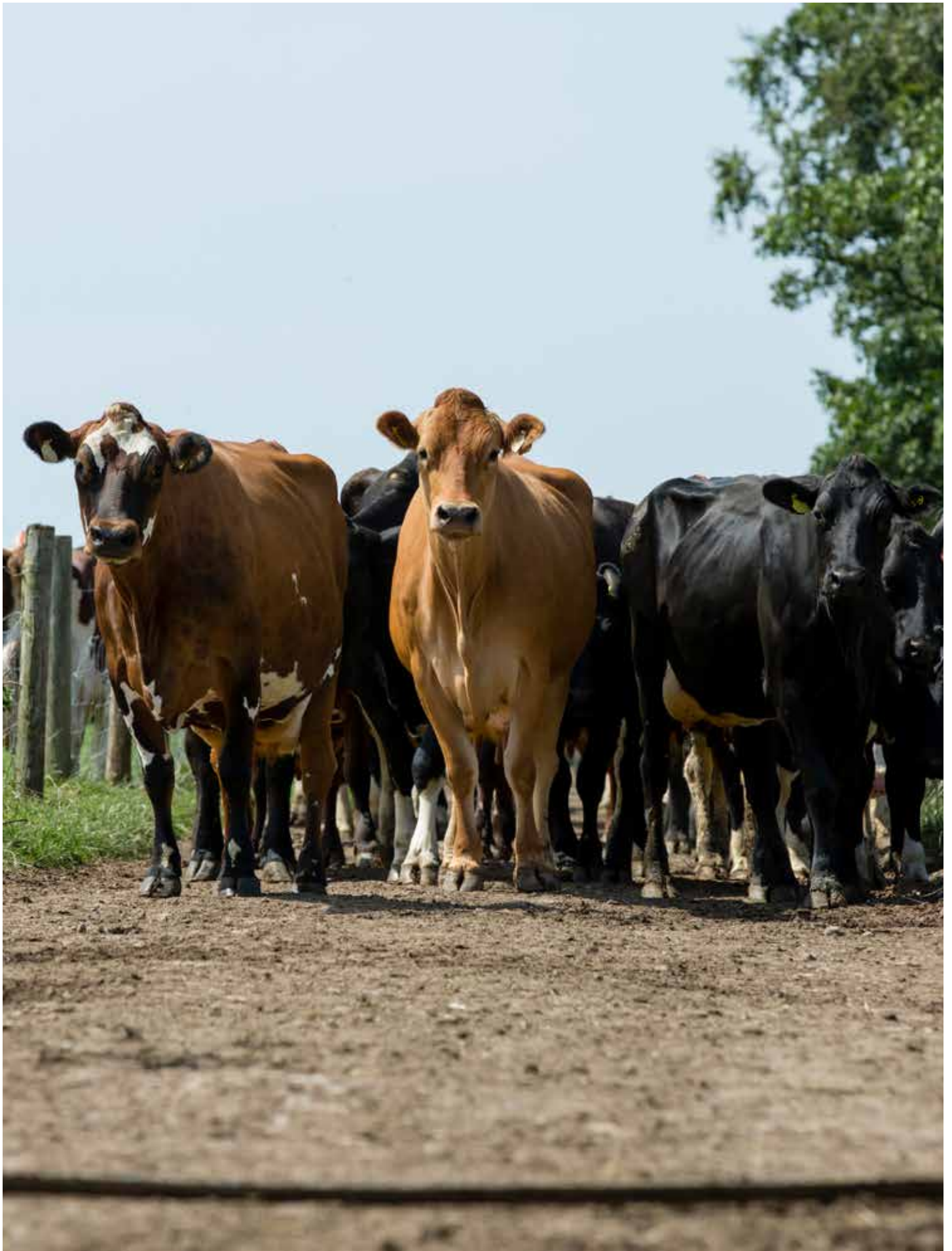
There are many questions remaining about bTB, especially since much of the scientific research since the 1970s (when it was first found in badgers) has focused on the badger's role in the disease. Although we think that more research would be useful to aid understanding the disease and improving the methods used to control it, we also believe we know enough now to take the revised approaches outlined in this document. Given the current situation, there is not time to go through the necessary processes for more research. We also believe that the majority of funds should be going into disease control while the incidence and prevalence of bTB in cattle are not in decline.

23 Do you agree with the suggested research topics we have listed above or do you have other suggestions for future research to help manage bTB?

- Overall responses were marginally in favour of the proposals, with 61% in agreement. Farmers were only 47% in favour, vets 68% and members of the public 78%.
- Across all categories, comments were made stating that plenty of research has been done, and now is a time for action.
- We received criticism for not including cattle vaccination in our list, but there are already two ongoing projects in this area and these appear to be progressing well.

The RSPCA proposed more research should be done as we firmly believe this is the case, although we understand the frustration of many who feel that there should be action now. The RSPCA does not disagree with this, but considers that the wrong action can be more damaging than doing nothing. Unfortunately, many years of working to try and determine the role of the badger in the disease has meant that other research, such as the potential for cow faeces to contaminate the environment rather than badger faeces – and other areas where important knowledge that should guide future cattle management – is lacking.

Judging from the responses received across all categories we believe the most pressing topic requiring research is whether bTB in cattle can be reduced by badger vaccination. Uptake of vaccine appears to be hampered by this research gap and if it is to be used as a culling 'exit strategy' – as Ireland are proposing for their bTB eradication programme – then there is a need to ensure that the farming community is in support by showing them that it can be effective at reducing bTB in cattle.



Updated RSPCA proposals

As stated at the beginning of this report, we set out to conduct a consultation on bTB in order to collect the views of those who are primarily involved with the management of bTB at the frontline. In the light of all the responses presented in this document, the RSPCA has reconsidered some of the proposals we presented in *Bovine TB: It's not all black and white* to facilitate the eradication of bTB. The amended proposals are set out below.

- 1 The RSPCA proposes that cull companies are expanded and restructured into bTB control cooperatives with responsibility for funding bTB control, such as allocating grants to those involved in the company for advice (financial and veterinary advice including potential use of further tests) and implementation of biosecurity and biocontainment measures on their farm. This would ensure communities are encouraging the uptake and implementation of advice so changes are achieved over a wide area.
- 2 The RSPCA proposes each cattle herd should have a bespoke herd health and welfare plan and this should include management of bTB. These plans should promote changes in farm management to improve biosecurity and biocontainment and to generate more resilient animals. The bTB management plan would be tailored to each farm, taking into account each farm's financial situation and bTB risk level. Help in drawing up a plan could be provided via the farm's veterinary practice who would have a trained Special TB Advisor.

In the light of responses indicating that advice via assurance schemes was largely unwanted, and that farmers wanted their vets to provide them with detailed advice, it seems logical for assurance schemes to leave it to farmer and vet to draw up suitable bTB control plans. Nevertheless, many felt it was necessary for assurance schemes to require these plans as part of their assurance, and the *RSPCA Welfare Standards for Beef Cattle* now reflect this. Members of the public also thought having a farm-specific bTB control plan should be a prerequisite of badger cull licences, expressing surprise that it wasn't already. We would, therefore, recommend that this be considered and potentially made a requirement of the cull licence application while badger culling continues to be part of the strategy used in England.

We propose that these plans should include:

- Measures to manage **biosecurity** effectively and robustly to prevent the disease entering a herd.
This should include specific plans to prevent disease entering from cattle through:
 - reviewing purchasing and local movements
 - identifying direct contacts/high risk animals
 - introducing post-movement testing in the Edge Area.
- Measures to achieve **biocontainment**. This can be done in a number of ways (Sibley 2018):
 - quarantining high risk and infected animals
 - managing colostrum
 - pasteurising or disposing of colostrum from high-risk cows
 - managing slurry and potentially infected pasture
 - establishing rest periods for pasture after infected/high risk animals have grazed
 - drilling slurry and wastewater directly onto arable land
 - granting producers money for investment into equipment such as injectors or thermophilic anaerobic digesters to 'treat' the slurry
 - managing feed and water troughs to prevent contamination
 - improving **hygiene** in the cattle housing, for example through the use of well-managed automatic scrapers.

- **Tailored advice** to farmers with large herds of the risks involved. This should include consideration of herd management systems tailored to each herd to reduce risks of infection, such as breaking up large herds into smaller groups, e.g having one herd of 300 separated into five smaller groups of 60. This would then better contain the disease outbreaks.
- The use of **enhanced testing**, both which tests and the actions to be taken upon receiving test results.
- Establishing **risk-based trading** and introducing measures to move towards membership of the CHeCS scheme.

- 3 Funding of the improvements in biosecurity and biocontainment, provision of financial and specialist veterinary advice and further testing should come from a variety of sources, some government and some industry (as is currently the case) – for example from the bTB control cooperatives, via milk premiums (where applicable) or assurance schemes.

We hope that grants for biosecurity measures will be available under the new Agriculture Act and to see the government channeling the money for bTB control into more such schemes. We believe bTB control cooperatives would help the roll out of measures more widely across local areas, rather than piecemeal depending on farms that apply and those that don't, and believe this sort of coordination would really help local areas tackle bTB together. We don't believe it's necessary to gather evidence for the 'no regrets' measures (i.e. effective barriers between neighbouring herds, pasteurising milk from cows prior to feeding it to calves, protecting food sources from wildlife access, and many others). These are inexpensive and are likely to protect the herd against several other diseases as well as bTB. However, for bigger, more onerous measures, badger vaccination being one, we would propose that funding is provided to work out what effect, if any, may be had on cattle bTB.

- 4 Private vets and government vets need to take a greater role in proactively managing the disease through discussions with clients, development of farm-specific herd health plans, knowledge exchange, undertaking specific and ongoing training/CPD (see below) and applying for licences so as to be able to offer clients the ability to carry out further testing.

Government needs to facilitate applications by private vets to carry out further testing (i.e. using other tests alongside the SICCT through developing clear guidelines published on the TB hub after reviewing and simplifying the process with input from private vets. We would also add that the government needs to consider the restrictions placed on these further tests when applied to herds currently under restriction which are chronic/persistently infected.

To aid private vets in the delivery of this proposal, each farm veterinary practice should have at least one member of staff who has completed a thorough bTB management course (a TB Special Advisor).

This course should:

- cover, in detail, the range of options for bTB control, with badger vaccination and enhanced testing being included
- have economic calculations to allow vets to give their clients costed options
- be objective and ensure consistent messaging across vets and vet practices
- be validated, with regular updates and tests for the participants
- contain information about various grants and schemes available to producers and how vets and their clients can apply for these.

APHA and local private vets also need to address the call from private vets made in this consultation for more information about their clients' bTB situation and the local area's status to enable more appropriate and proactive planning.

- 5 Government needs to address the factors that affect the sensitivity of the SICCT while it continues to be the main test used for identifying infected animals, particularly when used at an individual animal level in herds which have repeatedly suffered breakdowns e.g. pre-movement tests.

We propose that the government moves away from the SICCT as the main herd screening test to an alternative test with equal specificity but higher sensitivity, or move to using a combination of tests (parallel testing) to maximise both sensitivity and specificity, particularly in persistently and recurrently infected herds.

- 6 All stakeholders should be aware of the importance of giving accurate, evidence-based advice and of correctly prioritising prevention and control measures with particular emphasis on managing environmental risks rather than wildlife.

For example:

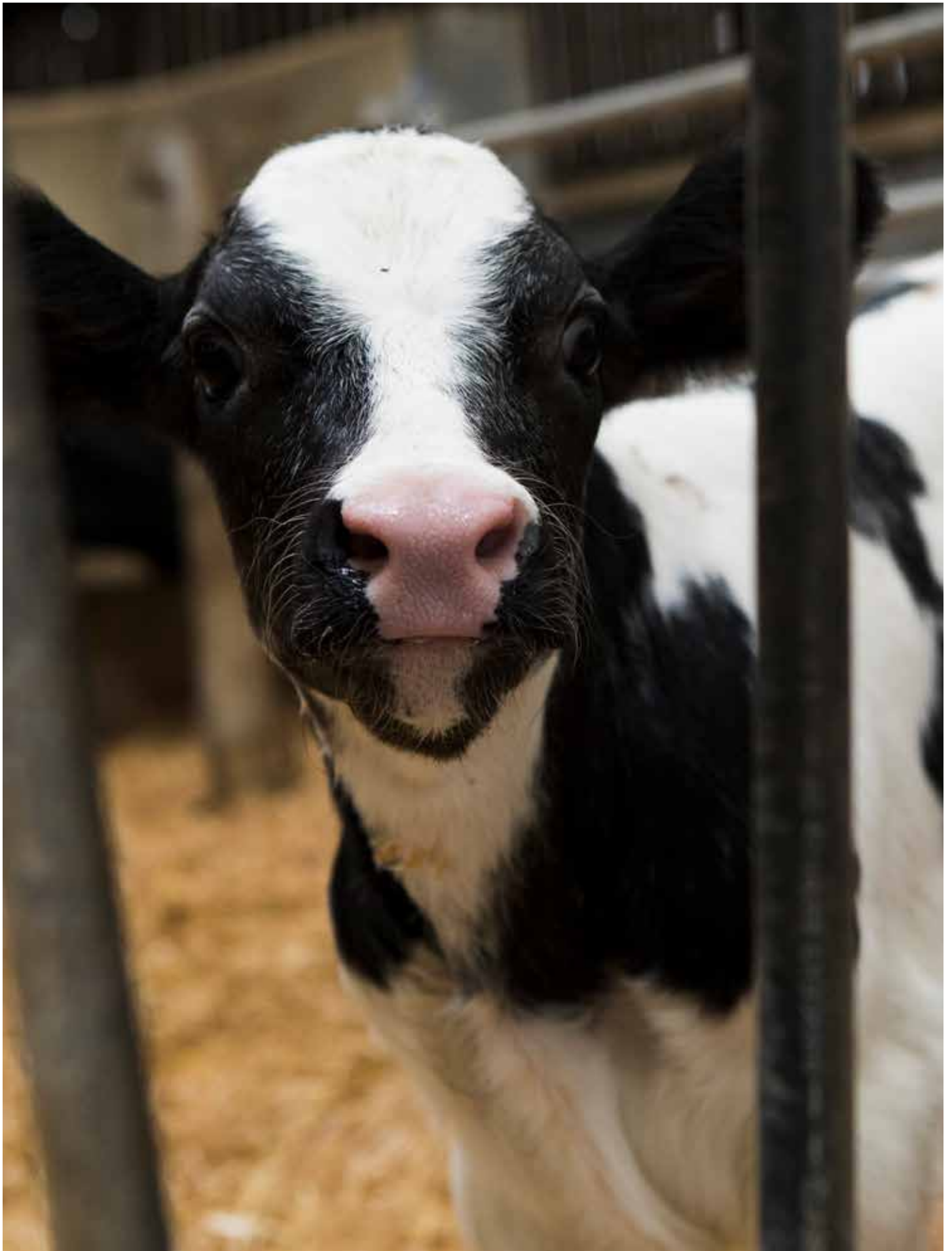
- the Biosecurity Five Point Plan should have cattle measures first, rather than wildlife ones, since cattle-to-cattle transmission is the greatest cause of bTB incidence on farm
- government statements should more clearly acknowledge the limitations of published data on the effect of the badger culls on bTB incidence in cattle and should seek to find equivalent data for non-lethal methods of control.

- 7 To move from a badger culling policy aimed at controlling the possible spread of disease from wildlife to a badger vaccination policy, along with furthering the other cattle-focused measures which are being taken, including, for example, improved efforts on biosecurity and biocontainment, different testing approaches, etc. We believe it is important that cattle controls are in place before wildlife reservoirs are tackled, in the light of further evidence that the majority of transmission is intra-species (between cattle and other cattle or between badgers and other badgers). Improved cattle controls will also prevent the possible infection of wildlife, as demonstrated by the situation in Cumbria, where badgers have been culled because they were infected from an undetected bovine that was imported from Northern Ireland.

- 8 We propose that further research should be conducted to investigate and review:

- a. how/whether badger vaccination affects bTB rates in cattle
- b. the role of slurry and cattle faeces management in recurrence in herds persistently and recurrently infected
- c. cattle vaccination (work on this is ongoing and should be continued and furthered) as well as:
 - survival of bTB in the environment grazed by cows, especially under cow pats (e.g. via earthworms (Barbier et al. 2016))
 - progress of the disease through a cattle herd
 - cattle movements and the relationship with bTB in Britain, for example, a repeat of the work done by (Gilbert et al. 2005), along with new badger survey data
 - risk factors at individual farm level – why do some farms never get TB despite being in HRA hot-spot areas?
 - the role of endemic disease and how that has evolved
 - the role stress has on disease transmission particularly at certain times of a cow's production cycle
 - factors affecting a cow's resilience to the disease.

We propose that more research does need doing, but concurrently with measures taking into account the information already available.



The government's response to the Godfray report

The RSPCA cautiously welcomes the government's response to the Godfray report and the subsequent proposals and we recognise that there is much in common with our own proposals outlined above. However we note that, although the government intends to phase out badger culling, there are still plans to expand the cull to cover 70% of the HRA by 2022. This could result in approximately 400,000 badgers being culled before the cull is completed.

- 1 Our proposal for cull companies to be restructured as TB control cooperatives is addressed under the government's proposals to develop new governance mechanisms for TB eradication. The government recognises the advantages of having bTB control mechanisms agreed and delivered at a local level, citing existing TB Eradication groups as examples of what these could look like. The RSPCA welcomes this approach as well as the new partnership approach outlined in the report and we look forward to seeing how these new government proposals develop.
- 2 The government does propose that persistently infected herds should develop HHPs for bTB. However, the RSPCA believes such plans should be developed by all cattle farmers and their vets in order to develop protocols to prevent the disease coming into the herd as well as managing those herds that have suffered a breakdown. The government also recognises that farm assurance schemes can play a role in this and the RSPCA recognises that it too has a role in this through RSPCA Assured.
- 3 The government's response on funding is based on the principle that those farmers who have implemented the 'no regrets' measures on biosecurity should be rewarded by differentiating the compensation paid. However, the RSPCA believes more could be done, by providing grants for those farmers whose buildings, for example, may need major work in order to improve ventilation in these buildings or to separate cattle and wildlife. The government does say though that such funding could be available through grants for 'public goods' potentially as part of the Agriculture Act.
- 4 The role of vets in the future management of bTB is an area which the RSPCA, government and veterinary industry all agree upon. Alongside increasing the testing interval and developing and making alternative tests, the government has committed to empowering private vets to do more to manage, eradicate and prevent the disease in their clients' cattle. The RSPCA supports this and is interested to see how this proposal will develop.
- 5 The RSPCA welcomes the government's proposals to improve current testing levels by introducing six-monthly testing in the HRA, its commitment to introducing additional tests as well as the development of a test that can Differentiate Infected from Vaccinated uninfected Animals (DIVA) tests to allow the vaccination of cattle.
- 6 The RSPCA's proposal to address the need for consistent messaging is not directly addressed in the government's response. However, we support the government's proposal for a new bTB partnership, along with the need for the farming industry to feel a sense of shared responsibility for bTB and for all stakeholders to work together and play their part in eradicating this disease.
- 7 The RSPCA recognises that badger culling is the most contentious part of the current bovine TB eradication policy. We recognise that the government has accepted Godfray's conclusion that it is desirable to move away from badger culling, but is disappointed that culling in its current form will continue for at least another two years and that culling will remain in the toolbox, to be deployed if determined by epidemiological evidence. The current situation in Cumbria should have been avoided through better cattle control measures and improving such measures should prevent spreading the disease to wildlife.
- 8 The government's response has provided further detail of its research into a DIVA test and cattle vaccination and its invitation to the scientific community for more research proposals. However, we also note that Defra has abandoned any further work on developing an oral vaccine for badgers.



Conclusion

The RSPCA believes badger culling will not have the hoped-for impact on bTB control in cattle. We ran this consultation because we believe that the focus on the badger cull has been detrimental to the policy as a whole, with much of the work done to improve cattle-based measures being sidelined.

We acknowledge much has been done to improve cattle testing and to limit cattle movements, but we still think the debate needs to be refocused on improved bTB control in cattle and control in wildlife using vaccination. We are convinced by the available evidence that there is a large, undetected reservoir of bTB in the cattle population which the SICCT is not robust enough to manage.

We also acknowledge that, as in Wales, greater control of the disease in cattle may cause a short-term effect of increasing numbers of cattle culled, and that farmers will need the necessary financial advice and support to continue a viable business during this time. The effects of any increased culling could be aided by more robust management and husbandry to speed the control and eradication of the disease. Ultimately though, the increase in numbers of cattle killed will, in the long run, mean that fewer cattle become infected and are culled as the benefits of becoming truly OTF become apparent.

We believe there is sufficient information and scope already to improve the biosecurity and biocontainment measures being taken by cattle producers. These need implementing as a matter of urgency through tailored bTB management plans for each farm, drawn up by the farmer in collaboration with their farm vet, who has been trained specifically through a designated programme. We also believe farmers should be effectively and appropriately incentivised to prevent and control bTB in their cattle.

We would like to work with producers and industry bodies in those areas in which we can be aligned to present a united front to all involved in the control of this disease, in order to ensure that effective changes are made so we start to see a true and sustained decline in bTB incidence. We were heartened to see many of the government's proposals in their response were aligned with those we have made, however, we acknowledge that for any new initiative to work, it has to have the support of the farmers who will ultimately implement it, and so we hope you will be willing to engage with us, beyond this consultation.

We thank all the participants for the time taken to fill out this consultation. If you would like to find out more about the RSPCA's approach to bTB or would like to be involved in any further work we do in this area please email: bovinetbteam@rspca.org.uk



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