

# **Cage-trapping and shooting of badgers under licence to prevent the spread of bovine TB in cattle**

## **Best practice guidance**

**May 2012**

---



---

© Crown copyright 2012

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit [www.nationalarchives.gov.uk/doc/open-government-licence/](http://www.nationalarchives.gov.uk/doc/open-government-licence/) or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk)

This document/publication is also available on our website at:  
[www.defra.gov.uk/animal-diseases/a-z/bovine-tb/](http://www.defra.gov.uk/animal-diseases/a-z/bovine-tb/)

Any enquiries regarding this document/publication should be sent to us at:

[tbbc@defra.gsi.gov.uk](mailto:tbbc@defra.gsi.gov.uk) or

Defra  
17 Smith Square  
London  
SW1P 3JR

PB 13715

## Contents

Introduction .....	1
Legal protection for badgers.....	1
Humaneness standards .....	1
Requirements and constraints .....	2
Competence.....	2
Weapons and Ammunition: .....	2
Shotgun certificates.....	2
Sett interference.....	2
Licensed persons .....	3
Planning.....	3
Police liaison .....	3
Public safety.....	3
Trapping strategy .....	4
Cage-trapping procedure.....	4
Seasons .....	4
Equipment.....	4
Pre-trapping survey .....	5
Trap placement .....	5
Pre-baiting.....	6
Setting of traps .....	7
Checking traps .....	10
Non-target captures.....	10
Shooting of captive badgers .....	10
Operator safety .....	11
Situation of shooting.....	11

Preparation for shooting .....	12
Shot placement .....	12
Confirmation of death .....	14
Carcase handling, removal, storage and collection .....	15
Animal by-product regulation.....	15
Carcase bagging .....	16
Storage.....	16
Collection .....	17
Incineration.....	17
Risks of infection .....	17
Cleansing & disinfection of equipment .....	17
Other waste:.....	18
Other issues.....	18
Monitoring of sett activity and closure of inactive setts.....	18
Health and safety .....	19
Record keeping .....	19

# Introduction

1. This Best Practice Guidance describes best practice for the use of live-capture (cage) traps followed by humane shooting and related use of artificial light for the taking and/or killing of badgers. Compliance with this guidance will normally be a condition of a licence issued for the taking/killing of badgers by this means to prevent the spread of bovine TB. **Actions described in this guidance may only be undertaken where a specific licence under the Protection of Badgers Act 1992 authorising the killing and/or taking of badgers has been issued AND in accordance with Class Licence WML-CL04 covering these methods. This guidance does NOT confer any authority to undertake the actions described.** Those acting under licence must ensure that all licence conditions are complied with and must take all reasonable steps to ensure that the licensed operations are carried out safely and humanely. This document deals with the use of traps and trapping. It does not cover planning and carrying out an effective badger control operation over the whole of a (proposed) licence area; this should be dealt with in the application Badger Control Plan.

## Legal protection for badgers

2. Badgers and their setts are protected under the Protection of Badgers Act 1992 (the '92 Act), which makes it an offence to kill or take a badger, except under licence. In addition, certain methods of killing or taking badgers, including use of cage traps and artificial light, are prohibited under the Wildlife and Countryside Act 1981 (the '81 Act). As well as a licence under the Protection of Badgers Act, cage-trapping must be carried out in compliance with the conditions of the relevant 'prohibited methods' Class Licence (WML-CL04) issued by Natural England under the Wildlife and Countryside Act. **A person guilty of an offence under the Protection of Badgers Act or the Wildlife and Countryside Act may be liable on summary conviction to imprisonment or a fine, or both.**

## Humaneness standards

3. Live-capture cage trapping is widely considered to be a humane method for wildlife control or research and its use for culling badgers can be permitted under licence. To ensure a high level of humaneness when a licence is issued, licence holders must take all reasonable measures to ensure that high standards of operation are maintained, including meeting the required level of competence, following these best practice guidelines and strictly complying with all licence conditions. **Operators must never feel rushed into taking a shot.** The key consideration is for a safe, accurate and humane shot.

# Requirements and constraints

## Competence

4. Those trapping and shooting badgers under licence must be competent in the use and safe handling of firearms and in the operation and use of cage traps. Trapped badgers should be despatched using a 12 bore shotgun and all reasonable precautions must be taken to avoid wounding badgers or causing unnecessary suffering. **Persons killing badgers by this method must have attended a Defra-approved training course on the humane killing of badgers.**

## Weapons and Ammunition:

5. Badgers must only be shot within the terms of an appropriate licence using firearms and ammunition that comply with the Protection of Badgers Act 1992. The type of firearm/ammunition allowed and any circumstances which may restrict their use will be specified in the licence conditions. For the humane killing of badgers in traps this is likely to be limited to 12 bore shotguns using appropriate frangible ('reduced hazard') ammunition (see **Frangible Ammunition** below).
6. The use of an automatic or semi-automatic weapon (i.e. one with a magazine capable of holding more than two rounds) is prohibited under the Wildlife and Countryside Act and there will be a presumption against licensing these for culling badgers.
7. The use of artificial light in the course of trapping or despatching trapped badgers is only allowed under licence and users must comply with the relevant Class Licence issued by Natural England.

## Shotgun certificates

8. A person using a shotgun to shoot cage-trapped badgers under licence must be in possession of a current Shotgun Certificate and have authority to shoot on the land where the cage-trapping and shooting is proposed. Any queries on firearms should be directed to the local Police Firearms Enquiry Officer in the first instance.

## Sett interference

9. The Protection of Badgers Act prohibits interference with a badger sett. A licence to take or kill badgers, unless specified in the licence, does not permit interference with a badger sett. The Act defines a badger sett as "any structure or place which displays signs indicating current use by a badger". Interference includes damaging a badger sett or any part of it, destroying a sett, obstructing access to a sett, causing a dog to enter a sett, or disturbing a badger when it is occupying a sett.

10. The placing of small twigs or straw in sett entrances, in order to record animals passing in or out of the sett, can be a useful technique for monitoring sett activity. As long as the materials are lightly placed, and do not obstruct the access of badgers to or from the sett, this does not require a licence. In addition, in suitable conditions, a small amount of sand placed on the ground at sett entrances can be used to detect paw prints, and again does not require a licence.

## **Licensed persons**

11. A licence under the Protection of Badgers Act to kill or take a badger permits only the person(s) named on the licence to carry out the authorised actions or, in the case of a company, an officer or employee of the company; the work cannot be delegated to a third party. Companies can act only through their agents, i.e. employees or officers. The licensed persons, if using a prohibited method, such as cage-trapping, must also comply with the relevant Wildlife and Countryside Act Class Licence.
12. Persons solely assisting in the operation do not need to be named on the Protection of Badgers Act licence, but if they are using one of the methods prohibited by the '81 Act, they too must comply with the relevant Class Licence. For example, those operating a lamp or torch to enable someone else to take/despatch a trapped badger will need to act within the terms of the Class Licence. Persons setting traps to catch badgers are considered to be engaged in the actual process of taking the badgers and must be covered by both licences.
13. When applying for licences, consideration needs to be given to which person(s) will be carrying out each activity. It is recommended that a minimum of two people are present to deal with any badgers caught in traps and at least one other person should be licensed in case they are needed.

## **Planning**

### **Police liaison**

14. Prior to any control operations it is recommended that the local police are informed of dates, times and areas where control will take place. Different police areas may require different information so it is important to check exactly what information is expected. The local police office should be the first port of call.

### **Public safety**

15. The advance planning and conduct of badger control must take full account of the need to avoid risks to public safety.

## Trapping strategy

16. Cage-trapping and shooting must be carried out only as part of a coordinated strategy. The aim of the control in the first year/season of the licence is to reduce badger densities (numbers per area) by at least 70%, but not cause their local disappearance, over a short period of time (no more than 6 weeks). Culling in subsequent years of the licence must aim to keep badger densities at this reduced level, again without causing local disappearance. This should be planned for when deciding the number of traps and trappers needed and the personnel to assist them.

## Cage-trapping procedure

### Seasons

17. **Trapping of badgers for culling will not be permitted from 1<sup>st</sup> December to 31<sup>st</sup> May, inclusive.** This is to reduce the risks of trapped badgers suffering exposure due to severe weather or of leaving dependent cubs underground to suffer starvation as a result of nursing females being culled. However, even during periods when culling is permitted, where an operator has reason to suspect that a trapped animal may be a lactating sow with dependent cubs, then the animal must not be shot and must be released as soon as practicable. In addition, trapping should be suspended in bad weather if there is a risk that trapped badgers could suffer from extreme exposure – taking account of both temperature and wind-chill (see also trap placement below).
18. The actual dates when trapping will be allowed must be agreed in advance with Natural England and will be specified in the licence.

### Equipment

19. Cage traps must be of a design specified in the licence(s). Unless this specifies otherwise, they should normally be 1.1 metre (43 inches) long, about 350 mm (14 inches) wide and 350 mm high, and should be constructed from 50 mm (2 inch) square 8 gauge mesh. There should be no sharp edges and it is recommended to prevent rusting that they should be finished in a polyester powder coating, or similar, to give a smooth finish. The triggering mechanism should be by means of a string trip-line (3-ply garden twine), which an animal pushes against to reach the bait at the back of the trap. This releases the trap door, which is then held in place by a brace mechanism or gravity, depending on design. Garden twine must be used as it breaks easily if a badger becomes entangled in it; thus avoiding risk of injury. The following additional equipment is needed:
  - a. Wire (minimum diameter 1mm) or cable-ties for fixing trap doors open
  - b. 3-ply garden twine for re-setting traps
  - c. Spade for bedding in traps (see below)

- d. 40mm PVC pipe for depositing peanuts inside the trap – alternatively a spade may be used for this purpose
  - e. Restraining wicket(s) (see below)
  - f. Carrying handles for traps
  - g. Spare trigger bars and flaps for the trap release mechanism
  - h. Pliers or multi-tool for fixing doors open with wire
  - i. Container for carrying peanuts
  - j. Blunt instrument for corneal reflex test
20. Before use, each trap must be checked to ensure it is in good working condition; replace or repair any faulty or damaged parts as required (e.g. trigger arm or hinge plate) and check for any sharp points or faults that might injure a trapped badger particularly if the mesh has rusted.
21. If a double-barrelled shotgun is to be used, one or more sections of mesh will need to be cut out of the roof of each trap to give adequate access for the weapon. This will need to be fitted with a closable flap that can be fixed shut when not in use in such a way that will not present a hazard to any badgers inside (no sharp edges/protrusions etc). Before trapping commences, check that the muzzle of the weapon passes easily through the mesh, or 'cut-out', at various angles, so that badgers may be safely shot in a range of different positions in the trap. A single-barrelled shotgun should not require modification of the traps as the barrel will pass through any square of the mesh. For this reason single-barrelled shotguns may be preferred.

### **Pre-trapping survey**

22. Before any trapping is carried out, all known setts in the area should be visited and their level of activity checked by searching for field signs, such as tracks, bedding, fresh spoil and well-worn runs. Once this has been done, decisions can be made about trap placement; deploying traps, as far as possible, at active main setts. Where setts are inaccessible or just outside the area where permission for trapping has been granted, 'remote trapping' (trapping away from the sett) may be appropriate. The possible presence of non-target species (i.e. species, other than badgers, that might be trapped) must be taken into account.

### **Trap placement**

23. Ideally, the number of traps deployed should be no fewer than the number of badgers likely to be at the sett/location being trapped, so trap numbers do not limit the number caught. Estimates of potential catch may be based on average group size per sett, taking into account previous observations or culling history in the area, if known, or experience gained as the cull progresses. In the absence of any other information, as a rule-of-thumb, an average of 6 adults might be expected at a main sett, with an additional 2-3 cubs/juveniles in season. In which case, at least 8-9 traps should be used.

24. Traps must only be placed on land where permission has been granted. If remote trapping is being considered, e.g. because of setts on neighbouring land where there is no permission, due regard must be given to the wishes of landowners/occupiers who do not want to allow culling. This is particularly important where badgers have been or are being vaccinated. In this case, there should be no attempt to 'draw out' badgers from the non-participating land by trapping along the boundary.
25. Where access is available, traps should be positioned at or close to the active setts, ideally beside runs radiating from the sett. They should not be placed directly on the runs, but to one side, with the trap entrance facing the run.
26. Traps must be 'bedded in' on the ground surface, to ensure that they are stable and securely positioned. This may require the creation of a level base using a spade. The floor of the trap should then be covered with soil, taking care not to interfere with closure of the door. Traps must not be positioned directly on spoil heaps or block access to, or be dug into, sett entrances or tunnels.
27. Traps should be positioned to take advantage of any natural cover available to give trapped animals shelter from the elements (including exposure to wind/rain and overheating from the sun) and to reduce the risk of third-party interference. Additional protection may be provided using materials available on site. Care must be taken to ensure that any materials used do not foul the trip mechanism. Traps placed on a slope must be secured in position, fixed to stakes if necessary, to avoid them toppling if a trapped animal were to move about. Traps must also be sited away from other hazards, including areas at risk of flooding and those containing livestock. Consideration must be given to the ease with which a trapped badger can be despatched. Positioning of the trap must allow the accessibility necessary to shoot the badger or for the trap to be easily moved to a suitable location nearby.
28. To minimise disturbance, and the risk of badgers deserting the site, all the traps at a single location should be placed on the same day, avoiding dusk and dawn, when they are likely to be active above ground.
29. The number of traps positioned must be recorded in a field notebook and their location marked on a map or site plan. The locations must be clearly enough recorded so that all the traps could be found by another person, should the original operator be unavailable.

### **Pre-baiting**

30. Traps should be pre-baited with suitable bait, such as peanuts, before being set to catch. This encourages badgers to enter the traps and maximises the potential number of captures in the first few nights of trapping. Putting some bait out before the traps are in position may help to shorten pre-baiting times. Bait can be placed in the

trap using a 40mm PVC pipe, spade or by hand. One or two handfuls of peanuts are sufficient, placed in a heap near the back of the trap, with a trail of peanuts laid down the centre of the trap and out of the open doorway. Pre-baiting should continue for long enough to ensure that as many badgers as possible are visiting the traps. Normally this would be expected to take 3-10 days. If, after a number of days, the bait remains untouched, other baits, such as oats, maize or fruit may be tried.

31. Bait should not be scattered around the trap as this can encourage badgers to dig under the trap from the outside, or reach in through the mesh, resulting in animals becoming 'trap-shy' if the trap is sprung. On the first day of pre-baiting, however, some bait may be thrown down and around active sett entrances to get the badgers used to feeding and encourage them to search for it. Pre-baiting should be done late in the day, to reduce the opportunity for non-target species to take the bait, but before the badgers are likely to emerge. Placing the bait under a stone can also help prevent access by non-targets. Trap doors should be securely tied open with wire (minimum diameter 1mm) or cable-ties during pre-baiting so that badgers may freely enter and exit the trap. Traps should be checked daily during the pre-baiting stage and any bait taken replenished.

## Setting of traps

32. When adequate bait-take has been recorded, the traps should be set to catch. A final check that the traps are in good working order should be made and the hinge plate and trigger arm should be lubricated with animal fat (e.g. lard) to ensure they operate freely (synthetic lubricants should not be used as these may deter badgers). Note that it is important to coordinate trapping, each year, across the licensed area so that it occurs across the whole area in as short a time as possible.
33. When 'stringing up', the trap door can be held open by inserting the trigger arm on the door into the hinge plate on top of the trap (see Plate 1). To install the trip-line attach one end of the twine to a notched 'stringing up' stick and thread it down through the roof of the trap to the rear of where the trap door hinges attach. Then feed the string out through one side of the trap just in front of where the bait will be placed (approx. 20-25 cm from the back of the trap and 10 cm off the ground; this may need slight variation according to terrain and trap type). Thread the string back into the trap through the neighbouring mesh square and pass it straight across and out the opposite side. It should then be threaded back into the trap, as for the other side, and out through the same mesh square in the roof where it originally entered. The two ends of the string are then tied together with a slip-knot which is pushed down the length of the string so that it forms a triangle inside the trap (see Plate 2).
34. Ensure that the hinge plate is positioned more or less vertically, at ~90° to the roof of the trap (see Plate 1), and cut the string off so that the end can be threaded through the top hole in the hinge plate and tied on; in wet weather, to allow for shrinkage, the string should not be set too taut. The end of the trigger arm is then placed in the lower

hole in the hinge plate, such that it will be easily pulled free when the string is moved and the door will close. Always test the door-closing mechanism before setting. The trap should be baited as before.

35. The number of traps *set to catch* at each sett/trapping location must be recorded in the field notebook (NB this may differ from the number of traps originally deployed)



**Plate 1:** Trigger mechanism of trap showing hinge plate in roughly vertical position (blue arrow) and tip of trigger arm passed through lower hole of hinge plate (orange arrow) to hold trap door open. The green arrow indicates the line of twine, once set, from the upper hole of the hinge plate, running towards rear of trap.



**Plate 2:** Setting the trap: the green line marks the line of twine from the hinge plate (which will be ~vertical when set) towards the rear of the trap, then through the roof into the trap 20-25cm from the rear, then out first through one side then the other, then back to join the central line of twine. This join should be made with a slip-knot that can be pushed down into the trap to form a triangular 'coat-hanger' shape, as shown. The other end of the string is then tied to the hinge plate with the door held open (as in Plate 1).



**Plate 3:** Trap set, showing peanut bait pile at rear of trap and wire mesh of floor loosely covered with soil.

## Checking traps

36. Only a person licensed under the Protection of Badgers Act may directly handle or shoot any live badgers trapped. Once the badger is dead, no licence is needed to handle it and assistants may help by, for example, placing the badger into a bag and disposing of it as described below.
37. Cage traps set to catch must be checked and any badgers caught must be dealt with as soon as practicable after dawn the following day. In any event, operators must complete this before 12 noon (this should be taken into account when planning how many operators are needed). Operators have a legal responsibility under the Animal Welfare Act 2006 not to cause unnecessary suffering to any animal under the control of man – this includes a wild animal held in a trap.
38. The traps that are most at risk of exposure to the elements or to human interference should be checked first.
39. Experience suggests that, following pre-baiting, most badgers will be caught in the first three nights of trapping. Setting traps to catch for much longer than this should only be undertaken if badgers continue to be caught; a maximum of 10 consecutive nights should normally be sufficient at any one trapping site. After this either fix traps open so they cannot catch or remove them from the site.

## Non-target captures

40. Any wild non-target animal captured should be released at the point of capture, unless it is a species that cannot legally be released (e.g. certain listed and non-native species, such as the grey squirrel), or humanely killed (unless it is of a species which it would be illegal to kill). Wild animals which are so seriously injured or in such a condition that it would be inhumane to release them must be humanely killed as soon as possible or taken without undue delay for veterinary treatment.
41. Any domesticated animals caught without signs of injury should be released at the point of capture, or returned to their owners, if applicable. Injured animals must be taken for veterinary treatment without undue delay and their owners notified if possible.
42. Non-target animals that are killed must be disposed of appropriately.

## Shooting of captive badgers

43. **The aim is to ensure that the captured badger is killed humanely and that the technique is safe for the operators, the public and any non-target animals in the vicinity.**
44. A minimum of two people should be on site when shooting badgers in traps.

## Operator safety

45. The shot must be taken at close range, with the muzzle of the weapon inside the cage, but not in contact with the animal (see below). Operators must take account of the ricochet risk from hard surfaces, such as the wire mesh of the trap or stony ground, and the risk of 'splashback' of tissue from the shot animal. *Mycobacterium bovis*, the causative agent of bovine TB, can pass from animals to people; protective clothing is advisable and face masks and eye-protection should be considered.
46. Before shooting, the operator must ensure that all people in the vicinity are in a safe position, behind the line of fire. If there is a risk of interference from third parties, it may be necessary to abandon any attempt to shoot the badger(s). If so, it must be released unharmed.

### Frangible Ammunition

47. Frangible ammunition is designed to disintegrate on impact, and minimise the risk of ricochet and splash back whilst ensuring a humane kill at close range. Use of such a cartridge in a long-barrelled weapon, such as a shotgun, further reduces the hazard of splash-back. Natural England will licence the use of frangible ammunition which it is satisfied is equivalent to, or has equivalent properties to the best performing frangible ammunition, that was tested in Defra funded trials. A double-barrelled or magazine-fed shotgun may minimise the delay in the event of a second shot being needed, but the use of a double-barrel will require modification to cage traps (described in '**Equipment**' above) to allow the range of angles necessary to take a humane shot. A single barrel shotgun may not require any modification of the trap and should prove easier to position correctly as the barrel will pass through any point in the mesh.
48. Suitable frangible ammunition is not available 'off-the-shelf', so licence coordinators will need to arrange access to an authorised supplier.

## Situation of shooting

49. Recommended practice allows for traps to be checked in daylight, but there may be occasions when captured animals have to be despatched during darkness. In any event the shooter should be familiar with the terrain, having visited during daylight to inspect the area, carry out a risk-assessment, and to check the trap locations for hazards to safe shooting. Care should be taken to avoid any risk to non-target species, including domestic animals and livestock, and to ensure that there is no risk of accidental injury to humans. The ground on which the traps are placed must provide a safe backstop. If use of artificial light (e.g. a lamp or torch) is necessary to aid despatch, then its use must comply with the relevant Natural England Class Licence.
50. In order to minimise stress to the trapped badgers, they should normally be shot in the trap, on site, without being moved to another location. Trapped badgers should only be moved if they cannot be safely shot at the trap site. Disturbance, and any time spent in transit, should be kept to a minimum. If a trapped badger does have to be moved, the

trap should be covered to help keep it calm and it must be allowed to settle before being shot.

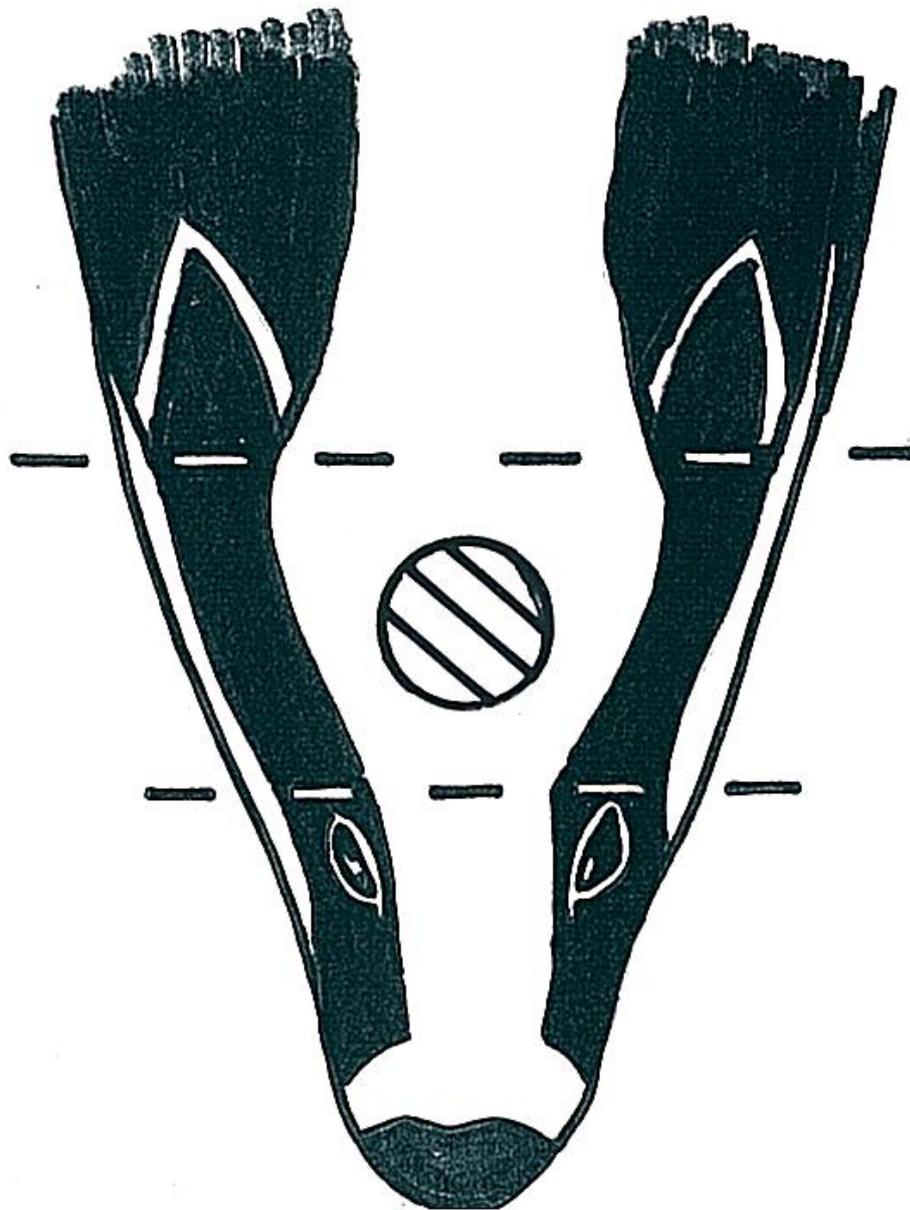
## Preparation for shooting

51. On arrival on site to check the traps, the weapon to be used should be unloaded, with no cartridge in the chamber. Traps should be approached quietly and calmly so as not to stress any captured animals. Unnecessary additional persons should not accompany the operators when checking traps and on no account should dogs be taken on site. Where there are several traps set close to each other, if possible, all should be checked first without approaching the traps (see below), so that despatch can be planned to minimise stress for all the animals involved. As soon as the traps have been checked, if there are animals to be despatched, the weapon should be loaded and any trapped animals dealt with without delay. If a double-barrelled or magazine-fed shotgun is being used, two cartridges should be loaded so that a second shot can be taken quickly, should there be any doubt about the first having killed instantly. If a single-shot shotgun is used, a second cartridge should be ready to hand, for a rapid second shot, if necessary.
52. The trapped animal needs to be in a position to allow a safe and humane shot (see Shot placement, below). Trapped badgers may be found asleep but they can also be active and alert. If a badger is very active it may be necessary to restrict its movement in order to shoot it safely. A 'wicket crush' may be useful for this and can be pre-constructed or improvised on site using stout sticks inserted through the side or top of the cage. If more than one badger has been caught in the same trap, extra care is needed. The operator will need to decide if they should be placed in separate cages prior to shooting or if they can be shot humanely, in rapid succession, in the same trap. The main considerations are minimising any physical suffering or stress to the badgers and ensuring operator safety. In all cases, the badger must be settled before the shot is taken.

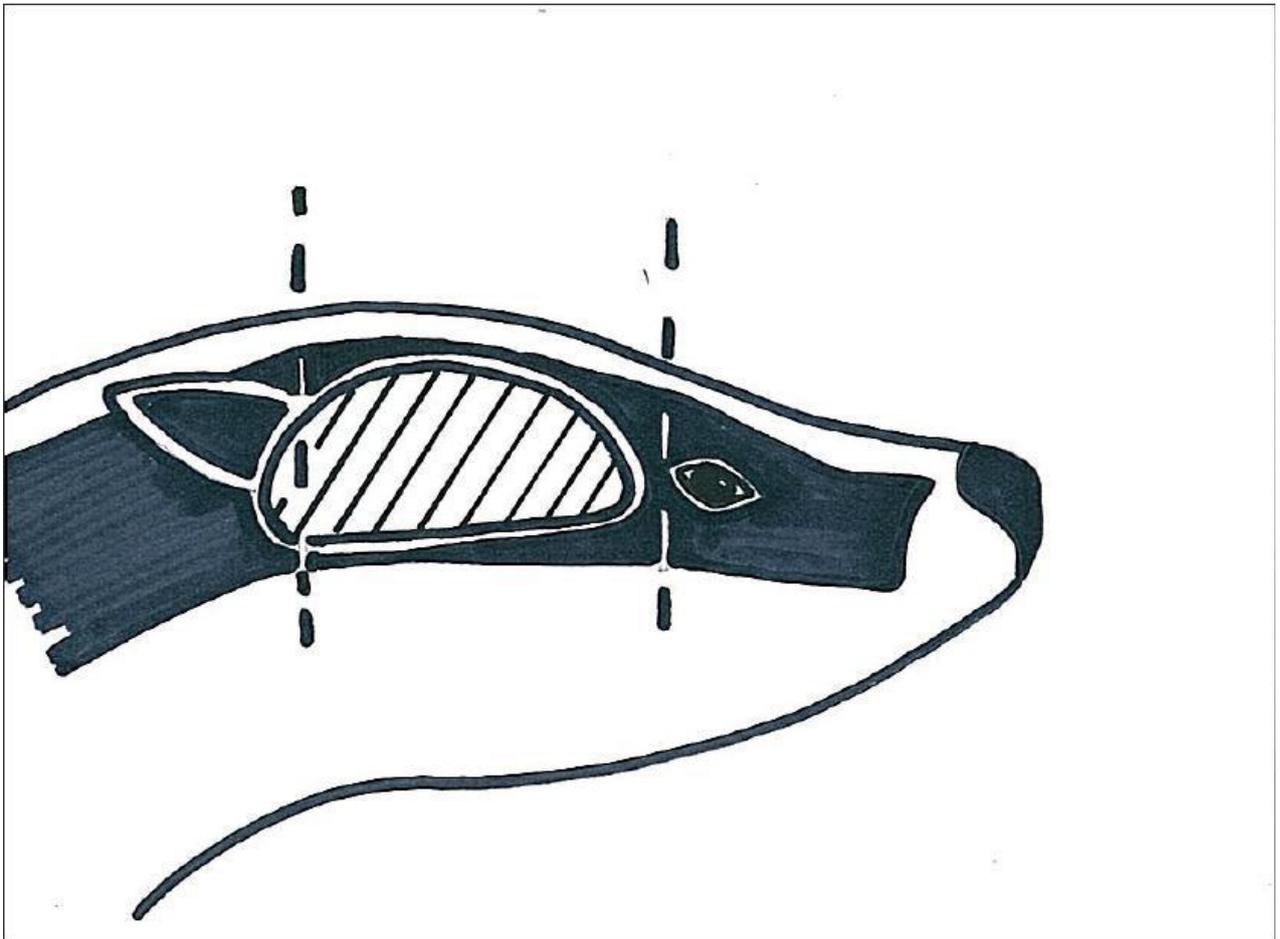
## Shot placement

53. A well-placed shot to the head from close range (<6 inches/15cm) should be overwhelming, resulting in rapid unconsciousness and death. The muzzle of the weapon should be inserted with care through the mesh of the cage trap **but not in contact with the animal**. Neck shots and body shots are not suitable for despatch of trapped badgers. The target is the front of the forehead with the shot angled through the brain towards the brainstem (see Figure 1). If this target area is not accessible, e.g. because of the way the badger is lying, then the animal should be coaxed gently into position until it is. The use of wickets to restrict the badger's movement should be considered if the animal is active. The weapon should be held firmly to achieve a steady aim whilst, consistent with proper handling of the weapon, keeping the shooter's body well away from the badger to avoid the risk of splashback of tissue hitting the shooter. Immediately after shooting, the animal should be checked to

ensure it is dead, and if there is any doubt, a second shot must be taken as soon as possible. The operators should then deal with any further trapped animals at that location, before dealing with the carcase.



**Figure 1(a):** Shot placement for humane despatch of a cage-trapped badger: hashed circle shows the target area. Broken lines show approximate position of front and rear of brain using the position of the eyes and ears as markers.



**Figure 1(b):** Shot placement for humane despatch of a cage-trapped badger: broken lines show approximate position of front and rear of brain using the position of the eyes and ears as markers. Hashed area shows approximate position of the brain.

## Confirmation of death

54. After shooting a badger, regardless of first impressions (unless it is obviously still alive), an assessment should be made to confirm that it is dead. Signs that should be checked for include:
- Correct shot placement (i.e. entry hole is in the target area –see Fig.1)
  - Absence of rhythmic breathing (i.e. no chest movement / rise and fall)
  - Absence of eye movement / blinking reflex
  - Eye wide open and the pupil dilated
  - Absence of large convulsions or muscle spasms (i.e. muscular movement / reflex)
55. The animal should be touched with a blunt instrument following the above checks to test for any reaction. A final check should be made by lightly touching the eye to test for a blink reflex (a small stick or similar should be used). Disposable gloves should be worn when handling the animal.

56. Checks to confirm death must be made as soon as practicable after the shot has been taken and initial checks should be made within 1 minute. However, if involuntary muscle convulsions occur, final checks will need to be delayed until these have ceased. This should not delay dealing with other trapped animals at the same location. Involuntary muscle convulsions affecting the limb and body muscles can occur within a minute of a shot through or near the brainstem and are consistent with a correctly placed shot. These generally last for no more than 1 - 2 minutes and animals remain unconscious throughout. Absence of convulsions does not mean that the shot was unsuccessful. Final checks should not be made until any convulsions have ended.
57. After all the animals at the site are confirmed dead the firearm should be emptied of any remaining ammunition and stored safely.
58. **A final check for signs of life must be made *at least 3 minutes after the final shot to that animal and before the animal is bagged up*.** Only once the animal is confirmed dead and all visible movement/reaction and the animal's heartbeat has ceased, should the animal be bagged (see below).

### **Carcase handling, removal, storage and collection**

59. Badger carcasses will not routinely be collected for post-mortem examination or disease analysis, but some may be required for monitoring purposes.
60. In handling carcasses, particular attention should be paid to health and safety issues to avoid possible aerosol transmission of bacteria and other potential hazards such as ticks or other parasites.
61. Operators do not need a licence to handle dead badgers as long as they have been taken and killed lawfully.
62. Operator safety: badger carcasses and any material from them (urine/ faeces/ blood etc) may contain TB and provide a source of infection. Operators must take appropriate action to minimise the chances of spreading this material around and infecting themselves, colleagues or the area in which they are working. Appropriate protection should be worn (e.g. gloves, mask, overalls, washable boots).
63. Carcasses being transported from the shooting site to any other location, such as a collection point at a farm premises, must be appropriately bagged (see below) and transported in a covered vehicle or under a secure cover if in an open-backed vehicle.

### **Animal by-product regulation**

64. The European Union Animal By-Products Regulation 1069/2009 (EU ABPR) lays down health rules concerning animal by-products. The Regulation divides animal by-products into three categories, according to the degree of risk which they pose, and specifies the

permitted treatment or disposal routes for each category. Wild animals normally fall outside the scope of the Regulation, but when they are “suspected of being infected with diseases communicable to humans or animals” they fall within the list of Category 1 materials (Article 8(a)(v)). Bovine TB is a zoonotic disease and therefore the carcasses of any badgers, which are suspected of harbouring the disease, fall within the definition of Category 1 animal by-products.

65. Category 1 materials are required to be collected, transported and identified without undue delay and either incinerated in an approved incineration plant or processed in an approved rendering plant, with the processed products being finally disposed of as waste by incineration or burial in an approved landfill. Burial without first processing is not a permitted disposal route for Category 1 material.

### **Carcase bagging**

66. Carcasses must be double-bagged in heavy-duty PVC sacks, following the procedures set out below:

- Bagging should be carried out at the site where the badger is killed unless there is good reason not to
- Great care must be taken and disposable gloves worn at all times when handling carcasses
- Take the first bag and:
  - Roll it down three-quarters;
  - Carefully place the carcass inside;
  - Unroll the bag;
  - “Goose-neck” the bag (i.e. hold the bag closed above the carcass then twist the upper part of the bag like a rope);
  - Either knot the “goose-neck” or tie it with PVC tape or strong string, a cable-tie, or similar.
- The first bag must then be placed in the second
- The second bag is then “goose-necked” and either knotted or tied, as above
- Gloves must be disposed of in accordance with local Clinical Waste Disposal Instructions

Following the above procedures will help avoid possible aerosol transmission of bacteria from carcasses.

A label must then be attached to the bag indicating it is a badger for collection and disposal as category 1 waste.

### **Storage**

67. Bagged carcasses must be stored on site pending collection. Alternatively, collection points may be established but these must be approved by Animal Health and Veterinary Laboratories Agency (AHVLA) as a handling site (transporting the badger carcasses to such a site would also need to be done under animal by-products rules on

transport using an approved or registered operator). The cost of meeting the required standards needs to be taken into account.

68. Under the EU ABPR, carcasses must be disposed of without “undue delay”. The length of time a carcase can be stored requires judgement as it is dependent on several factors such as the season and the appropriateness of the storage conditions (e.g. refrigeration and protection against vermin). A carcase must be in a condition that a collector will accept. Carcasses must not be stored outdoors or where scavengers such as foxes, dogs or rats could have access to them. This can be achieved by storing carcasses in a vermin-proof building.

## Collection

69. Collection may be done under the National Fallen Stock Scheme or by an alternative collector within the normal collecting arrangements for other fallen stock. As badger carcasses would be Category 1 material, all material collected as part of this round will be classed as Category 1 material. The EU APBR prohibit bringing animal by-products on to any premises where livestock is kept. Therefore carcasses must not be removed from a vehicle collecting other animal by-products from other premises.

## Incineration

70. Once Category 1 material has been collected, it must go to Category 1 approved renderers or incinerators either directly or via Category 1 intermediate plants. Guidance on the disposal of Category 1 material can be found via this link: [www.defra.gov.uk/food-farm/byproducts/](http://www.defra.gov.uk/food-farm/byproducts/)

## Risks of infection

71. In theory all waste material arising from the operation (such as splatter) will be Category 1 material. However, judgement is required to ensure proportionate effort and costs. Guidance can be provided for operators on bio-security and disinfection.
72. Care should be taken to deal with any blood and other carcase debris that may be left within the trap or on the ground after shooting. As much potentially infected material as possible should be bagged up with the badger. Any debris left should be well covered by soil (at least 3 inches/ 8cm).

## Cleansing & disinfection of equipment

73. Traps must be cleansed and disinfected before being moved to another sett/ site and special care should be given to those that have had badgers shot in them.
- Under no circumstances should traps move from farm to farm without prior cleansing and disinfection

- Once all organic material has been removed, the traps must be disinfected with an appropriate disinfectant<sup>1</sup>
- Following disinfection, the traps should be rinsed with clean water to remove the smell of the disinfectant which might deter badgers from entering the traps

74. Arrive at a farm in a clean vehicle. If equipment is to be used on more than one farm, then before moving to the next farm equipment which might transfer disease, such as overalls and boots, must be cleaned of biological material (soil etc) and then disinfected with an appropriate disinfectant. To remove the smell of disinfectant which might be detected by badgers, a final rinsing with clean water is recommended.

### **Other waste:**

75. All clinical waste (e.g. used gloves/disposable clothing) must be collected and disposed of in a designated bag which must be returned to a pre-determined disposal point for final disposal.

## **Other issues**

### **Monitoring of sett activity and closure of inactive setts**

76. For the purpose of disease control, as long as densities are sufficiently reduced, it is not generally necessary or cost effective to remove every last badger. Culling which is detrimental to the survival of the local population is prohibited under the Bern Convention and there will be upper limits on the number of badgers that can be taken in a licensed area. Therefore, badger activity will continue in culled areas, albeit at lower levels.

77. Monitoring sett activity will help to provide an indication of the effectiveness of the control operation and whether further control at a particular site (within the 6 week period) would be appropriate. It may also be useful in ensuring that badgers are not eradicated from the local area. Any such monitoring must not involve interference with a badger sett, such as obstruction or damage to the sett.

78. It must not be assumed that because control has been carried out near a sett, the sett is no longer occupied and can therefore be closed down. In the Randomised Badger Culling Trial it was estimated that cage-trapping removed, on average, about 70% of the local badger population. It is therefore quite likely that some badgers will remain in an area following trapping and also following controlled shooting. As long as a sett displays signs that indicate current use by a badger it is protected under the Protection of Badgers Act 1992 and must not be interfered with without an appropriate licence.

---

<sup>1</sup> The list of approved disinfectants for use in TB control can be found at [http://disinfectants.defra.gov.uk/Default.aspx?Location=None&module=ApprovalsList\\_SI](http://disinfectants.defra.gov.uk/Default.aspx?Location=None&module=ApprovalsList_SI)

## Health and safety

79. An appropriate risk assessment should be conducted before any shooting is carried out and thorough controls put in place to ensure safety of the general public and of all involved in the operation. The controls should include measures to minimise risk of exposure to potentially infective material, use of appropriate protective clothing and other measures where risk of exposure is identified, measures to avoid injury from handling badgers, as well as risks of using firearms. Reference should be made to HSE leaflet AS7(rev) '*Guns*' and in addition relevant shooting organisations should be able to provide appropriate information on safe handling of firearms.

## Record keeping

80. Certain information will be required in order to complete the licence return to Natural England. In addition, it is best practice to record on a daily basis what has been done, where and by whom. Day-to-day details of the control operation should be recorded by the licensed operator in a field notebook. Periodically, field notes will need to be passed to the licence coordinator to enable him/her to complete the necessary licence returns. It is vital, therefore, that adequate and accurate records are kept.
81. Records must include farm/site name, location, number of trapping teams and trapping nights undertaken, and the actual location at which each badger was trapped. Trapping locations should be recorded as a six figure Ordnance Survey grid reference – e.g. in the format SX789456. Grid references can be found by checking the location on a 1:50,000 or 1:25,000 Ordnance Survey map of the area, and following the instructions on the map for recording a grid reference, or by using a hand held GPS device. Farm or holding locations can be recorded as a four figure grid reference (e.g. the equivalent 4 figure reference identifying the kilometre square in which the 6 figure example given above is found, would be SX7845).
82. This information is likely to be sensitive, so care must be taken not to lose field note books or leave them unattended (e.g. in unlocked vehicles). Loss must be reported to the cull co-ordinator and the police as soon as possible.
-