

## **Summary of badger control monitoring during 2016**

### **Natural England Compliance Monitoring Summary of Controlled Shooting during the 2016 Badger Control Licences**



*Natural England Report to Defra & the Chief Veterinary Officer*

### **Introduction**

Following completion of 3 years of badger control in West Gloucestershire (Area 1) and West Somerset (Area 2) and 1 year in Dorset (Area 3), the Secretary of State announced in August 2016 that the policy would be extended to a further 7 areas within the High Risk Area to maximize disease control benefits, namely 2 in Cornwall (Areas 4 & 5), 2 in Devon (Areas 6 & 7), 1 in Dorset (Area 8), 1 in Gloucestershire (Area 9), and 1 in Herefordshire (Area 10).

As in previous years, Natural England, as the independent monitor, was responsible for conducting visits to monitor compliance with licence conditions and the Best Practice Guide (BPG). Natural England allocated resources to monitor 30% of contractors within each of the 7 new Areas, 5% within Area 3 and by exception within Areas 1 & 2. The rationale for this was based on the observations from previous years' culling operations that better compliance resulted from an increased understanding and experience of the required approaches and techniques. That said, Natural England has observed high levels of contractor compliance since commencement of this policy.

Given that field observations of shooting events (by Natural England Monitors) and Post Mortem Examinations (PMEs) of resultant carcasses (by APHA) in 2014 and 2015 indicated that controlled shooting of badgers was comparable with other forms of wildlife management where firearms are used, the Chief Veterinary Officer (CVO) advised that there was little to be gained by conducting routine PMEs this year. It was however, agreed that PMEs would be conducted by exception at the request of Natural England if compliance with licence conditions or the BPG was in question.

### **Methods**

#### **Field Monitoring**

Natural England deployed 10 Monitors to conduct monitoring visits of contractors licensed to carry out controlled shooting in the 10 badger control

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licence areas. In addition to assessing compliance with licence conditions and the BPG, these visits were intended to assess the competency of each contractor team with regards to certain criteria such as firearms handling and safety. Monitors would aim to assess contractor teams against each of the criteria through observations but in situations where a target animal wasn't located or no shooting event occurred, Monitors would question on the remaining criteria.

Monitors were equipped with suitable viewing equipment to observe shooting events; remaining close enough to the Contractor to enable a clear view of the target species prior to and post shot. Observations that were recorded in the field included numbers of badgers shot at and retrieved (including the number of shots taken for each badger), numbers of badgers shot at but missed and numbers of badgers shot at but wounded and lost.

Where Monitors observed a shooting event, and regardless of its outcome, they recorded badger reaction to the shot. Reaction to the shot was assigned into 4 distinct categories namely 'Dropped to the shot', 'Reacted to the shot, moved a short distance and dropped', 'Reacted to shot, follow-up shot/s taken and dropped' and 'Reacted to the shot, moved a short distance, follow-up shot/s taken and dropped to shot/s'.

To ensure that a Monitor could differentiate between a 'missed' and 'a wounded and lost' event, the following information was gathered on the circumstances of the shot:

- Distance of badger when shot taken? – this will have an influence on where the bullet actually strikes relative to the Point of Aim (POA). For example, if the badger is within 25 metres of the contractor, the bullet strike will be slightly low of the POA on a rifle that is zeroed at 70 metres.
- Any audible bullet strike? – if a bullet is on target, there will be an audible 'thud' or 'plop'. A bullet that is off target will have very little (if any) audible strike when entering an earth backstop.
- Any reaction to the shot? – a badger that has been hit will exhibit some sort of reaction whether this is dropping to the ground, jumping forward or into the air, spinning round.
- Gait of badger when it left the site? – a badger that has been hit will usually exhibit an abnormal gait when leaving the site.
- Any blood, hair or bone at the strike site? – an absence of any of these signs suggests that the shot was a miss.
- Any blood along the exit trail of the badger? – an absence of blood suggests a miss
- Any badgers shot immediately prior to and/or post the miss? – this will give an indication as to zero of the rifle i.e. its accuracy.

## **Results**

### **Monitoring Events**

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Natural England Monitors conducted a total of 133 controlled shooting visits across all Areas during the intensive control period.

Of the 443 Contractors who actively participated in controlled shooting, Natural England conducted Compliance Monitoring visits on 131 of these. Table 1 presents details for controlled shooting visits including the number of visits conducted and the percentage number of contractors monitored for each Area.

Area	Active Contractors	Numbers of Controlled Shooting Visits	% of Contractors Monitored
Area 1 - Gloucestershire	29	2	6.9
Area 2 - Somerset	23	1	4.3
Area 3 - Dorset	35	3	8.6
Area 4 - Cornwall	33	14	39.4
Area 5 - Cornwall	22	9	40.9
Area 6 - Devon	73	26	35.6
Area 7 - Devon	38	13	34.2
Area 8 - Dorset	59	18	30.5
Area 9 - Gloucestershire	75	24	32.0
Area 10 - Herefordshire	56	23	39.3
<b>Total</b>	<b>433</b>	<b>133</b>	

**Table 1. Details of Monitoring Events for all Areas**

## Shooting Events

Natural England Monitors recorded data on 112 Shooting Events during the control period, which required 1.2 visits per Shooting Event. The outcome of Shooting Events across all Areas combined is presented in Table 2. One hundred badgers were shot at and retrieved, with 92 of these receiving a single shot and 8 receiving multiple shots. Twelve badgers were shot at but not retrieved (9 'missed' and 3 'wounded & lost').

<b>Total number of Shooting Events for all areas</b>	<b>112</b>
<b>Number of badgers shot and retrieved</b>	<b>100</b>
<i>i. number of badgers receiving single shots</i>	92
<i>ii. number of badgers receiving multiple shots</i>	8
<b>Number of badgers shot at but not retrieved</b>	<b>12</b>
<i>i. number of badgers shot at but missed</i>	9
<i>ii. number of badgers shot but wounded &amp; lost</i>	3

**Table 2. Number of Shooting Events and their outcomes for all areas**

Despite visits being conducted in Area 1 - Gloucestershire and Area 2 –

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Somerset, there were no observed Shooting Events.

### Badgers Shot at and Retrieved

Table 3 presents these results and shows that of the 100 badgers shot at and retrieved, 78 (79%) dropped instantly to the shot, 14 (14%) moved a short distance after the shot and dropped and 7 (7%) reacted to the shot in such a way that follow-up shots were deemed necessary.

Badger Reaction to Shot	100
Dropped to the shot	78
Reacted to shot, moved a short distance and dropped	15
Reacted to shot, follow-up shot/s taken and dropped	2
Reacted to shot, moved a short distance, follow-up shot/s taken and dropped to shot/s	5

**Table 3. Monitor Observations of badger reaction to shot**

There were 8 incidences (8%) over four of the Areas where Natural England Monitors recorded multiple (follow-up) shots on badgers from those that were shot at and retrieved. One of these received 3 shots, with the remainder receiving 2. Follow-up shots were generally precautionary but some were taken because the animal either reacted to the first shot or moved a certain distance immediately after it.

### Badgers Shot at but Not Retrieved

Of the 112 Shooting Events observed by Natural England Monitors across 8 of the badger control licensed Areas in 2016, 12 were recorded as 'shot at but not retrieved' (9 'misses' and 3 'wounded and lost'). This equates to 10.7% of all shooting events and is consistent with the number of 'shot at but not retrieved' recorded during the 2014 (9.52%) and 2015 (9.52%) control licences. The details for these individual events are presented in Tables 4 & 5 below.

Misses and woundings will occur on occasion in any wildlife management control programme where firearms are involved. The contractor has control over the condition of his firearm, the ammunition used, the zeroing of the rifle and his shooting technique. Once the trigger is released, external parameters outside of the contractor's control come into play. The most common reason for misses and woundings outside of the contractor's control is movement of the target species simultaneously with trigger release.

All misses and woundings were confined to Areas that were within their first year of control and their contractors would not have been experienced in shooting badgers. This can be addressed by learning more about badger behaviour and anticipating the movement of these animals when they are engaged in particular activities.

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	Event 1	Event 2	Event 3	Event 4	Event 5
<b>Observation</b>					
<b>Date</b>	01/09/2016	15/09/2016	26/09/2016	27/09/2016	27/09/2016
<b>Area</b>	6	9	8	10	9
<b>Distance of badger</b>	<70m	50m	50m	40m	65m
<b>Audible bullet strike on target</b>	No	No	No	No	No
<b>Visual bullet strike</b>	Bullet struck ground above and behind the badger.	Bullet struck ground 30m from shooting position.	No	Bullet struck ground above badger.	Bullet struck earth banking above animal.
<b>Reaction to shot</b>	Badger 'dipped' its shoulders slightly before making a rapid 180 degree turn and running approx 180m to cover.	Badger looked both ways, trotted over towards cover, stopping to look before entering.	Badger fled immediately, moving at the same pace as the badger located 9 metres to its right.	Badger ran immediately towards sett which was 60m away.	Animal ran towards contractor then did an about turn and ran in full view 50metres in to cover.
<b>Gait of fleeing badger</b>	Normal	Normal	Normal	Normal	Normal
<b>Blood, hair or bone at strike site</b>	None	None	None	None	None
<b>Blood along flight line</b>	None	None	None	None	None
<b>Animals shot prior to and/or post miss</b>	Prior to and post – no issues	Prior to – no issues	Prior to – no issues	Prior to – no issues	Prior to (2 earlier that night – no issues)

**Table 4. Monitor observations of Shooting Events where badgers were shot at but missed**

	Event 6	Event 7	Event 8	Event 9
<b>Observation</b>				
<b>Date</b>	04/10/2016	06/10/2016	06/10/2016	06/10/2016
<b>Area</b>	6	8	8	9
<b>Distance of badger</b>	65m	10	40	50
<b>Audible bullet strike on target</b>	No – but Buddy heard strike on ground	No	No	No
<b>Visual bullet strike</b>	No	No	No	No
<b>Reaction to shot</b>	No obvious reaction to the shot observed on the thermal imager - badger appeared still for 1 to 2 secs then moved left up field with no obvious sign of injury	Ran after the shot was fired	Ran after shot was taken	Ran, stopped and looked around
<b>Gait of fleeing badger</b>	Steady, constant pace with no signs of abnormality to gait	Normal	Normal	Normal
<b>Blood, hair or bone at strike site</b>	None	None	None	None
<b>Blood along flight line</b>	None	None	None	None

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Animals shot prior to and/or post miss	No	Post that night (another miss)	Pre on the same night (another miss)	1 post on the same night
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**Table 4. *contd...* Monitor observations of Shooting Events where badgers were shot at but missed**

	Event 1	Event 2	Event 3
<b>Observation</b>			
<b>Date</b>	19/09/2016	26/09/2016	26/09/2016
<b>Area</b>	8	6	8
<b>Distance of badger</b>	60m	50m	40m
<b>Audible bullet strike</b>	No, but there was a distinct sound of a ricochet.	Yes	Yes
<b>Visual bullet strike</b>	No	No	No
<b>Reaction to shot</b>	Badger span, dropped for a couple of seconds and then got up and ran up the hill towards cover.	Badger spun and rolled onto back. No movement observed for 5-10 seconds. Stood up and ran downhill 50m into cover	Badger dropped to shot for a number of seconds, rolling over, with what appeared to be tail spin. Target animal got to its feet. While running for cover, it went down again before reaching the hedge, but got up again before contractor could take a second shot.
<b>Gait of fleeing badger</b>	Normal	Abnormal	Abnormal
<b>Blood, hair or bone at strike site</b>	None	None	None
<b>Blood along flight line</b>	None	None but heat trail observed through TI.	None
<b>Animals shot prior to and/or post miss</b>	Prior to.	Prior to and post (1) on the same night) – no issues	Prior to and post (2) on the same night – no issues

**Table 5. Monitor observations of Shooting Events where badgers were shot at but wounded & lost.**

## Post Mortem Examinations by Exception

During the processing of carcasses that were collected for the specific purpose of surveillance of TB in culled badgers, Natural England was notified that one carcass from Area 10 did not appear to have trauma consistent with firearms injury. It is common for such injuries to be subtle in an initial and superficial external examination. Nevertheless, Natural England requested APHA to conduct a more detailed PME on this carcass for clarification.

The contractor concerned was questioned by a Natural England Monitor and explained that the animal had been shot under controlled shooting conditions i.e. with a BPG-compliant firearm using high velocity expanding ammunition. The outcome of the PME revealed that this animal had indeed experienced trauma consistent with firearms injury. The left thoracic wall presented with ballistic damage (perforations) and there was extensive damage to the thoracic structures (lung and main blood vessels) with haemothorax.