



Department  
for Environment  
Food & Rural Affairs

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# **Summary of badger control monitoring during 2015**

**December 2015**



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## Background

On 28 August 2015, Defra announced that as part of its measured approach to tackling bovine TB and achieving disease control benefits, Natural England had licensed and authorised local farmers and landowners to carry out targeted badger culls in Gloucestershire, Somerset and Dorset in 2015.

Culling took place from 31 August to 12 October in Somerset and Dorset and from 2 September to 14 October in Gloucestershire. The data gathered during the culls in 2015 underwent a robust quality assurance process. This document sets out the outcomes of those culls from the monitoring conducted.

## Effectiveness of the cull

### Number of badgers removed

Estimates of the numbers of badgers to be removed from each cull area were made for the purpose of giving advice to Natural England (NE) for the setting of minimum and maximum numbers. The estimates, and methodologies and rationale used, were published in August 2015:

<https://www.gov.uk/government/publications/advice-to-natural-england-on-setting-minimum-and-maximum-numbers-of-badgers-to-be-culled-in-2015>

The number of badgers removed in 2015 against the minimum and maximum number is set out in the table below for each area.<sup>1</sup>

	West Somerset	West Gloucestershire	Dorset
Minimum number	55	265	615
Maximum number	524	679	835
Badgers culled – total	279	432	756
<i>Of which:</i> culled by controlled shooting	148	279	316
culled by cage trapping	131	153	440

<sup>1</sup> Four badger carcasses, presumed killed in road traffic accidents, were also removed by the cull companies. These were not submitted as culled badgers and are not included in these figures.

## **Summary of effort analysis**

In 2015 all three areas achieved the minimum number and did not exceed the maximum, with the number of badgers culled falling in the middle of the range for each area. The number of hours of contractor effort and number of traps set were recorded on a daily basis in all accessible land parcels. This provided NE with regular spatial and resource information on culling activity, which enabled the monitoring team to follow closely the progress that each cull company was making towards the minimum and maximum numbers, and assess whether resources were being effectively deployed. NE will also use this information to inform its requirements for future culls. The total effort exerted in each cull area is shown in annexes A1, A2 and A3. The detailed data are not being released because they are operationally sensitive for future culls.

## **Humaneness of controlled shooting**

Shooting accuracy was used as a proxy measure for 'humaneness' and was monitored using two approaches:

- the primary approach of observations by NE staff of badgers being shot at by controlled shooting; and
- post-mortem examination (PME) of a small number of badgers culled by controlled shooting in Dorset.

In 2015 PME data was supplementary to the field monitoring. PMEs were carried out by exception and by a small random sample to confirm that shot placement was in accordance with the recommended target area in the Best Practice Guidance for Controlled Shooting by recording severe damage in the recommended target area, which is likely to cause rapid death. Because of the difference in PME protocols, the approach used in 2015 is not directly comparable to the PMEs in 2013 but is similar to that in 2014.

## **Summary of controlled shooting observations**

NE has summarised its observations of controlled shooting in Annex B with more detail in Annex C. Of 63 badgers observed by NE staff being shot at using controlled shooting, six appeared to be missed and so were not retrieved. This is an identical result (6/63) to last year's. Details of the NE observations of these six badgers can be found in Annex B, Table 7. In such cases there is some element of uncertainty as to whether these badgers were hit or missed: see the NE report at Annex B.

The Independent Expert Panel (IEP) was concerned that a non-retrieved badger might have been hit, and thus was at risk of experiencing marked pain. This non-retrieval rate of

9.5% (6/63, 95% confidence interval 4.1%-18.6%<sup>2</sup>) is identical to 2014's and a slight improvement on the 2013 non-retrieval rate of 11.4% (10/88, 95% C.I. 6.0%-19.2%), although this improvement is not statistically significant.

This level of accuracy compares favourably with a recently published study of controlled shooting of rabbits in Australia<sup>3</sup> which is the only other study which uses this method of assessing the accuracy of controlled shooting. In that study, 21% of rabbits shot at were not retrieved of which 10% were considered misses and 11% were considered to have been hit.

Of the 63 observed badgers, 53 were in Dorset, seven in West Gloucestershire and three in West Somerset. The six observed badgers which appeared to be missed were all in Dorset. This difference between areas is not statistically significant.

One badger was reported by a cull company to have been hit and escaped wounded: see the NE report in Annex E.

### **Summary of post-mortem data**

The same post-mortem protocol was used as in 2014, except that any pathology unrelated to firearm injury was not recorded. The results can be found in Annex D.

Following almost 400 PME's of badgers shot by controlled shooting in 2013 and 2014, the number of PME's in 2015 was reduced, with PME's being carried out on a small random sample. In total 28 badgers, all from Dorset, underwent PME: 22 carcasses that were observed being shot, and six that were not observed. The PME showed that 21 of the 22 badgers that were observed, and all six of the unobserved badgers, had major thoracic damage.

In the case of the single badger that did not have major thoracic damage at PME, field observations showed that it died rapidly.

## **Safety of the cull operations**

The culls in both areas were carried out to a high standard of public safety. All contractors continued to receive training prior to the cull commencing in 2015, on the requirements of the Best Practice Guidance, lessons learned and safety training.

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<sup>2</sup> Estimates of confidence intervals for proportions were produced using a "Modified Jeffries interval" (Brown and others, 2001).

<sup>3</sup> Hampton et al., "A simple quantitative method for assessing animal welfare outcomes in terrestrial wildlife shooting: the European rabbit as a case study" *Animal Welfare* 2015, 24: 307-317

In relation to the use of firearms in all three cull areas, no significant incidents affecting public safety were reported. Contractors continued to show high levels of discipline and adherence to the Best Practice Guidance.

## Conclusions

The results from the 2015 culls indicate that all three areas have delivered the level of badger removal required to be confident of disease control benefits and that the culls were carried out to a high standard of public safety.

The levels of controlled shooting accuracy achieved in this year's cull were the same as those in 2014 and comparable to those in 2013. The likelihood of suffering in badgers is comparable with the range of outcomes reported when other culling activities currently accepted by society have been assessed. Licensed farmers and landowners will need to continue to ensure that their contractors receive rigorous training to maintain high standards of effectiveness, humaneness and safety.

## Annexes

Annex	Title
A1 A2 A3	Efficacy summary reports for the three areas
B	NE compliance monitoring summary
C	NE monitors' observations of shot badgers that underwent post-mortem examination
D	Post-mortem examination data spreadsheet
E	Self-reported shooting events – 'wounded and lost'



