

West Gloucestershire Pilot Cull Area (WG): Selecting the minimum target number

Population	Presumed number of badgers	Change since Autumn 2012	Change since Summer 2013
2012 - Autumn	3400	-	-
2013 - Summer (pre-cull estimate)	2350	-31%	-
2013 - Autumn (estimated number remaining at end of 6 week cull)	1642	-52%	-30%

Report of Cull at end of 6 weeks

Performance against revised (Oct 2013) licence target	Number of badgers	Percentage of Minimum target
<ul style="list-style-type: none"> Minimum cull target (70% of central estimate of Summer 2013 population) 	1645	
<ul style="list-style-type: none"> Number of badgers killed in 6-week period 	708	43%
<ul style="list-style-type: none"> Number of badgers that still need to be killed to achieve 70% reduction 	937	57%

Application for extension

The Company has requested an extension of 8 weeks. Taking into account an expected 4 day cessation of culling around Bonfire Night the number of days available to cull is estimated at:

The 70% cull target set in the Defra Badger Control policy is derived from the mean estimated cull achieved in initial proactive culls in the Randomised Badger Culling Trial. However, the estimated cull for individual areas ranged from 32 – 77%¹. Overall, the proactive areas gave a net benefit in terms of disease control but it is likely that a tipping point, within this range, must be reached to be confident that the increased disease risk, from perturbation, is outweighed by the

	Predicted end date
52 days	18 December 2013

¹ Smith, G.C., Cheeseman, C.L., 2007. Efficacy of trapping during the initial proactive culls in the randomised badger culling trial. Veterinary Record 160, 723-726.

benefits. The CVO has advised that where a cull has fallen short of the 70% target “*the benefit of reducing the disease risk to cattle from that badger population by extending the period of culling to reduce the badger population is likely to outweigh the perturbation impact of leaving a high badger population*”². As the cull in WG has reached a level where perturbation is likely to have been triggered, the overall aim of disease control is best served by continuing to cull to a level where there can be reasonable degree of confidence that this tipping point has been passed. As this tipping point is unknown, the greatest confidence of a net benefit will be achieved by continuing to cull for as long as practicable in order to move as far toward the 70% target as possible.

For this reason we recommend that the duration of the extended licence is set at the 8 week period that the Licensee has requested and which we are satisfied they have the resources and capability to undertake.

Projections for extended cull

To inform the decision on extending the cull in West Gloucestershire, the CVO has advised that “*The period of culling should be extended this year if there is a **reasonable expectation** that this will deliver a **significant further reduction** of the badger population ...*” (emphasis added).

	<i>Number of badgers per day</i>	<i>Total over 8 weeks (52 days)</i>	<i>Reduction in population (since summer 2013)</i>
To achieve the overall 70% reduction in the badger population in the available time requires an average daily removal rate of:	18	937	70%
Using the average daily kill rate for the 6 week cull we can estimate	17	859	67%

² CVO Advice on Gloucester Culling Pilot, 4 October 2013.

how many badgers may be removed in an extended cull if this rate is sustained:

The Licensee has made a series of operational improvements in preparation for extending the cull which Defra is satisfied will allow the average level of culling observed in the 6 week cull to be maintained or potentially exceeded.

Although we are satisfied that the improvements will enable a significant additional number of badgers to be culled seasonal factors (affecting badger behaviour and culling activities) and a diminishing population of badgers that are available to cull will make it increasingly difficult to maintain cull removal rates. In the Somerset Pilot Cull Area, for comparison, similar improvements early in the 6 week cull maintained removal rates but only temporarily and they had declined by week 6, and still further in the extended cull.

While there is a high degree of uncertainty associated with predicting removal rates, we believe that the most likely outcome is that the average removal rate over an 8 week extension will be lower than the average during the earlier cull period. In our judgement, considering all available evidence, we expect removal rates will be closer to the average daily rate during the last week of the first period of cull than to the average for the whole period, and they may even be lower.

• Average daily rate for last week of the cull (Week 6)	10	542	53%
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For comparison's sake, to achieve an overall reduction of 58%, which in his advice on the Somerset Pilot the CVO considered was sufficient to result in a net disease control benefit, would require the removal of:

	13	655	58%
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It is our judgement that removing a minimum of at least an additional 540 badgers will deliver a significant further reduction (ref CVO advice dated 04/10/2013) of the badger population (improving the level of

reduction achieved by culling from 30% to 53%). A reduction of 53% is, for example, well within the 32-77% range reported for the RBCT proactive cull areas¹. If the population is not reduced by at least 70% then additional culling may be required in the second year of culling.

Proposed Minimum number for Supplementary licence

A supplementary licence permitting an extended period of culling that has a Minimum Target number based on a number of badgers that we consider is realistic for the Licensee to remove in 52 days, and which will represent (in our view) a significant further reduction in the population, is considered to be:

540 badgers

*Reduction in population
(since summer 2013)*

53%

In setting this number (which is less than that required to achieve 70% this year) it is recognised that it is likely that the Licensee will need to remove an increased number of badgers in Year 2 of the licence to achieve the level of removal stipulated in the Policy & Guidance.

It is recommended that the daily removal rate of badgers is monitored closely and if the rate falls below projections (such that a significant reduction in badger numbers may not be achieved) then we should consider terminating culling operations (by revoking the licence) as in this scenario there is unlikely to be a net benefit from continued culling.

Maximum number for licence

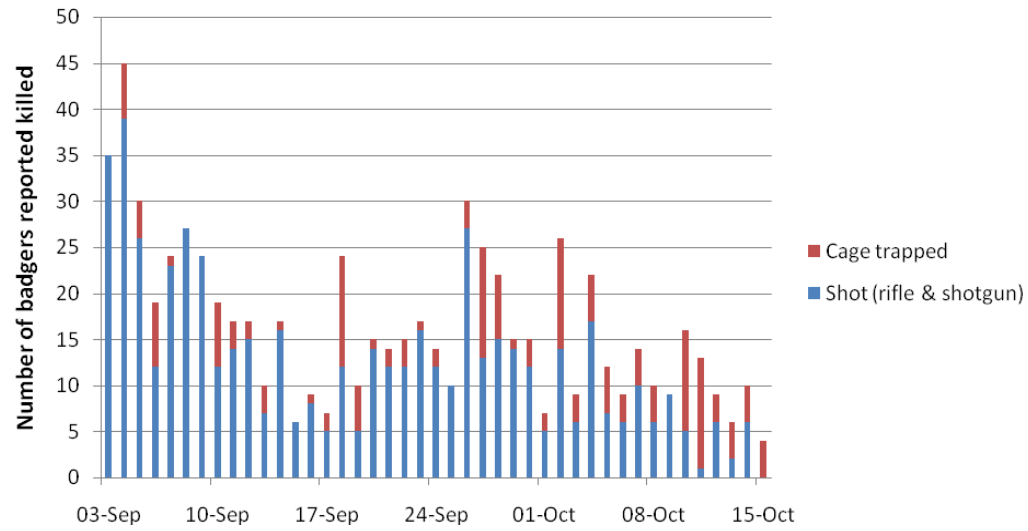
The Maximum Number of badgers permitted to be killed has previously been set at 95% of the population, in accordance with the Policy and Guidance. This figure (set at 95% of the lower CL of the population estimate) would be:

1122 badgers

In order to avoid culling continuing any longer than necessary, it is proposed that for this licence extension the maximum value is set at a level that allows the Licensee to remove up to 70%, but to stop if/when this is reached. For this reason a maximum equivalent to 70% of the central estimate (rounded up to the nearest 10) is proposed.

940 badgers

Gloucestershire Pilot Number of badgers killed each day



Gloucestershire Pilot Cumulative number of badgers killed

