



**Cyfoeth
Naturiol**
Cymru
**Natural
Resources**
Wales

Ein cyf/Our ref:
Eich cyf/Your ref: WG29767

Maes y Ffynnon
Penrhosgarnedd
Bangor LL57 2DW

Ebost/Email:
Ffôn/Phone:

TB Team
Office of the Chief Veterinary Officer
Welsh Government
Cathays Park
Cardiff
CF10 3NQ

9th January 2017

Annwyl Syr/Fadam
Dear Sir/Madam

Consultation on A Refreshed TB Eradication Programme

Thank you for giving Natural Resources Wales the opportunity to comment on the Welsh Government's Refreshed TB Eradication Programme.

The statutory purpose of Natural Resources Wales (NRW) is set out under the Environment (Wales) Act 2016. In the exercise of its functions under the Environment (Wales) Act 2016, NRW must pursue sustainable management of natural resources in relation to all of its work in Wales, and apply the principles of sustainable management of natural resources in so far as that is consistent with the proper exercise of its functions. NRW's duty (in common with the other public bodies covered by the Well-Being of Future Generation (Wales) Act 2015) is to carry out sustainable development as defined. NRW are also advisors to the Welsh Government on the natural heritage and resources of Wales and its coastal waters.

Natural Resources Wales is an evidence based organisation. We seek to ensure that our strategy, decisions, operations and advice to Government and others are underpinned by sound and quality-assured evidence. We recognise that it is critically important to have a good understanding of our changing environment. In this case our understanding of the complex and large-scale issues associated with bTB and the potential role of wildlife has benefitted from the findings of a significant amount of publically funded research¹ which we utilise in our response.

Our comments on the consultation are focussed on those measures which overlap with our remit, in particular in the context of our biodiversity and ecosystems duty, our role as advisor to the Welsh Government on matters relating to the environment and its natural resources, as a regulator and as a manager of the Welsh Government Woodland Estate.

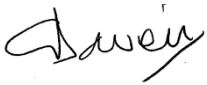
¹ Godfray, HCJ et al (2013). A restatement of the natural science evidence base relevant to the control of bovine tuberculosis in Great Britain. *Proceedings of the Royal Society, Series B* 280: 20131634.

In preparing our response to the consultation, we have drawn not only on the published consultation document, but also on the comments made by the Cabinet Secretary for Environment and Rural Affairs during her Statement on the 18th October.

NRW welcomes the refreshed TB Eradication Programme and the considerable efforts being made by the Welsh Government to manage bovine TB. If the Welsh Government decide to pursue the proposals relating to wildlife, we would welcome the opportunity to discuss this in more detail with OCVO officials as the programme develops.

Our response to the consultation questions are given in an annex to this letter.

Yn gywir / Yours sincerely

A handwritten signature in black ink, appearing to read 'Ceri Davies', written in a cursive style.

Ceri Davies
Executive Director for Evidence, Policy and Permitting

Annex 1: Response to the consultation questions

Natural Resources Wales' (NRW) response to the consultation document focusses primarily on those measures relating to the control of bTB in wildlife rather than the control measures relating to cattle.

Q1. *Do you agree with any of the proposals set out in this document? (please say what proposals you agree with and why you agree with them)*

NRW supports the regionalised approach using three broad bTB incidence categories to implement measures tailored to those regions following the principles of infectious disease control. It is apparent from epidemiological analysis and research that the causes of herd breakdowns are complex and influenced by local circumstances and farming practices. Developing a suite of control measures on a regional basis will allow more effective management of bTB based on the needs of individual areas.

We recognise the role that wildlife, particularly badgers, may play in the transmission of bovine TB to cattle as identified by the Randomised Badger Culling Trial (RBCT)². However, whilst the RBCT found that culling badgers may reduce the incidence of bTB in cattle locally, it also showed a significant increase in herd breakdowns in adjacent areas³. Concomitant with that was an increase in bTB prevalence in remaining badgers and it was hypothesised that the perturbation effect resulting from the breakdown of badger territorial structure was responsible for the observed increase in cattle herd breakdowns.

NRW therefore welcomes the Cabinet Secretary's commitment in her plenary address on the 18th October that there will be no widespread badger cull along the lines of that taking place in England. In our view badger vaccination represents the best long term solution for protecting badgers from bTB and we supported the badger vaccination project in the Intensive Action Area. However, we understand that the current lack of availability of the BCG vaccine has led to this work being suspended. We also recognise that until a bait delivered vaccine is available, there are practical problems with rolling out the use of the vaccine across large geographical areas due to the need to individually trap and vaccinate each badger.

NRW recognises that in some circumstances there will be a need to reduce the risk of infection from badgers in certain herds and we support the WG's intention in High TB Areas to '*explore and develop ways to break the transmission cycle between cattle and badgers where it can be demonstrated badgers are contributing to the problem in chronic herd breakdowns*'. We also support the proposal to monitor the level of infection in Low TB Areas and to encourage badger vaccination in Intermediate TB Areas. We have some observations on how the measures in each of the TB Incidence Areas might be implemented, as noted in our response to Q3 below.

Q2. *Do you disagree with any of the proposals set out in this document? (please say what proposals you disagree with and why you disagree with them)*

There are no specific proposals that we disagree with.

² Donnelly CA, Nouvellet P (2013) The contribution of badgers to confirmed tuberculosis in cattle in high-incidence areas in England. *PLOS Currents Outbreaks*. 2013 Oct 10. Edition 1. doi: [10.1371/currents.outbreaks.097a904d3f3619db2fe78d24bc776098](https://doi.org/10.1371/currents.outbreaks.097a904d3f3619db2fe78d24bc776098).

³ Jenkins H.E., Woodroffe R., Donnelly C.A. 2010 The duration of the effects of repeated widespread badger culling on cattle tuberculosis following the cessation of culling. *PLoS ONE* 10, e9090. (doi:10.1371/journal.pone.0009090).

Q3. Do you have any suggestions about how the controls proposed in this document could be improved or how they could best work in practice?

With regards to the WG proposals for reducing the risk of infection from wildlife we have the following comments to make on how these could be implemented:

Low TB Area

As noted in the consultation document, data from the All Wales Badger Found Dead Survey indicates that there is no significant wildlife reservoir in this area and it is therefore unlikely that badgers are involved in the transmission of bTB to cattle. We agree that there should be continued surveillance of infection levels in local populations. However, the RBCT demonstrated that transmission of bTB also takes place from cattle to badgers⁴ and therefore biosecurity measures may need to be implemented to prevent infection of the local badger populations from cattle during any prolonged herd breakdowns. Consideration should also be given to the use of badger vaccination in areas where bTB has been detected in the local badger population to prevent infection spread (we note that there is currently one bTB positive badger carcass in the low TB area). Analysis of badger and cattle spoligotypes would help determine the possible source of the infection.

Intermediate TB Area

These areas are characterised by low badger bTB infection rates and we agree that vaccination could be used strategically to prevent infection spread in local populations. Surveillance of bTB infection rates in badger populations will continue to be important so that infection risk can be detected and managed at the earliest opportunity. As with the Low TB Area, it will also be important to implement biosecurity measures to prevent establishment of new infection in wildlife from cattle particularly in areas with higher badger densities.

High TB Area

As already noted, NRW agrees with the proposal to explore how to break the transmission cycle between cattle and badgers in herds with chronic infection and where all other sources of infection have been ruled out. Whilst not specified in the consultation document, in her Plenary address the Cabinet Secretary referred to the possibility of cage trapping badgers and removing infected animals. The selective removal of infected badgers would appear to be a pragmatic solution, but it must be recognised that this is an unproven technique with no guarantee of success.

There are a number of areas which we regard require serious consideration prior to implementing the proposed approach to provide reassurance that herd breakdown levels are not exacerbated:

- The trap side test used to identify bTB infection in badgers has low specificity, detecting only about 55% of diseased animals. It is therefore likely that infected badgers would be released and so could continue to spread the disease within the badger social group and potentially to cattle. We understand that the test is better at detecting badgers with advanced disease, the animals most likely to be shedding bacteria, and hence the animals creating the greatest risk to cattle have a higher likelihood of being removed. However, the test inaccuracy means that this approach will be unlikely to clear infection from the social group.
- Badgers live in social groups with clearly defined territories. These territories are unlikely to align with farm holdings and more than one social group may be present

⁴ Woodroffe R et al. (2009) Culling and cattle controls influence tuberculosis risk for badgers. *Proceedings of the National Academy of Sciences* **103**, 14713-14717. (doi:10.1073/pnas.0606251103).

on any given farm. A comprehensive survey of badger distribution in the local area will be needed to identify the relevant social group/s. Trapping may also have to take place on land adjacent to the affected farm.

- The Randomised Badger Culling Trial (RBCT) included a reactive cull where badgers were removed from farms with a TB breakdown. This element of the trial was stopped early after evidence that herd breakdown rates had increased. This was believed to be due to perturbation in the badger social group structure causing increased ranging behaviour and a higher transmission rate to cattle in adjacent farms⁵. If only infected animals are removed, a proportion of the badgers in the social group will remain and so there is a lower likelihood of a breakdown in social structure. However, it is possible that the removal of key individuals (eg dominant males) could still lead to social group disruption. This risk will be greater if the farm overlaps more than one badger territory and hence there is a need to remove badgers from two or more social groups.
- A clear exit strategy for the programme would need to be prepared to identify the end point for the trapping. Given the inability of the trap side test to detect all infected badgers it is likely that disease will continue to be present in the local badger population. Vaccination is not currently an option and so it is not possible to protect uninfected badgers in the social group or to prevent reinfection from badgers in adjacent social groups. If there is a farm in the Intensive Action Area that meets the criteria, consideration should be given to applying the selective control in that area first as a proportion of the badger population there will already have immunity from the vaccination programme.
- A robust monitoring programme should be implemented to enable proper evaluation of the selective control programme and to ensure that any adverse effects both within the affected farm and on adjacent properties are detected at the earliest opportunity.
- A clear set of criteria should be agreed to identify where selective culling is applied to ensure that all other sources of infection have been ruled out. It will also be important to remove any expectation that there will be a wider rollout of the approach across Wales.

Other environmental considerations

If it is decided to proceed with the trapping and removal of infected badgers, consideration will also need to be given to the impact on other environmental issues.

The Habitats Directive requires that any plan or project likely to have a significant effect on a European site (Special Area of Conservation or Special Protected Area) should be subject to appropriate assessment, even if the activity takes place outside the boundary of any European site. A plan or project will not normally be enacted or adopted unless it can be shown that it would not have a likely significant effect on or an adverse effect on the integrity of a European site. A previous WG Administration proposal to cull badgers within the Intensive Action Area was subject to a full Ecological Impact Assessment and Habitats Regulations Assessment (HRA). Whilst it is NRW's view that the removal of bTB infected badgers would be so local in impact that it should not have a likely significant effect on a European site, we recommend that WG formally document whether or not the proposals should be subject to HRA.

It is possible that trapping operations may need to take place on Sites of Special Scientific Interest (SSSIs). Where this is necessary it is likely that SSSI assent will need to be issued

⁵ Bielby J, Vial F, Woodroffe R, Donnelly CA (2016) Localised badger culling increases risk of herd breakdown on nearby, not focal, land. PLoS ONE 11(10): e0164618. doi:10.1371/journal.pone.0164618

by NRW along the lines of the assent issued for trapping in relation to vaccination in the Intensive Action Area.

NRW is responsible for the management of large areas of land, including the Welsh Government Woodland Estate and National Nature Reserves. Depending on the location of badger setts, it may be necessary to undertake trapping operations on land other than that owned by the affected farm. This could include NRW managed land and we would welcome the opportunity to discuss with WG any access requirements at the earliest opportunity.

Badgers are a protected species under both the Badgers Act (1992) and the Wildlife and Countryside Act (1981). Licences to trap badgers under the Wildlife and Countryside Act are issued by NRW and we would welcome the opportunity to discuss the licensing process with WG.

Q4. Are there any other controls you think we should consider to help meet the aims set out in this document?

No.

Q5. We have asked a number of questions relating to specific proposals. If you have any other comments on other aspects of the TB Eradication Programme, please set them out below.

We are aware that the bacterium persists for longer periods in slurry. This will need to be taken into account in designing appropriate farm management in future. In this context we would like to mention that NRW and Welsh Government are promoting an innovation project with local firms and Sir Gar College to develop equipment that can split animal slurry into a dry inert cake and a partially treated fluid effluent. The technique is aimed at dealing with the large quantities of slurry that are increasingly being stored for long periods on farms; resulting in heightened risk of pollution, and high disposal costs. It is already recognised that the treatment approach now being trialled kills all bacteria and pathogens from within the slurry, as well as preventing future germination of any seeds also contained within the effluent. As a consequence it is highly likely that any bovine TB transmission via slurry will also be prevented. We are considering testing this hypothesis as part of the testing programme.