

Consultation on guidance to Natural England on the implementation and enforcement of a badger control policy

August 2011

Natural England's response

Introduction

1. Bovine TB is a serious infectious disease of farmed cattle, causing economic hardship and emotional distress to significant parts of the farming community. The disease also has wider implications for society with tax-payers contributing about £90 million annually to tackling the disease and its consequences. Bringing bovine tuberculosis (bTB) in the nation's cattle herd under control is a Government priority, and Natural England fully supports the Government's long-term goal of eradicating the disease in cattle.
2. Although it is the disease in cattle that is the principal concern, badgers are a significant wildlife reservoir of bovine bTB and their role in transmitting TB to cattle cannot be ignored. In the absence, to date, of an effective cattle vaccine, all measures that are effective in minimising cross-infection between cattle and badgers must form part of any disease control strategy.
3. A long-term solution which involves an integrated and multi-faceted approach that tackles the disease in both cattle and badgers provides the best hope of effectively controlling the disease. The diligent application of existing cattle-based measures and adoption of additional measures expected to provide benefits for disease control (including those recently announced by the Governmentⁱ) will be key to success as between 25-70% of TB breakdowns are of non-badger originⁱⁱ. Cattle vaccination, though still some way off, will also be important in the long-term.
4. Controlling disease where there exists a significant wildlife reservoir presents particular logistical challenges. In the absence of a cattle vaccine it is, nevertheless important to explore options to reduce disease transmission from badgers to cattle. Although an oral vaccine for badgers – the ideal solution - remains elusive, an injectable vaccine is available and is currently subject to a deployment trial. While the vaccine has shortcomings and is not suited to widespread application it has the potential to play an important role in disease control (e.g. the costs and logistics compare well with cage trapping and shooting, and, unlike population control, it is unlikely to lead to perturbation of the badger population and potentially negative effects on TB in cattle). The Government's continued commitment to vaccine development and deployment is therefore welcomed.
5. Disease control strategies that involve measures to reduce populations of native wildlife need to balance the optimum approach for disease control against obligations to safeguard the conservation status of the species concerned. This can constrain the design of the disease control strategy. For example, Defra Chief Scientific Adviser, Prof Bob Watson, and a panel of expertsⁱⁱⁱ concluded that to have a significant impact on national disease incidence, culling would need to be conducted over a 'very large area'.

The Secretary of State has however, indicated that culling is only intended to provide local relief, not national disease control¹.

6. The benefits for disease control in cattle from reducing badger populations have been debated for many years. Disease control strategies based on culling badgers undertaken between the 1970s and 1990s proved ineffective at preventing a rising incidence of the disease in cattle. In 1998, the Randomised Badger Culling Trial (RBCT) was instigated to investigate the potential contribution of badger control. The trial, which reported its findings in 2007^{iv}, remains, along with data from ongoing monitoring of the culled areas^v ^{vi} ^{vii} ^{viii}, the best source of evidence of the effects of culling badgers on TB incidence in cattle that is directly applicable to the conditions present in England.

Applying the evidence of the Randomised Badger Culling Trial to a policy of badger control

7. A recent review of the evidence base by Defra Chief Scientific Adviser and a panel of leading expertsⁱⁱⁱ concluded that proactive culling can lead to an overall beneficial effect on disease incidence in cattle compared to uncultured areas.
8. It was the expert panel's view that the closer any badger control follows the conditions of the RBCT, the greater the certainty that benefits observed during the trial will be replicated. This does not rule out the possibility of improving on the strategy adopted during the proactive culls of the RBCT, but indicates that deviating from the tested approach increases the likelihood that results will differ, whether positively or negatively, in an unpredictable way. This advice, with which we concur, is highly relevant because the overall net benefit² for disease control of badger culling observed during the RBCT was modest and highly variable and any deviation could result in no measurable benefit or even make things worse.
9. Having evaluated the evidence, the expert panel accepted extrapolations based on the RBCT data. These show that if 70% of badgers are removed by culling for 5 years over an idealised 150km² area then after a further 4 years (during which there is no culling) you would expect to have recorded a relative reduction in confirmed new incidents of bTB of about 3-22%, with a central figure of 12.4% (assuming the incidence of bTB in cattle is similar in and outside the culled area) or about 8-24% with a central figure of 16% (assuming higher incidence inside the culled area than outside it). A full analysis of the key findings, with a breakdown of bTB incidence within and surrounding culled areas, is given in the report published by the expert panelⁱⁱⁱ.
10. The expert panel further concluded that if culling is not conducted in a 'coordinated, sustained and simultaneous manner' according to a set of minimum criteria³ based on

¹ Exert from the statement by the Secretary of State on 20 July "The Government will not attempt to eradicate the disease nationally by culling, and there would be no culling over the whole endemic area at the same time. However, controlled culling can make an important contribution in the worst affected areas."

² The *overall net benefit* takes account of the incidence of confirmed herd bTB breakdowns within both the area where culling takes place and also the 2km-wide strip of uncultured land surrounding the outer edge of each culled area.

³ These minimum criteria for culling are defined as: covering at least 70% of the land within the culled area (based on RBCT experience), a minimum area of 150km² (based on analysis and extrapolation of RBCT data), sustained for a minimum of four years (based on RBCT estimates), and conducted simultaneously as defined as within a six-week period each year (based on advice of the combined Defra Science Advisory Council and TB Science Advisory Body; <http://sac.defra.gov.uk/2011/02/17/meeting-17th-february-2011/>)

RBCT conditions and data then this could result in a smaller benefit or even a detrimental effect on cattle bTB incidence.

11. The draft Guidance, which is the subject of this consultation, sets out how a policy of badger control might be implemented. The design of the policy is based on the evidence provided by the RBCT and its aim is to achieve disease control benefits that are at least as good as those observed during the trial.
12. Based on the conclusions of the expert panel and our own assessment of the evidence, it is our view that the critical test of this guidance will be the extent to which it succeeds in replicating or, by applying the knowledge gained during the trial, improving on the conditions of the RBCT. Adopting this approach should maximise the chances of a successful outcome for disease control. While control could be carried out differently, there is no other scientific evidence applicable in Britain with which to evaluate the view that other culling regimes would be more effective (or less likely to cause increased incidence of the disease through perturbation of the badger population).

Comments on the Guidance

Explanatory note on Natural England's dual roles

13. Natural England has two roles relevant to the Guidance being consulted on:
 - a. Natural England is the UK conservation body responsible for advising government relating to conservation matters in and relevant to England^x, and
 - b. Natural England is authorised⁴ to issue licences on behalf of the Secretary of State under the following relevant wildlife statutes and does so in accordance with government policy:
 - Protection of Badgers Act 1992, section 10 (2)(a) *'for the purpose of preventing the spread of disease, to kill or take badgers, or to interfere with a badger sett, within an area specified in the licence by any means so specified'*
 - Wildlife and Countryside Act 1981 (as amended), section 16 (3)(g) *'for the purpose of preventing the spread of disease'* to use methods of killing or taking (such as cage traps and spot-lamps to illuminate targets at night) prohibited by section 11(2) of that Act.
14. By virtue of section 15(6) of the Natural Environment and Rural Communities Act 2006 Natural England must have regard to any guidance given by the Secretary of State under section 15(2) of that Act. Such guidance may apply in the generality of cases, but it is a basic principle of administrative law that a licensing authority must still consider each individual application for a licence on its merits and be open to the possibility of making an exception.
15. The advice given in this consultation response is made without prejudice to Natural England's licensing function (specified in paragraph 13b above).

⁴ Natural England is authorised to do so by what is known as "a Part 8 Agreement " made in accordance with section 78 of the Natural Environment and Rural Communities Act 2006; www.naturalengland.org.uk/Images/signedpart8agreement092006_tcm6-4392.pdf

16. Our comments on the Guidance are set out below. As far as possible we have arranged our comments so they correspond with the seven themed questions in the consultation document.

Criteria for licensing disease control

Question a)

Do you agree that the basic culling policy requirements set out in paragraphs 9a-9f and paragraph 10 of the draft Guidance form the basis for an ‘effective cull’?

17. This question is asking, in essence, whether we can be confident that the criteria and requirements stipulated by the Guidance are the right ones to ensure licences are issued only where there will be a high degree of confidence of delivering disease control benefits equivalent or better than observed in the RBCT.
18. Overall, we are broadly content that the criteria for selecting suitable badger control areas (in paragraph 9) and the technical requirements for conducting an effective cull (in paragraph 10) are consistent with the evidence from the RBCT and the minimum criteria recommended by the Chief Scientific Adviser’s expert panel (comments on the delivery model are given at question c, below). We do, however, have two observations.
19. Firstly, the approach set out in the Guidance differs significantly from the RBCT by permitting two methods of badger control: ‘controlled’ shooting and cage trapping (followed by shooting animals in the trap), which was the sole method used in the trial. There is limited evidence on the efficacy or feasibility of ‘controlled’ shooting to badger control^x as there is, and has been, no lawful control of badgers using this approach for several decades. The issue is significant as it is likely to be the farming industry’s preferred method of control on the grounds of logistics and cost (it is estimated to be about 10-fold cheaper). The policy aims to address this uncertainty through a combination of operator training, best practice guidelines, monitoring and a pilot, which will evaluate the effectiveness (and humaneness) of this method. As this issue is crucial, the planning, monitoring and evaluation of the pilot is critical.
20. Secondly, there is, we believe, scope to further refine the criteria for selecting control areas. In light of the statement by the Secretary of State (on 20th July 2011) that control will be focused on the “worst affected areas” we propose that areas should be further prioritised according to the incidence of TB in cattle and/or likelihood of badger involvement in disease transmission. At present, the entire Parish Test Interval 1 (PT1) designated area, which covers about 39,000 km² (roughly 30% of England) is eligible for badger control even though the severity of the disease and role of badgers in its transmission is likely to vary geographically.

Mitigating risks to non-participants

Question b)

Paragraph 9g of the draft Guidance requires applicants to take reasonable measures to mitigate the potential risk to non-participants. Do you agree that the mitigation methods proposed in the draft guidance to applicants at Annex H are appropriate and adequate?

21. This section of the Guidance is concerned with mitigating negative impacts from badger control operations on people living in the areas where culling is licensed. Because of the geographical scale, intensity and duration of badger control its effects will extend beyond the land of participating farmers. Those potentially affected will include both farmers with livestock susceptible to bTB (who are predicted to suffer an increased risk of bTB breakdowns following badger culling due to the so-called ‘perturbation effect’) and other interests (such as local residents and nature reserves as well as recreational users including visitors to the areas).

22. The Guidance requires applicants to take reasonable measures to minimise adverse impacts on people who are not participating in badger control operations, and this is a principle that we firmly support.
23. Annex H of the consultation was prepared by Natural England in its capacity as the licensing authority at the request of Defra and represents our advice on what is reasonable to require of applicants.
24. As well as seeking to protect the interests of non-participants, the measures relating to non-participants with vulnerable livestock (set out in paragraphs 3.2- 3.5 of Annex H) provide an opportunity to improve the overall net benefit for disease control by reducing the risk of perturbation-related increases in bTB incidence along the outside edge of the culled areas. On average, only about 12% of the boundaries of proactive culling areas in the RBCT were considered (relatively) impermeable to badger movement. Any improvement on this would be expected to yield a greater net benefit for disease control⁵.
25. We agree the costs and benefits of mitigation measures need to be taken into account in assessing 'reasonableness' of measures to protect non-participants (see last sentence of paragraph 9g). However, the Guidance should also acknowledge that where a non-participant is not expected to derive any benefit from badger control then protecting that person from detriment may be appropriate, not least from a human rights perspective, even if the cost they would otherwise suffer is predicted to be less than the cost to the applicant of employing protective measures.
26. The policy also needs to clarify the legal situation should a non-participant suffer due to badger control measures. Natural England, as the licensing authority, should not be legally liable for any detriment suffered by non-participants arising from the implementation of this policy on behalf of government.

Ensuring the farm-led delivery model works

Question c)

Are the requirements at paragraphs 9h and 9i of the draft Guidance for all participants to enter into a TB Management Agreement (under section 7 of the NERC Act) and deposit the total cost of the funds upfront proportionate and appropriate to ensure that culling will be delivered effectively?

27. To have the best chance that licensed badger culling will deliver disease control benefits equivalent or better than observed in the RBCT we need to have confidence in both the selection criteria and technical requirements (addressed at question a) and in the delivery mechanism.
28. The RBCT was coordinated and delivered by government, whereas the current policy proposes that culling is undertaken by farmer and landowner led groups. This is a significant departure from the conditions of the RBCT and introduces uncertainty about the outcome of badger control. The ability of farmers and landowners to work together to deliver an effective cull to the stringent criteria of this policy is unknown and there are no relevant comparisons. Furthermore, the updated cost benefit analysis of culling (Annex C of the Consultation) indicates that the monetised costs of culling for farmers in a cull area are expected to exceed monetised benefits. As noted by the Chief Scientific Adviser's expert panel, if badger control is not conducted in accordance with the criteria underpinning this policy then there may be reduced benefits or even a detrimental effect on bTB incidence in cattle.

⁵ Based on RBCT findings, it is likely that the confirmed incidence of bTB in cattle within the culled area would be reduced relative to uncultured areas by between 20-34%, with a central figure of 27.4%, if badger movement across the boundary between culled and uncultured areas was completely prevented along the entire outer perimeterⁱⁱⁱ.

29. The policy proposal includes a series of measures to ensure a farmer-led delivery approach is successful. These include:

- Wildlife licences (which permit the killing of badgers under legally enforceable terms and conditions; paragraph 29)
- Agreements between farmers and Natural England under section 7 of the Natural Environment and Rural Communities Act 2006 (paragraphs 9h and 30)
- Funds to cover the cost of culling for the full four year, including a contingency sum, to be deposited prior to commencement of culling (paragraph 9i)
- A default mechanism whereby government can step in and take over a control operation to ensure it is completed (paragraph 31)
- Training requirements for operators and best practice guidance.

30. These measures will be backed-up by monitoring and compliance checking. Collectively, the measures should, in principle, provide a framework to ensure effective delivery of control operations. However, they are also complicated and untested. Nothing comparable to this policy (in terms of disease control or management of a protected species' population) has previously been undertaken using wildlife licences and despite best efforts to design a robust framework there remains uncertainty as to how well this approach will work in practice.

31. On the specific questions posed in **question c**:

- a. The section 7 agreements will form a key component of the package of measures to ensure effective delivery of badger control licences and are, in our view, an essential requirement. While we understand the Government's desire to provide flexibility, such is the importance of ensuring access to land for culling in the event of default (wherein government may step in and take over) it should be a requirement that in addition to each participating land manager (who may in some cases be a tenant) signing the agreements, the free holder owners of at least 70% of the Control Area (the minimum area accessible for culling necessary for an effective cull) will enter into such an agreement as well.

Given the potential risks to policy outcomes and disease spread associated with a poorly conducted cull, and the untested nature of this delivery model, we feel that this requirement is both appropriate and proportionate.

- b. Natural England will only issue licences under this policy where it is satisfied that both sufficient funds have been deposited and a suitable funding mechanism is in place to ensure that control operations – once commenced – will be delivered effectively over the full term of the licence. The funds deposited by applicants need to reflect a realistic assessment of the costs of delivering a cull. A suitable legal mechanism will be required to ensure that the funds are accessible by all parties responsible for undertaking control operations, including the government in a default situation. The guidance currently lacks details on what will happen in the event of a default. As the licensing authority, Natural England will not undertake control activities itself.

Badger welfare

Question d)

Are the measures included at paragraph 11 of the draft Guidance, in addition to the proposed monitoring described at paragraphs 42-43 of the Consultation document, adequate and appropriate for ensuring that controlled shooting is carried out safely and humanely?

32. The Guidance includes a number of measures relating to badger welfare, including appropriate 'close seasons' for each control method.
33. The requirement for operators to demonstrate a level of competence (linked to training) and the provision of comprehensive best practice guidelines is reasonably expected to contribute to consistency and appropriate standards of conduct amongst operators. The Guidance also recognises the importance of ongoing monitoring and compliance checking throughout the duration of badger control; all of which we endorse.
34. Considering the two methods that will be permitted: The evidence base provided by the RBCT provides a high level of confidence in the suitability – in terms of animal welfare - of cage traps for controlling badgers (including shooting animals in traps). There is, however, no equivalent evidence base (or even anecdotal evidence from practical use) with which to assess the suitability of 'controlled' shooting, although it is a technique that is widely used in the control of other mammals in the UK (including foxes, deer and rabbits).
35. In the absence of badger-specific knowledge on 'controlled' shooting we therefore welcome the Government's commitment to assess humaneness of 'controlled' shooting during the pilot phase of implementation. It will be important that any lessons learnt from this evaluation are reflected in the Guidance and best practice guidelines before the policy is implemented more widely.

Badger conservation

Question e)

Do you consider that the measures at paragraph 12 of the draft Guidance and the proposed monitoring described above (at paragraph 41), are appropriate to address concerns about the impact on the badger population?

36. The badger is an abundant and widespread native species. The most recent evaluation of the badger population, in 2005^{xi}, cited an estimated population of 190,000 badgers in England, while long-term datasets indicate an upward trend in the population over the last 25 years^{xii}. Densities of badgers in England, especially in pastoral areas in the west of the country, are amongst the highest recorded in Europe and it is reasonable to conclude that the conservation status of the national badger population is currently favourable (although abundance in some areas, such as Norfolk, remains lower than expected based on habitat^{xiii}). Surveys in the 1980s and 1990s^{xiv xv} suggest that the West Midlands and South West regions of England, combined, hold about 45% of England's badger population.
37. The Guidance for this policy includes a series of measures intended to safeguard the badger population in areas where culling takes place (thereby also ensuring compliance with UK obligations under the Bern Convention^{xvi}). Safe-guarding measures incorporated within the Guidance include:
 - Limiting badger control to a six-week period each year
 - Close seasons during the badger breeding season
 - Setting an upper limit of 10 on the number of licences issued each year
 - Setting an upper limit on the percentage of the estimated badger population that may be killed each year in each control area
 - Giving scope to Natural England to impose additional area specific licence conditions where it judges such measures necessary to comply with the Standing Committee guidance on derogating (licensing)^{xvii} and Convention obligations (paragraph 12).

38. While these measures go a significant way to addressing conservation risks we believe that the following additional safeguards are also merited:

- Setting a limit on the size of individual Control Areas and on the total contiguous area that may be subject to concurrent culling.
- Setting an upper limit at a level which is lower than 10 on the number of licences that may be issued each year and/or, a lower maximum number of concurrently running licences (currently set at 40).

Additional safeguards are justified for several key reasons, outlined below.

39. While there are well-established methodologies for evaluating badger presence and abundance there are no up-to-date reliable figures for national or regional populations (the last major survey was in the 1990s). There is also no simple and cost effective method of accurately measuring badger population numbers at the spatial scale proposed under this policy, nor will it be possible to accurately measure changes in abundance following culling.

40. Because the evidence-base is imprecise, neither upper limits on badgers licensed to be culled (paragraph 12a) nor adjustments based on monitoring during control operations can guarantee badger survival locally. In the absence of precise population information the policy needs to be designed to minimise risks to the survival of populations and not place undue reliance on monitoring.

41. Secondly, the current draft Guidance includes no upper limit on the size of individual Control Areas. The proactive control areas in the RBCT each averaged 113 km² (less than the minimum of 150 km² under this policy). By contrast, the size of control areas being developed by the farming industry are reported to average 350 km² (see Annex C of Consultation), with one area reported to be about 1400 km²^{xviii} (which is larger than all ten proactive cull areas in the RBCT combined). Taken with the absence, also, of constraints on the total area that may be covered by neighbouring Control Areas, it would be possible under the current Guidance for badger control operations to take place over areas of several thousand square kilometres, even with an annual limit on the number of licences issued.

42. The proposed upper annual limit of 10 licences means that by year 4 of the policy up to 40 licensed culls could be taking place simultaneously. If control Areas average 350km² then this represents potentially 14,000 km² (or more than one-third of the total eligible area).

43. The survival of the badger nationally would not be jeopardised by culling even on such a widespread scale. In the west and south-west of England, where a high proportion of the badger population occurs and where culling would be focused, the consequences for populations, particularly locally is, however, more uncertain, especially if control takes place over large areas simultaneously.

44. The larger the area, the longer it will take populations to recover as the role of immigration in recovery will be reduced. Published studies of badger populations following culling have suggested that recovery to pre-culling levels can take from as little as 3 years (30% population reduction over 13.4km²)^{xix} to 9-10 years (≈100% reduction over 104km²)^{xx}. Given that the policy aim is to reduce badger populations by at least 70% over the whole of each control area (including inaccessible areas) and the greater size of control areas it is likely that the recovery of populations could take significantly longer than in either of these cases.

45. Finally, there is uncertainty regarding interpretation of legal obligations relating to the conservation of badgers. The guidance published by the Standing Committee of the Bern Convention which the Guidance requires Natural England to have regard to (paragraph 12) states that '*no derogation [licence] should be granted if it has a significant negative*

effect on a species' conservation status – whether on the specific population (or its prospects) or at biogeographical level.' The term 'population' is not defined but the guidance makes it clear that licensing authorities need to consider impacts at a range of geographical scales and these need to be ecologically meaningful. We cannot readily translate this guidance into a precise geographical scale that is applicable to badgers in England, but the risks of contravening the Convention are expected to increase with increased scale of control area.

46. *Discretion to apply additional conditions or limits:* To satisfy the requirement stipulated in paragraph 12 Natural England would exercise discretion to apply additional conditions or limits both in respect to individual applications and in respect to decisions affecting all applications. For example, there could be a situation in which a number of licences had already been issued in a region and new applications were then submitted. It would be necessary to consider the collective impact of existing and proposed licences, and in light of that analysis restrictions may be applied to the number or area of future licences.

Public safety

Question f)

Do you agree that the measures included at paragraphs 11a-c, 23 and 27-28 of the draft Guidance are sufficient to mitigate the risks to the safety and security of those carrying out a cull and to the general public?

47. The Guidance includes measures relating to the safety of the licensee and operators, and of the wider general public. Public safety is an important issue, particularly where firearms are concerned. Moreover, based on the experiences of the RBCT, there is a very real risk that in the case of this policy, a minority of people who oppose badger control may seek to prevent or disrupt control operations.
48. As the licensing authority, Natural England takes public safety very seriously and considers safety issues when assessing licence applications and in giving its advice on wildlife management. It is also normal practice to seek the advice of the Police if it is anticipated that there may be third party interference with a licensed activity.
49. Natural England does not, however, have responsibility for public safety (as is implied by the wording of paragraph 23). Responsibility for public and operator safety lies with the person(s) undertaking and overseeing the relevant activity (i.e. the licensee and the operators undertaking badger control). Natural England is not in a position to judge safety issues in each specific situation where a licence may be used so cannot ensure the safety of the public or operators. This is the accepted policy position for all other wildlife licensing undertaken on behalf of Defra.

Other comments

Question g)

Do you have any other comments on the draft Guidance to Natural England? Please refer to the specific paragraph number(s) in your response.

Monitoring and Pilot

50. Combating TB in cattle via the approach proposed is both novel and (because of the perturbation effect) not without risks of worsening the disease situation if it is not conducted properly. If the government adopts this policy then implementation should proceed cautiously in a phased manner, with regular checks and independent evaluation at each stage. This will require intensive, ongoing monitoring throughout control operations. The government's commitment to a comprehensive package of monitoring (set out in paragraphs 38-43 of the Consultation document) is fully supported by Natural England. Natural England's own role will be to monitor compliance with licence conditions. Because a poorly conducted cull could worsen disease incidence,

compliance monitoring will need to be extensive and ongoing. Natural England will also collate reports of licensed activities, an important information base that will be used a range of monitoring activities.

51. Natural England welcomes the Government's proposal to undertake a pilot before full implementation of the policy. A pilot will provide a crucial opportunity to monitor, evaluate and refine the policy at an early point in its implementation. In particular, it will allow the government to address evidence gaps and the uncertainty regarding aspects of the policy that deviate from the evidence base provided by the RBCT. We recognise that the pilot is primarily an assessment of the deployment of this policy and not an experimental trial of the underpinning science comparable to the RBCT. Nevertheless, it is vitally important that the pilot provides the maximum learning and evaluation opportunities. The design of the pilot and its evaluation must adequately address the key evidence gaps so we have confidence in the assumptions underpinning the policy and the intended outcomes are achievable.
52. The focus of the pilot (as set out in paragraph 24 of the consultation) is controlled shooting, and specifically its effectiveness and humaneness. Controlled shooting is not, however, the only issue about which there is uncertainty and we therefore recommend that the scope and duration of the pilot are sufficient to examine:
 - a. The success of farmer-led delivery model at delivering an effective cull (i.e. reducing the badger population using both methods by at least 70% across an entire 'typical-sized'⁶ Control Area in a coordinated and simultaneous manner), and
 - b. The impact of culling on badger populations (i.e. the proposal is to use two control methods, not one, and allow control over much larger spatial areas than in the RBCT).
53. The pilot stage also has the benefit of ensuring the scale of control operations in the initial phase of implementation does not exceed the capacity of government to readily step in and complete culls if, for any reason, this becomes necessary.

Culled vs unculted area comparisons

54. The consultation states (paragraph 40) that the impacts of badger control on TB breakdowns will be monitored in comparison with 'similar unculted areas', implying an experimental approach. This is welcomed, but the proposal needs further clarification. It is vital that there is sufficient statistical power to reveal differences between culled and unculted areas. It also requires suitable comparison areas from within the 'eligible area' (i.e. within PT1) remaining unculted for the duration of the policy. To do this means, presumably, excluding some potentially eligible areas from licensing.

Resource implications

55. Implementing the badger control policy will have significant resource (as well as other) implications for Natural England. Defra have provided a cost-benefit analysis of the control policy (Annex C of the consultation), but this does not provide a detailed breakdown of the costs for Natural England. It is vital that we carry out the licensing responsibilities as efficiently and effectively as possible. We have agreed estimated costs only for the licensing aspects of this work with Defra, based on a set of agreed assumptions, and these are currently being finalised to take account of the final criteria published in the consultation documents. Whilst these estimates need to be as robust as possible for the next four years; Natural England will put in place a suitable financial accounting system in anticipation of an agreement with Defra for full cost recovery. This is a very complex licensing system with risks which may impact on estimated staff

⁶ Information in Annex C of the consultation suggests that the typical size of a Control Area will be 350 km².

resourcing and other cost estimates, hence the need for an agreement to be reached with Defra to meet any and all additional costs.

Conclusions

56. Tackling bovine TB in cattle is an important priority for the government and farming industry. Badgers play an important role in the transmission of this disease and we recognise that it will take an integrated and multi-faceted approach to disease control to succeed in reducing bTB prevalence. To this end Natural England will continue to work closely with Defra, the farming community and other interested parties to identify and implement effective solutions aimed at reducing, and ultimately eradicating, this disease.
57. Evidence from the RBCT demonstrates that reducing badger populations by the approach adopted in the proactive cull areas can deliver a reduction in disease incidence in cattle. While it is reasonable to assume that this success can be replicated in a future cull modelled on the RBCT (which is the approach adopted under this policy) we have a low level of confidence that the predicted benefits can be delivered consistently. This stems from the lack of evidence that a farmer-led cull can replicate what has only previously been undertaken by government (and even then on a smaller scale) and the complexity of the regulatory regime required to ensure successful outcomes.
58. If the decision is taken to adopt this policy then we make the following recommendations:
- a. Firstly, that due consideration is given to revising the Guidance in light of the advice provided above, and
 - b. Secondly, that the policy is implemented with caution and with appropriate checks, which should continue beyond the pilot stage, and it should also be subject to regular, independent monitoring. Not all uncertainties can be resolved by the pilot (for example, the impact on the badger population may only become evident if and when the policy is implemented on a wide scale and after several years) and neither will it evaluate benefits for TB in cattle.

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