Benefits of badger culling not long lasting for reducing cattle TB, says study

Badger culling is unlikely to be a cost-effective way of helping control cattle TB in Britain, according to research published in PLoS ONE - *News Release*

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Badger culling is unlikely to be a cost-effective way of helping control cattle TB in Britain, according to research published today in PLoS ONE. The authors of the study, from the MRC Centre for Outbreak Analysis and Modelling at Imperial College London and the Zoological Society of London, say their findings suggest that the benefits of repeated widespread badger culling, in terms of reducing the incidence of cattle TB, disappear within four years after the culling has ended.

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Bovine tuberculosis (bTB) is a disease in cattle that has a serious financial impact on farmers in Britain, as infected animals have to be slaughtered. In 2008, 2,738 herds were infected with bTB, costing the government over £100 million. Wild badgers can become infected with bTB and are known to transmit the infection to cattle. Because of this, UK governments have tested various means of badger culling to control bTB infection in cattle over the past 30 years.

The Secretary of State for Environment decided against badger culling to control cattle TB in England in 2008. However, the Welsh Assembly Government now proposes to implement a badger cull using methods very similar to those used in the culling trial, though it faces a legal challenge to this proposal.

The researchers behind the new study analysed data from the Randomised Badger Culling Trial (RBCT), a large-scale field trial that was undertaken in 1998 by Defra to assess the effectiveness of badger culling. The results showed that although the incidence of cattle bTB reduced during culling and in the first years after the final cull, these reductions subsequently declined. The benefits were undetectable within four years after the final cull.

Professor Christl Donnelly, senior author of the study from the MRC Centre for Outbreak Analysis and Modelling at Imperial College London, said: "Bovine TB is a big problem in Britain and the disease can profoundly affect farmers' livelihoods. We know that bTB is transmitted between cattle and badgers, so the Randomised Badger Culling Trial was set up to find out if culling badgers would help control the spread of the disease. There has been some controversy over badger culling as a bTB control method and it has been unpopular with the general public.

"Although badger culling reduced cattle bTB during the trial and immediately thereafter, our new study shows that the beneficial effects are not sustained, disappearing four years post-cull. Our new research also suggests that the savings that farmers and the government would make by reducing bTB infections in cattle are two or three times less than the cost of repeated badger culls as undertaken in the trial, so this is not a cost-effective contribution to preventing bTB infections in cattle," added Professor Donnelly.

In the RBCT, ten areas of 100 square kilometres were

subjected to badger culling, and compared to ten similar areas with no culling. Culls were repeated annually and ended in October 2005. Previous analyses have shown that during the cull, bTB incidence in cattle within the cull zones decreased, whereas disease incidence in cattle outside cull zones increased, offsetting the benefit.

bTB is a disease in cattle that has a serious financial impact on farmers in Britain.

Today's study shows that after the culling finished, the number of infected herds inside cull areas was on average 37.6% lower than the number of infected herds in non-cull areas. The results also show that this benefit diminished over time after the culling ended, by 14.3% every six months. By months 43-48 after the final cull, there was no remaining beneficial effect. The research also shows that since the culling finished, the number of infected herds in two kilometre zones outside cull areas was comparable to the number of infected herds in areas outside non-cull areas.

The researchers also analysed the financial costs and benefits of badger culling. Over the seven and a half years during which five annual culls would have detectable benefits on the incidence of cattle bTB, culling in an area of 150 square kilometres would be expected to prevent the infection of 22.6 herds of cattle. The average cost of an infected herd has been estimated to be £27,000, meaning badger culling would save £610,200. However, the cost of a badger cull over a 150 square kilometre area would be between £1.35 million and £2.14 million, using cage trapping, snaring or gassing.

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Notes to Editors:

1. "The Duration of the Effects of Repeated Widespread Badger Culling on Cattle TB following the Cessation of Culling" PLoS ONE, Wednesday 10 February 2010. Corresponding author: Professor Christl Donnelly, Imperial College London (For a full list of authors, please see paper) Download a proof of the paper using this link:
https://fileexchange.imperial.ac.uk/files/5d415f07632/Badger%20culling%20Plos%20One.pdf

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Website: www.imperial.ac.uk

3. About the Zoological Society of London

Founded in 1826, the Zoological Society of London (ZSL) is an international scientific, conservation and educational charity: our key role is the conservation of animals and their habitats. The Society runs ZSL Lo ndon Zoo and ZSL Whipsnade Zoo, carries out scientific research at the Institute of Zoology and is actively involved in field conservation overseas. For further information please visit www.zsl.org.

4. About the Medical Research Council

The Medical Research Council funded Centre for Outbreak Analysis and Modelling was founded in March 2007 with Professor Neil Ferguson as Director. Its mission is to be an international resource and centre of

excellence for research on the epidemiological analysis and modelling of novel infectious disease outbreaks. The centre is part of a world-leading research group in the Department of Infectious Disease Epidemiology at Imperial College whose primary remit is to undertake applied collaborative work with national and international agencies in support of policy planning and response operations against emerging infectious disease threats.

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