

Summary of badger control monitoring during 2014

December 2014

Contents

Background.....	1
Effectiveness of the cull	1
Humaneness of controlled shooting.....	2
Independent audit	4
Safety of the cull operations.....	4
Conclusions	4

Background

On 9th September, the Secretary of State confirmed that the second year of the four-year badger culls in Somerset and Gloucestershire was underway.

This document sets out the outcomes of those culls from the monitoring conducted. A summary of the monitoring to be carried out during the culls was published on 26th August and is available here:

<https://www.gov.uk/government/publications/monitoring-the-humaneness-and-effectiveness-of-badger-culling-in-2014>

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 purposes 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 2014:

<https://www.gov.uk/government/publications/advice-to-natural-england-on-setting-minimum-and-maximum-numbers-to-be-culled-in-year-2>

The number of badgers removed in 2014 against the minimum and maximum number is set out in the table below for each area.

	West Somerset	West Gloucestershire
Minimum number	316	615
Maximum number	785	1091
Badgers culled – total	341	274
<i>Of which</i> -culled by controlled shooting	147	166
-culled by cage trapping	194	108

Summary of effort analysis

In the second year of the cull, enhanced requirements for data on levels of effort were implemented. The numbers of hours of contractor effort and numbers of traps set were recorded on a daily basis in all accessible land parcels. This provided NE with regular spatial information on activity, which enabled the monitoring team to closely follow the progress that each cull company was making towards the minimum and maximum numbers, and assess whether sufficient resource was being effectively deployed. NE will also use this information to inform their requirements for future culls. The total effort exerted in each cull area is shown in annexes A1 and A2. The detailed data are not being released because it is operationally sensitive for future culls.

In some cases, the level of effort deployed and the removal of badgers may have been affected by the presence of anti-cull activists where culling took place. Contractors gave public safety priority and stopped or paused activities until it was safe to continue operations. It was noted that the level of interference by anti-cull activists was higher in West Gloucestershire than in West Somerset.

Humaneness of controlled shooting

Humaneness was monitored using two approaches,

- Observations by NE staff of badgers being shot at by controlled shooting; and
- Post-mortem examination of badgers culled by controlled shooting.

As with last year, the post-mortem data was supplementary to the field monitoring. We focused the post-mortems in 2014 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 post mortem (PM) protocols, the approach used in 2014 is not directly comparable to the PM examinations last year.

This year, the outcomes of PM examinations were provided to NE so that feedback could be given to the cull companies and individual contractors followed-up. It also allowed observations of shooting to be correlated with PM reports.

Summary of controlled shooting observations

NE has summarised its observations of controlled shooting in Annex B with more detail in Annexes C1 and C2. Of 63 badgers observed by NE staff being shot at using controlled shooting, 6 were not retrieved. Details of the NE observations of these six badgers can be found in Annex B Table 6. From the descriptions in that table, all six shots appear to be misses. In such cases there is some element of uncertainty as to whether these badgers were hit or missed, but following the IEP's approach that assumed a non-retrieved badger might have been hit, we have assumed these animals were at risk of experiencing marked

pain, using the same assumptions as those used in 2013. This non-retrieval rate of 9.5% (6/63, 95% confidence interval 4.1%-18.6%¹) is a slight improvement on last year's non-retrieval rate of 11.4% (10/88, 95% CI 6.0%-19.2%) although this improvement is not statistically significant.

The vast majority of hit badgers are reported to have "dropped to the shot" after being hit. None of the observed badgers took an excessively long time to die (greater than 5 minutes) as, had they done, those cases would have been noted by NE. This compares to the one badger of the 69 monitored in 2013 whose time to death was recorded as greater than five minutes.

Summary of post-mortem data

The post-mortem protocol can be found in Annex D with the results spreadsheet in Annex E, and a description of the differences between this year's protocol and last year's in Annex F.

Of the 313 badgers shot by controlled shooting in the two cull areas in 2014, post-mortem examinations were carried out on 234 badgers. This compares with 158 post-mortems of the 1049 badgers culled by controlled shooting in 2013.

Of the 234 post-mortem examinations, one was uninterpretable due to post-mortem degradation of the carcass. Of the remaining 233 there was major thoracic damage in 195 badgers (83.7%). Of the other 38 badgers, 6 had major damage in the head and neck area only and the remaining animals had a range of pathology recorded.

This cannot be directly compared with the post-mortem results from 2013 as the protocol was different although in 2013 135/158 (85.4%) were assessed as having a thoracic "acute" lesion profile.

There was a difference in the proportion of shot badgers having major thoracic damage between the two areas with 78.7% of West Gloucestershire badgers having major thoracic damage compared with 89.2% of West Somerset badgers. This difference is statistically significant (chi squared test $p=0.03$). There was no equivalent analysis carried out in 2013.

All carcasses from observed shots were examined by post-mortem. Of the four observed badgers that did not have major thoracic damage at post-mortem examination or where the post-mortem was uninterpretable, field observations showed all died rapidly.

¹ Estimates of confidence intervals for proportions were produced using a "Modified Jeffries interval" (Brown and others 2001).

Independent audit

The independent audit was carried out by the same organisation as last year. After auditing the monitoring and data collection processes, the Auditor made a number of recommendations for how these processes could be enhanced. Her overall conclusion was that she was *“satisfied that the study has been run according to the SOPs [Standard Operating Procedures] and other available documents that were in place and that the data recorded is complete and accurate.”*

The audit report can be found at Annex G. We welcome the recommendations and will consider how we can address them in monitoring any future culls.

Safety of the cull operations

The culls in both areas were carried out to a high standard of public safety. All contractors were retrained prior to the cull commencing in Year 2, both on the requirements of the Best Practice Guidance and in avoiding conflict with protestors.

In relation to the use of firearms in both cull areas, no significant incidents affecting public safety were reported.

Conclusions

The results from the 2014 monitoring suggests that the levels of accuracy achieved in this year's cull, were slightly, but not significantly improved compared to 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. We noted a small difference between accuracy in West Somerset and West Gloucestershire. This might reflect the difficult circumstances that contractors were working under in Gloucestershire with widespread interference by anti-cull activists. The outcome of this year's cull in Somerset indicates that industry-led culling can, in the right circumstances, deliver the level of effectiveness required to be confident of achieving disease control benefits and that the culls in both areas were carried out to a high standard of public safety. There is a need for continued training of contractors, to ensure high standards of effectiveness, humaneness and safety.

Annexes

Annex	Title
A1 A2	Efficacy summary reports for the two areas.
B	NE report of humaneness monitoring observations
C1 C2	NE humaneness monitoring data spreadsheets
D	The Post-mortem protocol
E	The Post-mortem data spreadsheet
F	Overview of Post-mortem protocol differences
G	The audit report



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