



Department
for Environment
Food & Rural Affairs



Controlled shooting of badgers in the field under licence to prevent the spread of bovine TB in cattle

Best practice guide

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Introduction

This Guide has been produced to provide clear direction to those licensed to carry out controlled shooting of free-ranging badgers in the field to prevent the spread of bovine TB in cattle. It provides recommendations on best practice and highlights those areas of the technique that must be complied with, including licence conditions.

This Guide does NOT confer any authority to undertake the actions described. These actions may only be undertaken where a specific licence under the Protection of Badgers Act 1992 authorising the killing of badgers has been issued AND in accordance with Class Licence WML-CL05. Those acting under licence must ensure that all conditions are complied with and must take all reasonable steps to ensure that the licensed operations are carried out safely and humanely.

Legal protection of badgers

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 the use of artificial light or any device for illuminating a target (eg a spotlight), or sighting devices for night shooting and certain use of vehicles are prohibited under the Wildlife and Countryside Act 1981 (the '81 Act).

As well as a licence under the '92 Act, shooting, using any of the above methods, must be carried out in compliance with the conditions of the relevant 'prohibited methods' Class Licence (WML-CL05) issued by Natural England under the '81 Act. A person guilty of an offence under the '92 Act or the '81 Act may be liable on summary conviction to imprisonment for a term not exceeding six months, or an unlimited fine, or both.

The '92 Act prohibits interference with a badger sett, which includes damaging, destroying and obstructing access to a sett, causing a dog to enter a sett and disturbing a badger when it is occupying a sett. A licence to take or kill badgers, unless otherwise 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".

It should not be assumed that, because control has been carried out at or near a sett, the sett is no longer occupied and can therefore be closed down.

Humaneness standards

Controlled shooting is widely considered to be a humane method for wildlife control. To ensure that a high level of humaneness is maintained in badger control, licensed operators must meet the required level of competence, follow these best practice guidelines and strictly comply with all licence conditions.

Operators must never feel rushed into taking a shot. The key consideration is for a safe, accurate, and humane shot.

Training

Those shooting badgers under licence (as opposed to assisting eg by operating a spotlight) must be competent in the use and safe handling of firearms and **will be required to demonstrate an appropriate level of marksmanship, through necessary training, including Government's approved training on the humane shooting of badgers.** Consideration should also be given to appropriate refresher training to maintain competence.

Licensed persons

A licence to kill or take a badger for the purpose of preventing the spread of bTB permits only the person(s) named on the Additional Authorised Persons (AAP) list to carry out the authorised actions; the work cannot be delegated to a third party.

Persons assisting but not participating in killing/taking activities, such as pre-baiting, do not need to be named on the AAP. However, if an individual is not shooting, yet is still performing an action prohibited by the '81 Act, such as operating a spotlight, they must act within the terms of the Wildlife and Countryside Act 'prohibited methods' Class Licence (WML-CL05).

When applying for licences, consideration needs to be given to which person(s) will be carrying out each activity.

COVID-secure practices

Mammals, including badgers, are potentially susceptible to coronaviruses and infection of wildlife could create problems for the control of the disease in humans. To avoid transmitting COVID-19 from people to badgers, COVID-secure practices that should be followed for activities listed in sections of the best practice table ('The Guide') include:

- Do not handle bait (peanuts) without wearing disposable gloves. Tip bait into containers to carry to field sites and pour peanuts in bait points.
- Waste must be removed from field sites and discarded in appropriate waste bins or sacks.

The Guide

	What you must do	Important advice
1. Firearms and ammunition	<p>Rifles</p> <p>A minimum of .22 centre-fire calibre, using expanding ammunition with a minimum bullet weight of 50 grains and minimum muzzle energy of 1000 foot-pounds</p>	<p>The minimum rifle calibre required to satisfy the ballistic criteria is a .222 REMINGTON.</p> <p>Use of sound moderators does not need a licence under the '81 Act or the '92 Act, but their use with section 1 firearms (eg centre-fire rifles) must be covered by the user's Firearms Certificate (s.1 Firearms Act 1968)</p>
2. Firearm Certificates	<p>A person shooting badgers under licence must be in possession of a current Firearm Certificate (appropriate to the firearm he or she is using) and have authority to shoot on the land where the shooting is taking place. Firearm Certificates may be amended by the Police to include a condition that permits the shooting of badgers.</p>	<p>Any amendment required can be a specific condition or the 'Any Other Lawful Quarry' condition.</p> <p>The Police may require sight of a copy of the relevant '92 Act licence before making an amendment. Any queries on firearms should be directed to the local Police Firearms Enquiry Officer in the first instance.</p>
3. Use of dogs	<p>The use of dogs to hunt uninjured badgers is part of the act of taking or killing, so prohibited by the '92 Act.</p> <p>Dogs must not be used in flushing or driving badgers from setts. Causing a dog to enter a badger sett is an offence.</p>	<p>The use of a trained dog to follow a scent trail, with the aim of locating (without physically coming into contact with) an injured badger, does not require a licence and can be carried out under an exemption provided in the Hunting Act 2004.</p>

<p>4. Seasons</p>	<p>The time of year when shooting may be permitted is restricted and no shooting of badgers in the field will be permitted from 1st February to 31st May, inclusive. This is to avoid the possibility of leaving dependent cubs underground to starve as a result of nursing females being culled.</p> <p>During periods when culling is permitted, where an operator has reason to suspect that an animal may be a lactating sow with dependent cubs, the animal must not be shot.</p>	<p>The actual period when shooting is permitted will be specified annually under the terms of the individual licence.</p>
<p>5. Shooting methods</p>	<p>A minimum of two people (a Shooter and a Buddy) must be involved in night shooting, unless the Shooter meets criteria of the 'exemption' set out below which permits them to operate alone.</p> <p>Exemption: Under a "Supplementary Badger Control" licence ONLY, a Shooter may conduct night shooting without the assistance of a Buddy if they meet the following criteria: A Shooter who has been active in each of the 4 years of an Intensive Cull licence area without any breaches of the licence or Best Practice Guide may operate without a Buddy present.</p>	<p>Two people are required for humaneness and health and safety reasons, and so that one person can operate the spotlight/image intensifier leaving the other free to concentrate on shooting and the safe handling of the firearm.</p> <p>The Shooter must be able to accurately identify the target and confidently locate the heart-lung target area on the badger's body. Identification of a target by eye-shine alone is unacceptable and must never be relied upon. The Shooter must have a clear view, so as to make a clean and lethal shot, and be certain of the safety of taking the shot.</p>

Acceptable shooting methods are:

- Searching over an area and shooting using a spotlight, night vision or thermal imaging at a **maximum distance of 70 metres.**
- Shooting over a bait point using a spotlight, night vision or thermal imaging at a **maximum distance of 70 metres**

The use of artificial light (e.g. spotlamps/torches) and any device for illuminating a target (e.g. infra-red illuminators) or sighting device (night vision and thermal imaging) for night shooting are prohibited under the '81 Act but may be licensed by Natural England if certain conditions are met. These include:

- Only 'Generation 2' or '3' Night Vision equipment with infra-red (IR) illumination may be used as a rifle scope (or comparable digital Night Vision equipment with IR)

The Buddy must be close enough to the Shooter to ensure that he/she can communicate the presence of non-target animals, protestors etc., and can view the location of a badger immediately prior to and following a shot.

Coloured filters (eg red) may reduce a target animal's awareness of the spotlight, and so allow a closer approach or more time to take a shot, but they also reduce the amount of light visible to the shooter.

In the case of rifles fitted with telescopic daytime, night vision or thermal imaging sights, these need to be checked to ensure that they are accurately 'zeroed' for the ranges at which shooting is likely to take place.

A sound moderator on a rifle is likely to be a particular advantage at bait points because of the expectation that shooting will take place at the same location on repeated occasions.

'Immediate pursuit' is not defined in the Act but Natural England/Defra take the view that using a vehicle to help search for badgers or as a stationary shooting platform is acceptable.

- Dedicated digital Thermal Imaging riflescopes with a microbolometer (sensor) resolution of 384x288 or higher, a pixel pitch of 17µm or smaller, a lens focal length of 38mm or larger and a frame rate of 30Hz or above may be used.
- Dedicated digital Thermal Imaging riflescopes with a microbolometer (sensor) resolution of 320x240, a pixel pitch of 12µm or smaller, a lens focal length of 38mm or larger and a frame rate of 50Hz or above may be used.
- Front attachment ('add-on') digital Thermal Imaging equipment with a microbolometer (sensor) resolution of 640x480 or higher, a pixel pitch of 12µm or smaller, a lens focal length of 50mm or larger and a frame rate of 50Hz or above may be used on a daytime rifle scope.
- A separate Night Vision spotting device (also with IR illumination) and/or Thermal Imaging spotting device and/or lamp must be used by the Buddy to scan the wider area to spot

6. Site selection

Shooting must take place only on land covered by the licence.

A badger must only be selected to be shot if it is **at least 25 metres** away from the nearest sett and far enough from dense cover, where a badger might be lost, to avoid the risk of a wounded animal getting away.

Since shooting will normally occur at dusk or at night, the shooting team must be thoroughly familiar with the terrain, having made visits during daylight hours to check the area, to carry out a risk assessment, and to identify safe and unsafe shooting locations. An obvious place to select is in the vicinity of a sett, where emergence may be at predictable times, but badgers must not be shot too close to sett entrances.

Care must be taken, in selecting sites, to avoid shooting where there is any risk of accidental injury to humans and to avoid any risk to non-target species including domestic animals and livestock.

The shooter must be certain of a safe backstop and ensure the absence of any person or animal at risk of sustaining an injury should the bullet/shot miss, pass through the target animal, or ricochet. A stationary vehicle may make an appropriate 'hide' or raised platform.

Badgers may be encountered, away from the sett, feeding in or crossing fields, but shooting in such circumstances must only take place where there are no concerns over safety and where the shooter is confident of a clean and lethal shot.

For safety reasons the sights on the rifle must not be used to scan the area or check the identity of a potential target – a firearm should never be pointed at anything until it has been positively identified as a legitimate target.

7. Baiting

Bait points must be at least 30 metres from the nearest sett and must be far enough from dense cover, where a badger might be lost, to avoid the risk of a wounded animal escaping.

Badgers will learn to take bait from regularly placed bait points, using bait such as peanuts, or peanuts mixed with treacle. This can provide a means of attracting animals to a safe shooting location where shooting effort can be directed with a reasonable degree of predictability and likelihood of success. Bait take, and badger visits to the bait point, are likely to be maximised if baits are located near to active setts, subject to the constraints above regarding badger only be selected for shot if it is **at least 25 metres** away from the nearest sett, and close to well-used runs.

Bait points should be chosen to ensure a safe shooting location. A safe backstop must be present before any shot is taken. The shooting position should be downwind from the bait point and any nearby setts, but ideally located so that a wounded badger running back to the sett will still pass within range of the shooter.

– a retreating badger, running directly away from the shooter, is unlikely to provide an opportunity for a humane second shot and may quickly get out of range of the firearm being used.

Bait points should be pre-baited for a period of time before any shooting takes place. Depending on how quickly the badgers find the bait, this may take a week, or more – it is best to allow ample time for this to ensure that the majority of animals in the location are used to feeding on the bait, before doing any shooting.

<p>8. Shot placement</p>	<p>Badgers in the field (not in cage-traps) must be shot in such a manner that there is sufficient trauma to the heart/lung area to ensure a rapid and humane death.</p> <p>Head and neck shots must NOT be taken due to the very small lethal target areas that they present and the risk of non-fatal injury.</p> <p>Shots must only be taken when the animal is stationary, and when the shooter is confident that he/she can place the shot in the heart/lung area.</p>	<p>The badger's neck and shoulder areas are extremely well-muscled and, when building up body weight during the late summer and autumn, a substantial layer of subcutaneous fat develops over the body. The badger's anatomy differs from that of deer or foxes, and the badger's rib-cage is located appreciably further back than in these species. The "dip" in the badger's back, behind the shoulders, provides the best guide to the heart/lung area, which lies below and slightly to the rear of this (Fig.1).</p> <p>Because of the slant of the shoulder blades, the elbow travels somewhat further backwards than in foxes and deer, and consequently when the fore-leg is in the vertical position, the heart/lung area will be temporarily obscured by a robust bony limb (Fig. 2). The angle of the badger relative to the shooter will influence the point of aim needed to place the shot in the heart/lung area.</p>
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Figure 1: The circle shows the location of the main heart/lung area on a badger that is standing broadside.

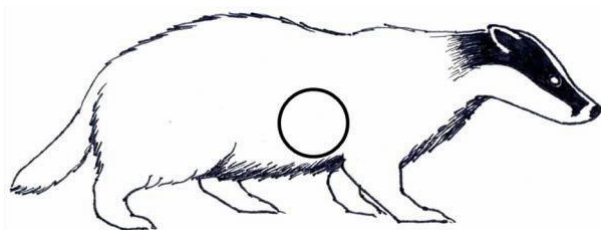
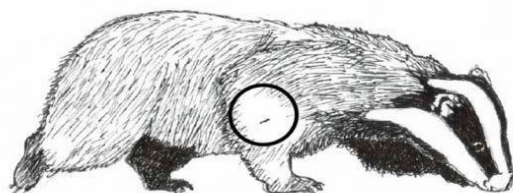


Figure 2: The circle shows the location of the main heart/ lung area on a badger that is standing at a slight angle.



<p>9. Following up a shot</p>	<p>The aim must always be to kill the animal quickly with the first shot. If the shooter is not confident of doing</p>	<p>Where an animal is assumed to have been fatally shot, it may be advisable to leave it for a couple of minutes (but never more than 5</p>
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	<p>so, the shot must not be taken.</p> <p>If there is any indication that a badger may not have been killed instantly, the shooter must be in a position to fire a follow-up shot. If in doubt, a second shot should be taken and, if necessary to prevent the escape of a wounded animal, this may be taken at ranges outside of those specified above.</p>	<p>minutes) before making an approach; the rapid approach of a human may spur a fatally wounded animal to take flight and be lost. Where possible, the approach should be from downwind and from behind the badger, stopping periodically to check for signs of life. Until the death of the animal can be confirmed, the shooter must be prepared to take a further shot if necessary.</p> <p>Once death of the animal has been confirmed, the firearm should be unloaded and made safe.</p>
<p>10. Shooting badgers in groups</p>		<p>Badgers are more likely to be encountered in groups where a bait station has been established, though this may occur in other situations as well.</p> <p>Depending on the circumstances, and the firearm and other equipment being used, it is possible that badgers present when another badger is shot will become wary of that location and of any other factors associated with it (eg lights, noise). The potential impact of this on future shooting success should be considered if such circumstances present themselves.</p> <p>If shooting a badger when other badgers are nearby, consideration needs to be given to the possibility of accidentally wounding nearby badgers. The relative position of the badgers to each other, the line of fire and the type of firearm being used, needs to be considered. Shots should not be taken if there is a risk of wounding nearby badgers.</p>
<p>11. Injured badgers in setts</p>	<p>If an injured badger is believed to have taken refuge in a sett, the sett</p>	<p>If sett interference is considered to be in the badger's best interests, Natural England must be contacted</p>

	<p>must not be dug into or interfered with in any way, nor must dogs be entered into the sett.</p>	<p>to apply for a licence and any otherwise prohibited action only taken after an appropriate licence authorising that action has been granted.</p>
<p>12. Confirmation of death</p>	<p>After shooting a badger and in the belief of correct shot placement, regardless of first impressions (unless it is obviously still alive), an assessment needs to be made to confirm that it is dead.</p> <p>A final check for signs of life must be made within 5 minutes of the final shot to that animal and before the animal is bagged up.</p>	<p>Signs that should be checked for include:</p> <ul style="list-style-type: none"> • Entry hole is in the target area / chest (if visible) • Absence of rhythmic breathing (ie no chest movement / rise and fall) • Absence of eye movement / blinking • Eye wide open and the pupil dilated • Absence of large muscle spasms (ie muscular movement / reflex) <p>The animal should be touched with a blunt instrument following the above checks to test for any reaction.</p> <p>The cornea of the animal should then be lightly touched to confirm the absence of a blink reflex.</p> <p>Disposable gloves should be worn when handling the animal.</p> <p>Checks to confirm death should be made as soon as practicable after the shot has been taken (but see above). If involuntary muscle convulsions occur, final checks will need to be delayed until these have ceased.</p> <p>Involuntary muscle spasms affecting the limb and body muscles can occur within a minute of a shot. These convulsions generally last for no</p>

		<p>more than one to two 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.</p>
<p>13. Carcase handling</p>		<p>Badger carcases will not routinely be collected for post-mortem examination or disease analysis, but some may be required for monitoring or research purposes. These carcases must not be kept for longer than 24 hours prior to collection.</p> <p>In handling carcases, 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.</p> <p>Operators do not need a licence to handle dead badgers as long as they have been taken and killed lawfully.</p> <p>Operator safety: badger carcases and any material from them (urine/faeces/blood etc.) may contain TB and provide a source of infection.</p> <p>Operators should 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 (eg gloves, mask, overalls, and washable boots).</p> <p>Carcases being transported from the shooting site to any other location, such as a collection point at a farm premises, need to be appropriately bagged and transported in a covered vehicle</p>

		<p>or out of sight if in an open-backed vehicle.</p>
<p>14. Carcase bagging</p>	<p>Carcases must be individually labelled to indicate that they are badgers for disposal as Category 1 Waste.</p> <p>Carcases must be double-bagged as soon as is reasonably practicable using heavy-duty bags.</p>	<p>Bagging should be carried out at the site where the badger is killed unless there is good reason not to do so.</p> <p>Great care should be taken and disposable gloves worn at all times when handling carcasses.</p> <p>Take the first bag and:</p> <ul style="list-style-type: none"> • roll it down three-quarters; • carefully place the carcase inside while averting the face (to minimise the risk of aerosol inhalation); • unroll the bag; <p>“goose-neck” the bag (ie hold the bag closed above the carcase, twist the upper part of the bag like a rope and then bend this down);</p> <ul style="list-style-type: none"> • either knot the “goose-neck” or tie it with a cable-tie, or similar. <p>The first bag must then be placed in the second.</p> <p>The second bag is then “goose-necked” and either knotted or tied, as above.</p> <p>Gloves must be disposed of in accordance with local Clinical Waste Disposal Instructions.</p> <p>Following the above procedures</p>

		will help avoid possible aerosol transmission of bacteria from carcasses.
<p>15. Carcase storage</p>	<p>Bagged carcasses must be transported without “undue delay” to an agreed safe site that is operating under the European Union Animal By-Products (ABP) Regulation (Regulation EC No. 1069/2009) (see below) and stored securely pending collection.</p> <p>Under the European Union Animal By-Products Regulation (Regulation EC No. 1069/2009) (see below), carcasses must be collected, identified, and transported without “undue delay” and disposed of in accordance with the Regulation. The length of time a carcass 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).</p>	<p>Carcasses 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 leak-proof container within a vermin-proof building.</p>
<p>16. Carcass collection</p>	<p>An appropriate collection service would need to be put in place. As badger carcasses may be harbouring bovine TB they are considered Category 1 material and all material collected as part of this round will be classed as</p>	

	<p>Category 1 material. The EU ABPR prohibits bringing animal by-products on to any premises where livestock is kept. Therefore carcasses must not be removed from a vehicle when at a livestock premises to collect other animal by-products.</p>	
<p>17. Cleansing & disinfection of equipment</p>	<p>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 disinfectant¹.</p>	<p>To remove any smell of disinfectant, which might be detected by badgers, a final rinsing with clean water is recommended.</p>

¹ The list of approved disinfectants for use in TB control can be found at <https://www.gov.uk/guidance/defra-approved-disinfectant-when-and-how-to-use-it#disinfectant-approval>

Other requirements

Animal By-products Regulations

- The European Union Animal By-Products Regulation (Regulation EC No.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 suspected of harbouring the disease fall within the definition of Category 1 animal by-products.

- 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 such Category 1 material.

Monitoring of sett activity

- 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.

Health and safety

- 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. Reference should be made to Health and Safety Executive leaflet 'Safe use of guns' (<https://www.hse.gov.uk/pubns/ais43.htm>) and in addition relevant shooting organisations should be able to provide appropriate information on safe handling of firearms.

Record-keeping

- Certain information will be required in order to complete the licence return to Natural England. In addition, it will be necessary to record on a daily basis what has been done, where, and by whom. Day-to-day details of the control operation should be provided by the contractor and passed to the licence holder. It is vital, therefore, that adequate and accurate records are kept.
- Records must include participant number, location, number of shooting teams and shooting nights undertaken, and the actual location at which each badger was killed. Kill locations should be recorded against the individual field reference number.
- This information is likely to be sensitive, so care must be taken not to lose field note books or leave them unattended (eg in unlocked vehicles). Loss

must be reported to the licence holder as soon as possible.

Natural England compliance monitoring

- To ensure compliance with licence conditions and this Best Practice Guide, Natural England will undertake a series of monitoring visits of selected Contractors.
- A Natural England Monitor will accompany Contractors during night-time controlled shooting to observe firearms handling and safety, dispatch of badgers and safe handling of carcasses. Natural England Monitors cannot act as a buddy.

Further information

- The information listed below deals with species other than badgers but, although detail may need to be modified for badgers, some broad principles will apply:
- British Association for Shooting & Conservation, 2013, 'A Code of Practice: Lamping (Night Shooting)'. <https://basc.org.uk/codes-of-practice/night-shooting/>
- The Deer Initiative, 2009, 'England & Wales Best Practice Guides: Culling - High Seats'. www.thedeerinitiative.co.uk/uploads/guides/162.pdf