Badger Rehabilitation Protocol

Secret World Wildlife Rescue
National Federation of Badger Groups
Royal Society for the Prevention of Cruelty to Animals

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Contents

Chapter 1

Policy

Protocol for rehabilitation and release of badgers

Best practice

The National Federation of Badger Groups (NFBG), the Royal Society for the Prevention of Cruelty to Animals (RSPCA), and the Secret World Wildlife Rescue (SWWR) have collaborated for a number of years on the rehabilitation and release of badgers. The organisations have drawn up this protocol for best practice with the primary purpose of returning healthy badgers back to the wild in a responsible way that has high regard for animal welfare and for the control of disease. The protocol has also been formulated to assist those involved with the rehabilitation of badgers, including vets, who may not have the information necessary to ensure that badgers are treated correctly.

Reasons for rehabilitation

The main reason for rehabilitating badgers relates to animal welfare and redressing the balance of human activity. Individual badgers come into care for a variety of reasons. Adults are usually injured due to road accidents, being caught in snares or from bite wounds. Cubs are usually orphaned, rather than injured. The process of rehabilitation provides an opportunity for healthy badgers to be released back into the wild, particularly if the badger comes into care through the result of human activity, such as being injured in a snare. A secondary reason for rehabilitating badgers relates to conservation, in repopulating areas of low badger density that arise from previously high levels of persecution.

Precautionary approach to bovine tuberculosis

The NFBG, RSPCA and SWWR recognise that a responsible approach must be taken, although it is not proven that badgers are a significant source of bovine tuberculosis (bTB) to cattle. However, it is acknowledged that some badgers are infected with bTB (Gallagher, 1976) and a precautionary approach should therefore be adopted when rehabilitating and releasing badgers. This is particularly important as there is no test for detecting bTB in live badgers which is 100% reliable (Clifton-Hadley *et al.*, 1995). Strict procedures will allay public concern and reduce to a minimum the potential for spread of disease to other badgers, domestic animals and livestock, although we accept that some healthy animals may be euthanased due to errors with the test (Forrester *et al.*, 2001). This policy is under constant review pending advances in bTB research.

Regulation of badger rehabilitation

The NFBG, RSPCA and SWWR believe that prohibiting badger rehabilitation and release is not a feasible option. If it is banned, it is inevitable that badgers will continue to be rehabilitated and released, but in a clandestine, unregulated manner. This situation would be unacceptable as it could seriously compromise badger welfare.

Overview of rehabilitation process

A flow chart showing the process to be followed is shown in Figure 1.

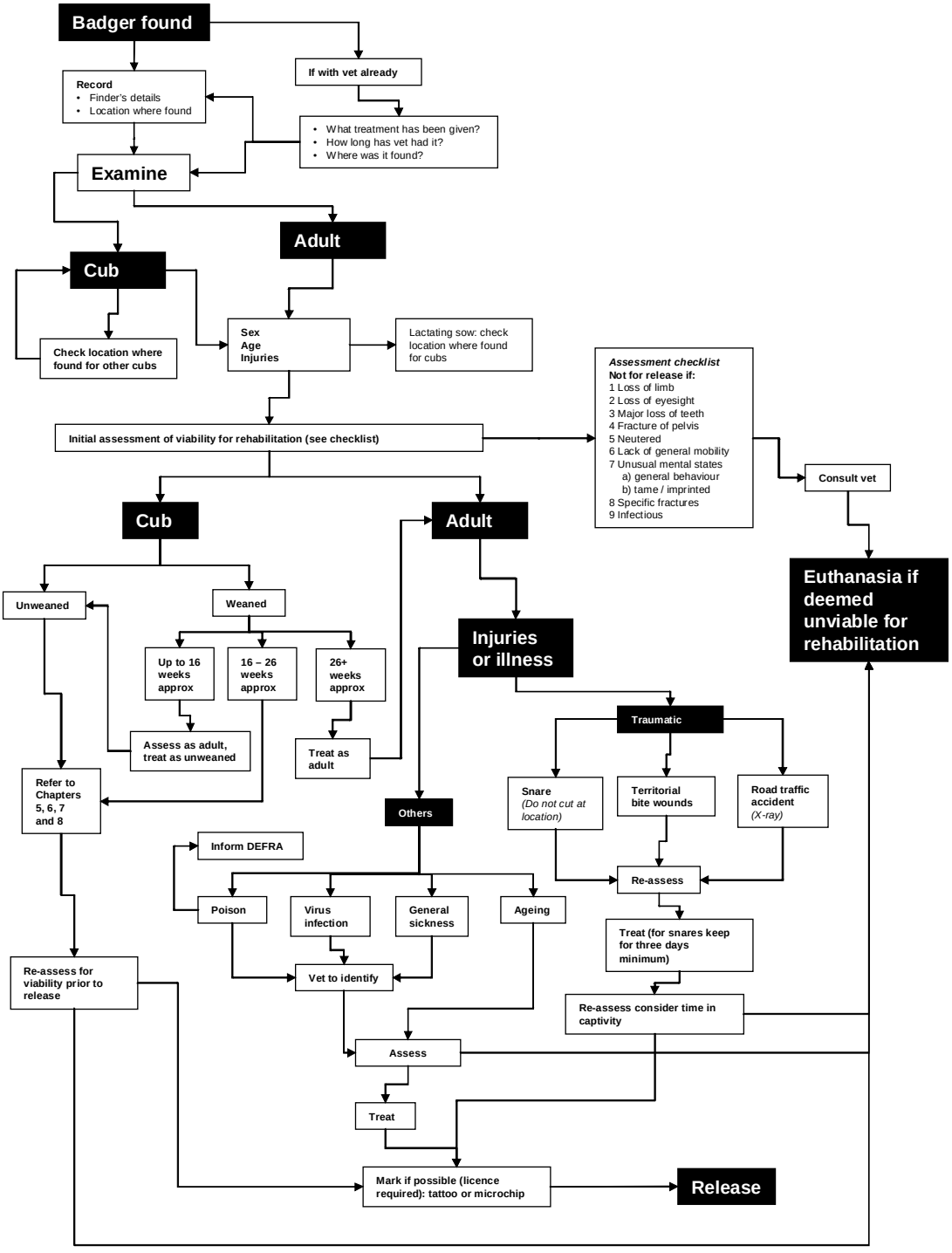


Figure 1: Rehabilitation flow chart

Chapter 2

Retrieving injured badgers

Experienced personnel only

Initial response

The most common incidents badger groups and RSPCA personnel are called to deal with are road casualties, but any badger, either in unnatural surroundings or above ground during daylight hours, will undoubtedly be injured or distressed, and should be caught and examined.

Most calls come from members of the public who discover casualties at the roadside or in outbuildings.

Ask them for the exact location and their telephone number.

Ask them to cover or enclose the badger and stay with it until you arrive. If the badger becomes agitated or attempts to escape then they should retreat and monitor it from a safe distance.

Assess the situation

Take your time and don't take risks, assess the situation from a distance. Remember a badger is a wild animal and regards humans as predators. It will not understand that you are trying to help them.

Carry your equipment with you, approach slowly and watch for any reaction.

Presume all badgers are conscious!

Initial handling

Orphaned

Most orphaned cubs can be picked up once they have been covered with a blanket.

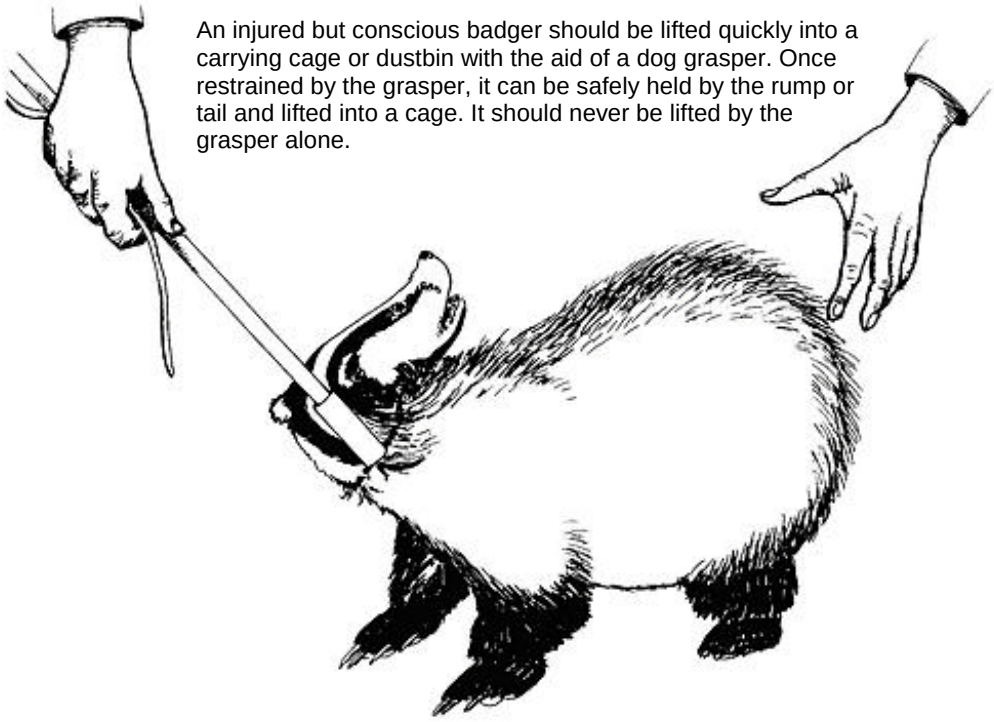
Road traffic accidents

Test for consciousness by touching with a stick, starting from the hind quarters and moving towards the head.

If unconscious either grasp it by the scruff of the neck or, as with above, cover and roll into a blanket. Always try to support the back to prevent aggravating possible injuries.

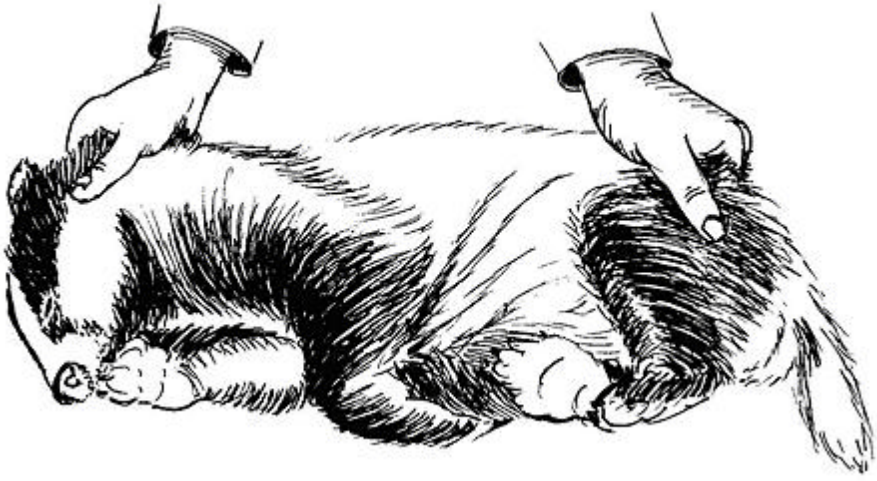
If conscious and you feel confident enough, grasp by the scruff of the neck. Another technique is to tempt the badger to bite a glove, cloth or stout stick and to grasp it whilst it is distracted. If there is any doubt about handling the badger then resort to a grasper. It may not be easy to place a grasper over the head, so hold a stick through the loop of a grasper which the badger can be tempted to bite. This will usually cause the badger to lift its head sufficiently to allow the grasper to be positioned. Lift using the grasper and support the body at the same time by holding the rump – not the tail.

Figure 2. How to lift an injured badger



An injured but conscious badger should be lifted quickly into a carrying cage or dustbin with the aid of a dog grasper. Once restrained by the grasper, it can be safely held by the rump or tail and lifted into a cage. It should never be lifted by the grasper alone.

A severely injured unconscious animal may be lifted by the loose skin at the base of the tail and the scruff of the neck.



Be firm, don't hesitate: don't give the badger the opportunity to bite.

Fully conscious and mobile (trapped or contained)

Assess means of escape and using boards or panels (minimum 1 metre high) encourage animal in to a darkened container (e.g. a covered cage, front opening). If badger is uninjured, it should be released immediately, away from danger, but as close to point of capture as possible.

Snared

Either pin the badger down or hold down the snare with a forked stick to restrict its movement. A steel bar 8-10 mm diameter with a "pig tail" twist at the end, similar to old electric fence stakes, can be used to trap the snare wire. This, slid along the wire towards the badger, will aid control.

Do not cut the snare from its fixture until the badger is secured.

The snare should not be removed from the badger unless the animal is anaesthetised under veterinary supervision. It is impossible to ascertain the level of injuries that may have been caused whilst the animal is conscious. Notify the location of the snared badger to the RSPCA, Police Wildlife Liaison Officer and local badger group.

Further handling

Any further handling of a conscious badger should be kept to a minimum.

During veterinary inspection, use of a muzzle is recommended.

Do's and don'ts

DO	Mark the spot where the badger has been picked up, for example, tie a string around a bush or tree, or a plastic bag to fence. This ensures the badger is released on familiar ground. (Ensure any such marks are removed later.) One spot on a country lane can look very much the same as another in the dark.
DO	Avoid stress. During transportation, at veterinary location or whilst in care avoid contact with other animals or in close proximity. Keep noise to a minimum. Cover the cage as, the badger will settle during transit if in a darkened cage. Keep the badger warm whilst allowing good ventilation.
DO	Note the weight of the cage and any blankets/sheets, so that the badger can be weighed within the cage. Then subtract the weight of the cage etc. from the weight of the badger and cage. This vital information is needed to ensure the correct dosage of anaesthetic and drugs.
DO	Liaise with the vet.
DON'T	Put yourself and others at risk.
DON'T	Lay an apparently unconscious badger loose in the back of a car.

Notes on equipment

Use a containment box with a side and top opening for easy access. Suitable cages are available - see contacts list.

Professional graspers are available through veterinary suppliers.

Heavy duty pincers or pliers are suitable for cutting snare wire. Side cutters will cut wire that is approximately 2.5 mm – 3 mm in diameter.

Gloves or gauntlets offer very little, if any, protection against a badger's bite. Rabies control gauntlets have metal rivets to cover the back of the hand and fingers.

Landing nets can be purchased at fishing tackle outlets.

The cost of some of the above equipment may discourage people from offering to help injured badgers. Those attending call-outs on a regular basis will require equipment that ensures they are able to retrieve the injured badger from any number of situations. With a little thought, an injured animal can be caught using a wide range of alternatives. An inexpensive grasper can be constructed using a length of electrical conduit and stout cord. A weak badger can be encouraged to enter a clean dustbin, or covered with a plastic storage box then a board slid under and secured, and both, in an emergency, can be used to transport the badger for treatment. At least the badger is contained safely until a person equipped to deal with the incident can attend.

Information for veterinarians

For specific information on badgers, vets should refer to the BSAVA manual of Wildlife Casualty Care.

Chapter 3

Registering and marking of badgers

Registration

Procedure

All badgers coming in to care should be registered, either with the NFBG Rehabilitation Group Chairman, the Secret World Wildlife Release Officer or the RSPCA Wildlife Rehabilitation Co-ordinator. To identify each badger, they should be microchipped and/or tattooed so the animal can be tracked during captivity and identified after release. Note: A licence is required from the Statutory Nature Conservation Organisation for your area to tattoo badgers. It is essential to identify all badgers, orphaned or adult, before release, as this provides useful information on the success or failure of the release, which can be fed back into the rehabilitation programme. Microchips also ensure that cubs going through the rehabilitation process can be identified for blood tests. It provides continuity on the bTB test certificates, especially on badger cubs which are too small to be tattooed. Both methods are preferred, if possible, as microchips can be read after tattoos may have become obscured but tattoos can be read easily in the wild, if a badger is found dead.

The marking of badgers before release back into the wild is permissible under licence. A blanket licence can be obtained for this purpose from the appropriate licensing authority. The marking of badgers by any other means is illegal without a licence.

When a microchip or tattoo has been used, the following information is to be supplied to the NFBG Rehabilitation Advisor, Secret World Wildlife Rescue Release Officer or the RSPCA Wildlife Rehabilitation Co-ordinator for computerisation on the central records:

- Tattoo/microchip number
- Name of the person who applies the tattoo/microchip
- Location of badger when first discovered, complete with six figure grid reference
- Nature and cause of the badger's injuries (if any)
- Age and sex of the badger
- Any peculiarities – colour, mark, scars, etc
- Date found
- Date badger released
- Location of release, complete with six figure grid reference
- bTB testing information, including frequency, dates and results.

- bTB Test Certificate(s)

Microchipping

Microchips are readily available to vets. They should be implanted by a vet, as anaesthesia or sedation is required to restrain the animal. However, ALL injured badgers should be examined by a vet and a microchip can be inserted during this general examination.

Tattooing

A licence is required from one of the following to tattoo badgers: English Nature, Scottish Natural Heritage, or Countryside Council for Wales, depending on the part of the country. Badgers should be tattooed on both sides of the lower abdomen with a number supplied by the NFBG Rehabilitation Working Group (see contacts list). They will supply a code which will be unique to that specified group or licence holder (see equipment supplier list).

The details above must be provided before subsequent numbers are issued.

The format of the registration number will be as follows:

- Location code/Number/year, e.g., W/12/96

The scheme started 01 January 1996.

Chapter 4

Adult badgers

Protocol for treatment and release

An adult badger should be treated for injuries and returned in good health as soon as possible to the exact location that it was found.

TB testing

An adult badger should **not** be blood tested for bovine TB for the following reasons:

- It will be released to its original location, so eliminating the opportunity for the spread of disease to new areas;
- Recent published data show that a single blood test is unreliable (Forrester *et al.*, 2001);
- It is unlikely to be held in captivity long enough to conduct three blood tests.

Euthanasia

An adult badger should be euthanased if any of the following statements apply:

- It cannot be returned to the exact location from which it was recovered ;
- It needs complicated treatment involving prolonged veterinary care or is showing poor adaptation to captivity while recovering;
- It has evidence of chronic disease or is showing signs of reaching the end of its natural life span;
- It cannot be released due to permanent injuries or long-term disability.

Chapter 5

Badger cubs

Protocol for treatment and release

Badger cubs need to be treated differently to adult badgers for a number of reasons. Cubs need to be mixed with other badgers because they are social animals and need to be held in captivity for some months before being old enough to survive. In addition, cubs usually cannot be released back to the location where they were found and so cub groups need to be carefully constructed and carefully released to account for the bTB status of their area of origin.

Retrieving badger cubs

The exact location of where a cub is found should be obtained (six figure grid reference), so that the TB status of the area of origin can be determined.

All cubs should receive a full veterinary health examination on arrival. The animal's sex and age should be confirmed at this stage. For specific information on badgers, vets should refer to the BSAVA manual of Wildlife Casualty Care.

Cubs should be registered and a microchip issued. The microchip should be inserted between the shoulder blades, under veterinary supervision when the first TB blood sample is taken. The microchip's unique number will be used to identify the badger in future blood testing.

TB testing and release

The first blood test for bovine TB should be carried out from 6-8 weeks old. Ideally, this should be carried out as soon as the animal is taken into care and before mixing with other cubs.

On receiving the first bTB test results, cubs should be mixed to form social groups for release. Cubs should be mixed with other cubs from areas of a similar bTB status (see Chapter 11). The sex-ratio should be taken into account to ensure the social group is viable.

All cubs should be blood tested for a second time, at least four weeks after the last cub in the group was first tested. All cubs should be tattooed at this point as general anaesthesia or deep sedation is likely to be required in order to obtain safely a blood sample.

All cubs should now be in groups to allow for social development and interaction.

All cubs should be tested for a third time as near as possible to the time of release and at least 4 weeks after the second test.

Anaesthesia for the third blood test allows full health inspection of the animal prior to release. Tattooing can be done at this stage if not carried out by the second test.

Badgers should only be released following three consecutive negative blood test results.

Cubs should only be released in areas of similar bTB* status (see below).

Cubs testing bTB positive

Cubs testing positive to ANY of the three bTB blood tests must be euthanased. A licence is required from DEFRA for this operation (see contacts list).

All contact animals must be euthanased, unless the positive badger is *post mortem* examined and multiple lymph node cultures carried out to determine its bTB status. This is the gold standard for bTB diagnosis (Gallagher and Horwill, 1977; Clifton-Hadley *et al.*, 1995; Pritchard *et al.*, 1986). In order to provide consistent data, arrangements have been made to use a single approved laboratory free of charge. For details of how to deal with positive badgers for *post-mortem*, contact Elizabeth Mullineaux at the Quantock Veterinary Hospital (see Contacts List). Remaining badgers in the group should be held in captivity, without further testing, pending the results of the *post mortem* cultures. No *post mortems* should take place in any establishment that does not have facilities as required by Health and Safety guidelines for this purpose.

If the euthanased animal is *post mortem* and culture negative, the remaining group can continue the release protocol.

If the euthanased badger is positive on *post mortem* and culture examination, the remaining animals in the group must be euthanased.

Cubs not suitable for release

Cubs failing to rehabilitate successfully should be euthanased on the first attempt of the rehabilitation process, except in exceptional circumstances where they may provide a conservation or educational value and can be provided with facilities that allow normal behaviour.

Defining bovine TB areas

As part of the registration process for each badger cub, the person responsible for the cub should classify it according to its potential bTB risk. This should be done by identifying the parish that the animal came from.

It is hoped that in early 2003, DEFRA will have developed an interactive page on its website which will classify parishes into 4 groups, depending on their bTB testing regime. The 4 groups are defined by the testing interval, and are: annual, biennial, triennial and quadrennial. Cubs should be classified using this system and grouped with cubs from parishes of similar status. Given the vagaries of rehabilitating badger cubs, it is unlikely there will be an even distribution of cubs from these areas, requiring that cubs from different areas be mixed. In this case, cubs mixed from parishes with different classifications, should be treated according the greatest risk (most frequent testing interval), for example:

> A group of three cubs, one from a parish with a biennial test, one from a parish with a triennial test and one from a parish with a quadrennial test, should all be treated as if they came from a biennial test area.

Cubs should only be released in areas of similar bTB* status.

* The RSPCA, NFBG and SWWR recognise that the testing regime is based on cattle testing and therefore could be criticised for having made the assumption that this reflects the status of bTB in the

badger population. This is not the case, but lacking data on the presence of bTB in the badger population from different parts of the country, this is the only method we have for assessing the risk of infection in badger cubs from different areas. Some form of risk assessment is required at this early stage in order to help with grouping the cubs as they arrive at rehabilitation centres.

In the absence of this happening, it has to be accepted that the cubs are moved to the nearest suitable rearing centre, and, once clearing the triple testing regime, to be released in groups at sites as close as possible to their point of origin.

Chapter 6

Taking and testing of blood samples

Collection of blood

Location

Ideally blood should be taken from the jugular vein, but the cephalic vein can be used also. For reasons of safety general anaesthetic or sedation is required.

Volume

1–2 ml of blood to give 0.5–1.0 ml of serum.

Storage of blood sample

Blood can be held in a fridge for a short period. Allow to form a clot and spin to remove serum. It is best if a sample is taken and sent for testing at the beginning of the week to arrive by Thursday so that sample is not held up in the post or not processed before the weekend.

Laboratory for testing

Samples should be sent for Badger bTB ELISA serology to:

Veterinary Laboratories Agency
Langford House
Langford
Bristol
BS40 5DX

Tel: 01934 852421
Fax: 01934 852981

Testing regime

Badgers should be tested three times with ideally not less than 4 weeks between tests.

Contacts for advice on blood testing

Ms Elizabeth Mullineaux BVM+S, CertSHP, MRCVS
Quantock Veterinary Hospital
Quantock Terrace
The Drove
Bridgewater
Somerset
TA6 4BA

Tel: 01278 450080

Peter Budd B.V.Sc., MRCVS
RSPCA West Hatch
Wildlife Hospital
Taunton
Somerset
TA3 5RT

Tel: 01823 480156

Chapter 7

Caring for badgers

Introduction

Most badgers will need a period of recuperation once they have been to the vets. For specific information on badgers, vets should refer to the BSAVA manual of Wildlife Casualty Care. Adults will be returning to the location where they were found (see Chapter 3 – Adult badgers) and therefore will not need to be TB tested. Their convalescence should be as short as possible and they should be returned to the wild once they are fully fit. They should not come in contact with any other badger whilst in care.

Facilities to hold a sick or injured badger need to be secure (see chapter 9), bearing in mind that they are capable of breaking through a wooden door in one night. Your own health and safety should be a priority when dealing with all wild animals.

Initial care

Warmth

Warmth by way of a heat lamp will aid recuperation and indeed, can be life saving (ruby infra-red lamps allows you to see the animal easily but, as the glow is red, the animal is not affected by it.)

Bedding

Place the animal on a blanket to start with as it will make it easier to monitor if the badger passes urine or faeces. Keep a record of all details. See Form No 3. Keep the animal on clean blankets if it has any weeping wounds e.g. territorial bite wounds. More natural bedding such as straw, hay or shredded newspaper can be used once they are getting better.

Put the bedding in the back left or right corner of the pen. The next day, when it is time to clean out the pen, clean out the opposite corner, put fresh bedding and encourage the badger to move over to the clean corner. Then clean the corner that the badger has vacated. If you do this regularly the badger will soon understand the routine and will only have to move once whilst the pen is being cleaned. Try not to use metal buckets and shovels as these are noisy.

Badgers will vary tremendously in temperament but the quieter you are and more confidently you behave, the more the animal will trust you.

Do not give a sick or injured badger a box to go in to. This makes monitoring impossible and also administration of medication difficult and dangerous.

Feeding

Fresh water should be available at all times in a non tippable bowl

Feed cubs according to Chapter 8 - Cub rearing guidelines. Once weaned, they can be fed the same food items as adults. Adult badgers will eat dog food, dog biscuits, cat food, fruit, peanuts, fresh carrion and always offered clean water. The badgers will leave anything they do not like. Sugary foods are bad for their teeth.

Badgers that are not feeding can be encouraged to start by giving them natural Complan, honey and raw egg mixed into a soup but too much will cause diarrhoea. Otherwise tempt with small bits of cooked chicken and rice.

Give the food in the evening and do not be surprised if they do not feed for four or five days. If not feeding after 3 days substitute fresh water with liquid lectade to help support them. Once the badger starts to feed, return to fresh water for drinking.

Administering medication

Make sure that all medication is administered by injection. Badgers have a very strong sense of smell and will find hidden tablets, or may not be feeding. In order to administer injections, cover the badger with a blanket and inject in the rump.

Other issues

Seriously ill badgers that are not moving need to be moved from side to side (at least twice) on a regular basis within 24 hour periods.

A recovering badger will benefit from logs to claw and chew to stop boredom.

Chapter 8

Cub rearing

Introduction

Badger cubs need to be mixed with other badgers because they are social animals and need to be held in captivity for some months before being old enough to survive. Cubs can be very difficult to rear by their very nature and will show very few symptoms when ill. It is therefore quite important to keep records throughout their time of rearing for reference. Rearing is further complicated by the problems encountered when wishing to release badgers once old enough, and testing for bovine TB must be done as a matter of course to make sure that final releases are being done in a responsible manner.

Age

A badger cub is approximately 100 – 125 mm long at birth; its eyes and ears are totally sealed and it is only covered with a very fine, almost white hair The stripe on its head is hardly discernible at this age. Its weight is approximately 80 – 100 grams. Badger cubs scent mark from birth and the pushing out of anal glands particularly at feed times is normal and should not be misconstrued as constipation. The eyes and ears do not open until 5 weeks of age when the first milk teeth start to erupt. Mobility starts from this age, although shaky and uncoordinated. The cubs will come above ground when they are 8 – 10 weeks of age and this is when cubs are most likely to be found, having lost their mums. The hair is quite long by this stage and they are capable of biting. If incisor teeth are present, it may be possible at this age to wean rather than to start a fresh course of milk feeding.

Very young cubs

Any mammal taken from its mother within the first 48 hours of birth will miss colostrum, which is produced by the mother to pass on natural immunity to the young. Although gaining antibodies from the placenta, without this milk, the cub will be at a risk to infections that may be fatal. The use of a colostrum replacer may be of benefit and these are often available from agricultural feed suppliers. People keeping goats or sheep may have a supply of frozen colostrum available.

Care procedure

An orphaned cub is likely to be suffering from stress, cold and hunger. Warming is paramount but care must be taken if the cub is dehydrated, as this will aggravate the condition. Warming from beneath is better than overhead. The cub needs to be in an environment at around 70 – 80°F or 21 - 27°C and will settle better if covered. (Newborn cubs require even higher temperatures as they are unable to retain any body heat for the first few days.)

If a single cub, it will benefit from a teddy bear or hot water bottle wrapped in a towel as “company”. When more than one cub is being looked after mark them with Tippex or nail varnish so that each individual can be uniquely identified.

Dehydration can be diagnosed by very sunken eyes and by pinching of a fold of skin. If the skin remains tented then the cub is likely to be suffering severe dehydration. Feeding will sometimes rectify dehydration but it is recommended that a vet assesses the cub as soon as possible to check on its condition. If the cub has been on its own and the weather has been cold, it may have been chilled; the vet may suggest a routine antibiotic to combat any infection aggravated by stress, but this is not always necessary.

Record keeping

Keep a record of everything as you go along, as this will draw a picture of the progress of the animal in time and, in the event of having to go to the vet, if the cub deteriorates, it will help to assess the cub’s condition. (See forms 1, 2 and 3 attached.)

Form 1

This form records precise location details of where the cub has come from and details of the person who first found it. Remember that the badger is a protected species and can not be taken into captivity without a licence unless it is for welfare reasons – you may need to explain why this animal is in your possession.

Date and time of arrival: straightforward.

Treatment prior to admission: Details of any action taken prior to admission is important. If the badger has come from another vet, you will need to know of any antibiotics administered or routines carried out, so that your own vet does not administer anything incompatible with previous medication.

Reason for admission: Try and find out as much as possible how and why the cub was picked up. Again, this may help in diagnosing future problems.

Daily treatment: Write any advice given to you by a vet on the form rather than committing it to memory – you have a baby now, and you may forget things.

End results: a happy ending, we hope, fill it in at the finish of rearing, as this will be useful information in future years.

Form 2

This form is mainly for badger cubs needing to be bottle-fed. Each day the cub should be weighed at the same time of day to see how it is progressing. Ideally, weigh before the first feed each morning. Fill in each square for each feed with the amount taken plus symbols to record if they have passed urine (u) or faeces (f). The daily total is a good idea as sometimes the amount that they take is erratic but over all it should be the same or slightly more each day. Comments should be literally anything. Maybe the cubs are more fretful during the feed or sleepy, etc. It is important to keep a record.

Form 3

More appropriate for older cubs that are weaned and being given food. Slowly you can step the food up but the column showing amount taken can also tell you things. Food left at the end of a day on a

regular basis may indicate that this badger does not like that particular food - try something else. When several cubs are mixed together it is still very important to weigh every few days, as it is impossible, unless you are lucky enough to have cameras in your pens, to tell if all the cubs are feeding.

Process on arrival

Removal of parasites

The cub is likely to have lice, ticks or biting mites. Frontline spray (available from vets) can be used and is applied between the shoulder blades directly onto the skin and is suitable for cubs over 2 days old. Large ticks are taken off with tweezers, first putting methylated spirits on the head of the tick to make it release. Washing up liquid can be used as an alternative or tick tweezers. Care should be taken as to the product used to remove parasites, in case of a detrimental reaction, as parasites are not so disagreeable to the cub as they are to you. Another method is to work through the fur of the cub with finger and thumbs, squeezing any fleas to be found in the coat. This is a more natural way of removing fleas and will be accepted as maternal grooming therefore cementing relationship between cub and carer. However, contamination of the cub's bedding and environment with flea eggs and larvae should be considered.

Inspection

Check the cub thoroughly working from head to rump methodically without causing too much stress. Weigh the cub and then place it in a box with heat. Unfrayed towels can be used as bedding. Fleece blankets are good and are available from pet shops, as these allow any moisture to go through to bedding below, so keeping the cub dry. Torn up newspaper can be used which is clean, warm and easily replaced. As mentioned before, the cub will probably settle quicker if it is covered.

Reaction to noise

While the eyes and ears are closed, "normal" noise will not affect them, but older cubs may react to household noises although they are usually very adaptable. If a cub is very vocal and cannot be placated, it is likely that the cub is unwell and needs veterinary attention. (Older cubs may not vocalise but bite excessively.)

Information for vets

For specific information on badgers, vets should refer to the BSAVA manual of Wildlife Casualty Care.

Feeding

Liquid Lectade (preferable to powder as less wasteful and can be kept for long periods) is available from the vets, is usually fed for the first 24 hours. This allows the gut to be flushed through, allows the digestive system to adjust and prepares it for a new kind of milk.

Complan has been used for cubs, mixed at a ration of 1 part Complan to 3 water but more recently Esbilac, an American milk powder for puppies available from vets, which has proved to be much more suitable and, incidentally, can be used for all baby mammals. Esbilac is used at half strength and has been found to be very successful. Lactol, goat's milk and lamb milk powder have also been used to rear cubs although cow's milk is not recommended. Do not change brands of milk unless there has been adverse reaction. If a change is needed then it is better to go through the process of flushing the system through with Lectade rather than to change directly from one milk to another.

Bottle feeding

Cubs that were only 1 – 2 days old have been very successfully hand-reared but such young cubs would have to be fed little and often throughout 24 hours (e.g. every hour). A rounded tummy will tell if the cub has taken enough. As the cub grows, feeds can be reduced however small cubs will need to be fed every three hours but they can go for a period of six hours once they weigh 500 – 600 grams - this will allow the carer some sleep!

Abidec vitamin drops (available from chemists) can be added in the first feed of each day. A pinch of Vetrumex which aids gut flora (available from farming suppliers) can be added at the same time.

If they are under 400 grams, feed the cub using a 1 ml syringe with a small teat attached to it from a small Cat-Lac bottle set available from pet shops. Although it is a nuisance to have to keep filling the syringe, by using a 1 ml syringe the cub can pull in the plunger on its own by its sucking action. Small cubs will sometimes go on to a babies bottle but care must be taken that you do not mistake all the sucking for actual consumption and they will eventually tire from the sucking sometimes before they have actually had their fill. It is useful to listen to the cub's back at each feed to check for any inhalation of milk that will cause pneumonia.

Feeds of 15 ml for a cub weighing 200 grams will increase to feeds of up to 100 ml for five week old cubs. Do not worry if the feeds are more or less when you start, as every cub is different and to worry about how much they are taking will only make feeding a stressful time.

Badger cubs can be very difficult to feed. The first thing to do is to "toilet" them. The mother would normally lick the cub's genitals to stimulate them to empty their bowels and bladder. This will in turn create a sucking reaction in the cub, which should then go on to feed. Kitchen roll covered by a nappy wipe can be used to stimulate the cubs to pass motions and this also absorbs the urine and faeces. The toileting process will create a natural reaction for the cub to push out its anal glands in order to musk and scent its mother. This must not be mistaken for constipation. The faeces are usually dark brown but will turn to a soft yellow motion with milk feeds. The faeces has been described it as a toothpaste consistency! Loose faeces can be corrected by slightly diluting the feed and sugar can be used as a laxative but remember there will be a natural constipation in a very small cub.

Once toileted, they will settle to feed. Get them in a comfortable position, they usually like to be able to press their front paws against something so that they can paddle, an action that would normally stimulate the mother's milk flow.

Sometimes a cub will clamp on the teat. Do not read this as the cub not being hungry: they will also comfort suck a lot without actually taking anything down. Feeding is a slow job and must be combined with stroking and comforting to encourage confidence. If the cub really is difficult and stressed, refusing to take the milk, then put him down – give him an hour and try again – but it is the same as a baby: you should be calling the tune. Likewise it is easy to worry that you have the wrong size teat. If they have taken from the teat once, do not change to another even if they keep refusing it. The more you change the teat in shape and size, the more confused the cub will become. Use the first size teat for new-born babies, which is nice and soft. The hole size is ample for the milk, DO NOT enlarge it.

Inhalation of milk by feeding too fast will cause pneumonia and before you know it the cub will be dead. Once the teat starts to wear, start to soften a new one by soaking in boiling water, as the cubs will find a new teat very different from the old one. Winding of cubs after their feed helps them settle.

All equipment must be kept sterile much the same as you would for a human baby. Obviously if cubs are together the bottles, etc., can be used from one to the other without sterilising during a feed, as

they have contact anyway so any germs or infections will be duly shared. Obviously the equipment still needs to be sterilised between feeds.

Wash your hands before and after feeding and make sure that your clothes are clean. A clean animal is a healthy animal.

Even at bottle feeding stage it is useful to record your cub with the central register held at the NFBG, SWWR or RSPCA. This allows the process of organising cubs to be mixed as soon as possible when old enough and works towards the aim of making social groups of appropriate sexes for final release.

Weaning

From the age of 8 to 10 weeks the cubs will show an interest in solid food. Now is the real hard work as cubs do not usually recognise bowls and will be far happier grubbing stuff from the floor. Offer small amounts of the suggested foods at first.

1st stage

Milupa, Weetabix, creamed rice, scrambled eggs, yoghurt, porridge, custard cream biscuits.

2nd stage

Minced meat, minced tripe, puppy food, sausages, cooked chicken (no bones), dead chicks, peanut butter sandwiches, grapes, sunflower seeds, cheese, kitchen scraps.

Weetabix, etc., may be soaked in meat stock rather than milk because if orphaned at the time of weaning milk-based food will lead to hair loss in some cubs. If, however, a cub is brought in very ill, it may improve quicker if allowed to return to a milk diet; but where cubs have simply lost their mums, there is no point in delaying the process of weaning.

Indoor weaning

Once cubs can move around they will settle for one or two places that they will use as a dung pit. These can be accommodated with newspaper held down with bricks. Litter trays end up in a horrendous mess as the cub will merely dig everything out. Stringent cleaning with disinfectants that are not too strong will maintain a healthy surrounding. If the cubs are stopped from using their original chosen place for a toilet, they will be concerned and suffer some discomfort before they will concede to using an alternative area. They can be encouraged to use a new site not too far away, e.g. just outside the door, by putting dung there from the old site, and moving them smartly there a few times when they go to the old site.

Infection and disease

It is useful to have a period of isolation prior to mixing with other cubs to allow time for any infection that may be incubating in a new cub to be evident. During this period of separation, barrier nursing should be carried out or, alternatively, a different person should care for the cub until clear.

In all handling of badger cubs, their environment must protect them from outside infection by sensible hygiene and ideally, once in outside enclosures, stand off wires at the base of fencing to stop contact with any resident badger population. Vaccination with dead vaccine (Duphar p69) soon after arrival is carried out at some centres once the cub is healthy. However, routine vaccination against parvo virus and distemper is worth considering - discuss these measures with your vet.

Homeopathic options are always worth considering.

Puncture wounds often encountered where cubs are attacked by other badgers will need flushing twice a day with a syringe of cleansing agent to stop the wound from healing until all the infection has drained. If a course of antibiotics is given to weaned cubs, they benefit from a course of live yoghurt or probiotic (e.g. Vetrimex) in their diet to renew the gut flora.

Hair loss

This seems to happen for no particular reason and is often put down to diet although it may be stress related. Cubs have been known to go completely bald soon after arrival and others when their surroundings have changed, but their diet has remained the same. The problem is not fatal and will soon resolve itself by the cub firstly growing a new, very light coat of fur, which will soon change to the usual colour.

Diarrhoea

If the cub is on a milk diet, withdraw the milk entirely, and put on the electrolyte fluid (e.g. Lectade) for 24 hours. Then a solution of half milk and electrolyte fluid should be given for a further 24 hours before returning to the usual consistency of milk.

Weaned cubs should be given a more fluid diet, electrolytes and flavoured baby rice (e.g. Milupa) and control diet (white chicken, etc.). If problems persist, consult your vet.

Inability to feed

If weaned cubs are so ill that they are unable to feed, they can sometimes be tempted with either a mixture of original Complan, honey and egg, or liquid food such as Hill's A/D Science Diet made into a puree. (This can also be offered to adult badgers that are very ill.) Syringe feeding is not as difficult as it may sound, even with adults, and with loss of body fluids (particularly due to wounds) it may be the only option that will save the animal, other than placing them on a drip.

Anaesthetics

Anaesthetics must only be prescribed by a veterinary surgeon. For Further guidance, vets should refer to the BSAVA manual of Wildlife Casualty Care.

Finally

Remember, the way a cub is reared will affect the viability of the animal. This rearing method is aimed for a successful release of the cub back in to the wild. Should you require further advice, please see the contact list.

Chapter 9

Rehabilitation unit facilities

Construction of facilities

Licensing

A licence is not required for care of a badger that is intended for release back into the wild.

Planning permission

Advice needs to be sought from the local planning authority. This will be dependent on the size and design of the pen, the location and various other factors.

Area required

Adult badgers

An injured badger needs an area that is small enough to avoid it injuring itself. It also needs space to allow a carer to be safely within the area as well to allow for cleaning and administration of drugs. A minimum of 2 metres square per badger is advised.

More space is required for the purposes of assessing casualty prior to release, e.g. an enclosed corridor

No adult badger should be mixed or allowed contact with other badgers whilst in care.

Badger cubs

An injured badger cub needs an area that is small enough to avoid it injuring itself. A minimum of 2 square metres per badger is advised.

Where cub groups are being integrated together and will only be in the pen for a short time a minimum of 4 m x 4 m is needed.

If badgers are to be kept for a longer time the pen should be as large as possible, e.g. minimum of 25 metres square. Every effort should be made for the group to be released by latest November but the security of the pen will be tested from August onwards.

Construction of pens

Galvanised wire mesh should be used, having a wire diameter no less than 3 mm and hole size of 25 mm or 50 mm. Mesh of this type can be obtained from a local steel stockist or manufacturer who will often donate this at a special rate.

The pen needs either a roof, or the walls need an overhang. An extra precaution could be electric wire on the inside of the fence.

If a chamber is provided, note that an underground chamber is very difficult to clean and to recapture the cubs. Any chamber should be accessible for easy cleaning, observation and recapture of the animals.

A chamber or other housing should be about 1 metre square. Badgers sleep almost piled on top of each other and a small chamber has the advantage of staying warmer.

There are several options for the construction of the flooring for a pen.

A floor constructed from concrete or tiles is easiest for cleaning. A soil base is more natural but can become very muddy and hard to clean out. A concrete base with wood chip or straw on it can achieve a possible half way measure

It is recommended that to prevent escapes, wire mesh walls should extend 1 metre into the ground and 1 metre at a 90° degree angle back into the pen. There is still a need to monitor. Total security can be obtained by burying mesh under the whole of the floor of the rehabilitation pen.

Wooden posts may be used for the pen frame, but these are less durable than metal posts. Wire mesh should be fixed to the inside of the frame posts as this will give a longer pen life. Badgers will chew the posts if the mesh is fixed on the outside.

Badger cubs can be grouped together in the same pen according to size, providing this is controlled according to their cattle bTB test status, the TB status of the area they were from, and other health status.

Where more than one group is formed, they should not be allowed contact with other groups or individual badgers.

Contact with local wild badgers should be avoided by the installation of suitable electrified fencing outside the enclosure where appropriate.

The pen and chamber should be cleaned out every day if a concrete or tile floor is used, otherwise as necessary.

Logs, pipes, water, straw, should be put in the pen to keep the badgers occupied. Badgers are playful and these things make their environment more interesting.

Solid fencing to the height of 1 metre (above the eye line of the badger) will often deter attempts to dig out. However, being able to see out gives a semblance of a larger pen. We recommend that the security and the size of the pen should determine which design is used.

Pens and enclosures should be appropriately cleaned during and after use. Specialists advise on suitable cleaning agents and methods should be obtained from your local veterinarian.

Chapter 10

Criteria for badger release sites

Protocol for finding and selecting release sites

Badgers are territorial animals and it is essential to clearly establish that the prospective release site is not part of an existing territory. This takes a lot of very thorough and time consuming survey work over a long period of time, ideally a full year.

Until now, most badger releases have used areas where badgers have not been present, due to historical persecution, DEFRA operations or other reasons. The reasons for this are quite simple in that badgers are territorial animals and it has been thought that releasing naive cubs into an existing territory would be poor welfare. However, the rise in badger populations and the increased need for rehabilitators to be responsible in the light of TB means that alternatives need to be found. Therefore a twin approach is suggested:

- Cubs are released in new areas as before. Group sizes can be large and the idea is for cubs to establish a new group in the area.
- Cubs are released in small groups of 3 or 4 in areas where badgers are known to be present. The cubs are then expected to mix with local groups. Unfortunately, very little is known about badger cub dispersal. Long term studies from Wytham Woods in Oxfordshire, and Woodchester Park in Gloucestershire have been unable to determine how badgers disperse, but have identified that they do. This type of release is important especially in the South West where TB is more frequently a complicating factor in badger rehabilitation.

When looking for release sites, both methods could be considered. This means that sites with badgers are not automatically excluded, but will require work to determine the extent of badger activity.

Members of badger groups may have an idea of the active setts in their area and of areas where badgers may not be present. However, these notes are to guide you through the process of finding a suitable site that can be used for a release of badger cub groups.

Finding sites

The first problem is knowing where to look. There are two ways of approaching this, actively and passively.

Active search for potential sites

The members of a local badger group will have information on as many setts in their area as possible, but they may not be aware of the size of area that these badgers cover as part of their range, and it could be that there are gaps between territories which could have potential. Bait marking surveys will help you to determine the boundaries between neighbouring badger groups and so spot gaps in the population. However, badgers will move beyond these boundaries, particularly at different times of year, and this must be taken into account.

To conduct a bait marking survey, you first need permission from all landowners on whose land you will be surveying. Try to get permission from as many people as possible, although the survey will still be useful, even if you cannot obtain access to all areas. Do not trespass.

You will then need plenty of peanuts, treacle, plastic pellets of lots of different colours, as used by the plastics industry for injection moulding, and lots of volunteers. Mix the treacle with the peanuts and then stir in a quantity of plastic pellets, using a different colour for each sett you wish to survey. The plastic pellets are harmless to the badgers, and when eaten, will pass through their digestive system and be excreted at latrines.

Place this mixture at different points around the entrances to the sett, and place some stones over the bait to prevent it being eaten by other animals.

After baiting the setts for a week, you then start your survey, by looking in all the areas where you would expect to find latrines, e.g. in hedgerows, along runs, or near the sett. Start in the vicinity of each sett and move outwards.

Mark the location of the latrine on large-scale maps, and note what colour pellets you find and an approximate quantity as well! Also note how big the latrine is and if there are pits or piles of dung without pellets. These could be from neighbouring setts that you were unaware of, or are not surveying.

Place all the latrines found on one big map of the area, and draw a line from the latrine to the sett, using a different colour for each sett.

This will give you an idea of how big the territories are and which boundaries are shared by neighbouring groups. Bait marking surveys are best done in spring when the vegetation is low, but could be attempted later if you are adept at spotting badger latrines in dense cover.

Once you have completed the survey, you should be able to spot any areas where badgers are not present. You can then ask yourself, why? It may be that there is a sett you don't know about, or that the habitat is unsuitable. It is important to know why badgers are absent from the site before you release another group.

Passive search for potential sites

Another way to identify sites is to wait for people to offer them to you. You can be proactive in this endeavour by placing articles in local or national magazines or other media. It also pays to network; talk to different people, especially landowners, at conferences or shows. If people know what you do, then they might contact you if they think they can be of use. If somebody offers you a site, try to take down as much detail as you can about the site. The first question is do they have badgers already. If they do, then it might be worth considering as a dispersal site, and it will be useful for the local badger group to have a record of the site. If they don't have badgers, ask as many questions as you can to try and determine why; what available habitat is there, were there badgers in the past, what is present on the neighbouring farms. If the site sounds suitable, you should then make an appointment to go and visit.

Checks to be made on potential sites

Presence or absence of badgers

This can be done with surveys and/or discussion with landowners and badger groups, Wildlife Trusts. They may also be able to provide some history of badgers at that site, to find out why they may not be there at present.

The presence of badgers on the site does not necessarily preclude releasing cubs on site. However, to release a small group of cubs for dispersal, you need to find an area away from the main badger activity for the release, so that you do not disturb the local badgers and allow time for the released ones to settle in before they are found by the other badgers.

Landowners and land use

You will need to discuss the potential release with the prospective landowner in detail. Find out from them about their neighbours and how they might feel about the potential release. Ask the landowner you are dealing with to discuss it with his neighbours to find out how they feel.

Presence of an adequate food supply

It is fairly easy to make a general assessment of the food value of an area. This can be backed up with local knowledge of whether badgers have ever lived in the area before and if so, why they had disappeared. Worm counts can be carried out to be certain.

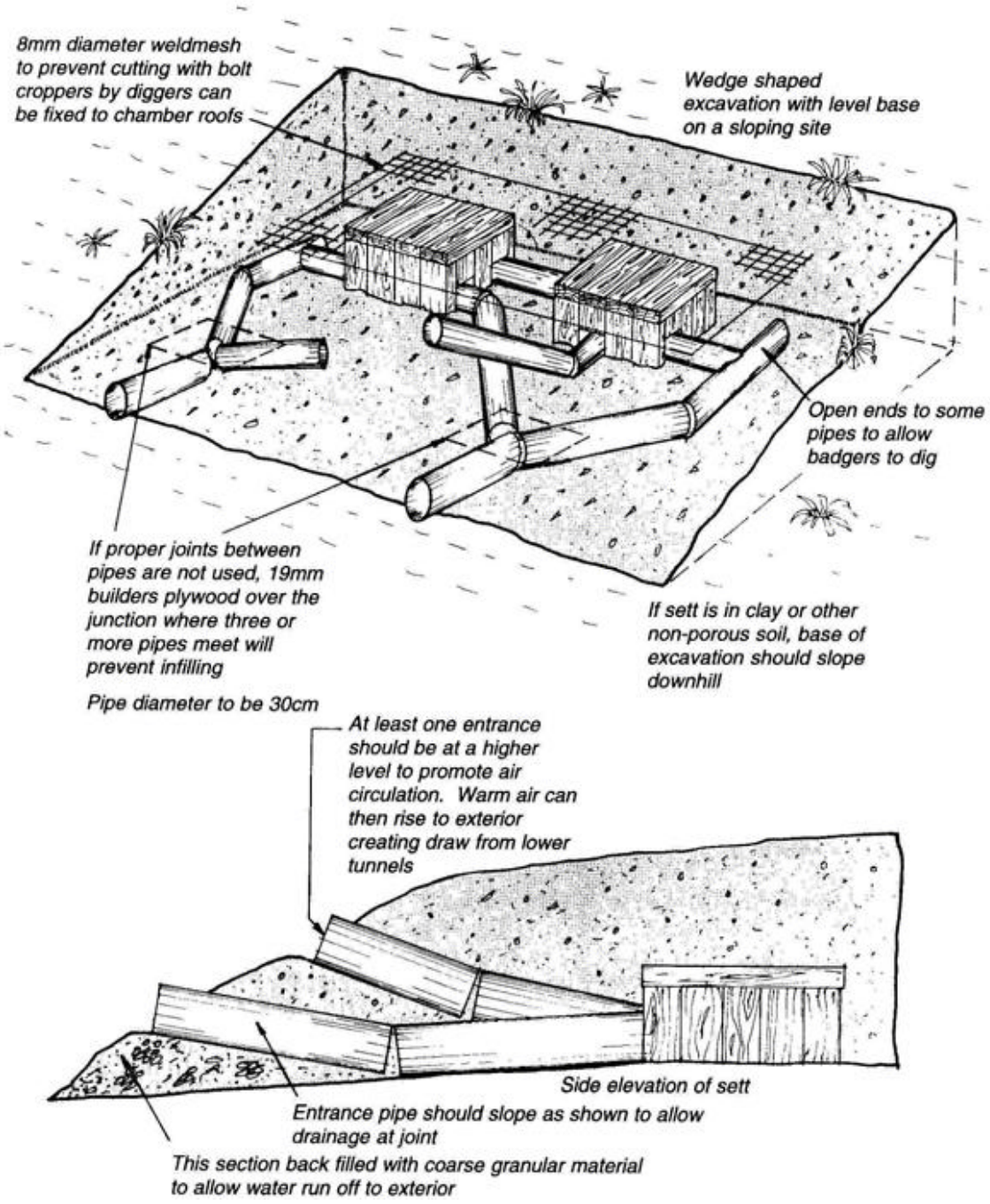
Presence of a permanent water supply

It is desirable that there is a source of water all year round, including in times of drought.

Presence of a suitable sett

A suitable sett must be available for the badgers to be released into. This has to be properly prepared with a suitable release compound to confine the badgers during the initial introduction. The use of an artificial sett for this purpose enables better control of the exact release location and is easier to adapt for the initial confinement. When releasing into a natural sett it is necessary to construct a large release pen around the whole sett. The sett for the release may need to be fenced possibly with an electric rabbit fence, with a perimeter of up to 150 m. If releasing into an artificial sett it may only be necessary to place a small release pen around one entrance and mesh over the other. This and other methods of containment (see Chapter 11) should therefore be considered when evaluating the site.

Figure 3. An artificial badger sett



Safety from persecution

If there is any danger of persecution, all naturally occurring setts in the area should be protected well before the release, and the release sett should be of sound and secure construction. A badger bunker is ideal!

Further safety from persecution can be obtained by careful site selection. Proximity to a residence or a public footpath can be a bonus. If terrier men think there is a risk of their presence being detected, they are less likely to interfere with the badgers. A site where access is limited or controlled is even better.

All of the surrounding area must be thoroughly checked and all landowners, tenants and gamekeepers attitudes checked out. One potential site, owned by a very keen farmer, with all conditions looking ideal, was spoiled by a shoot that used a large wood two fields away, which was a persistent user of snares.

Safety from roads

The proposed site must be well away from the main cause of badger deaths - roads.

Occupancy of artificial sett

One way of being sure that there are no badgers in the area is to construct an artificial sett for the release at least a year in advance. If there are badgers in the area they will explore the artificial sett and make their presence known in that time. This backs up the findings of the survey work.

Chapter 11

Release of badger cub groups

General principles

Landowners and land use

You will need to discuss the potential release with the prospective landowner in detail. Find out from them about their neighbours and how they might feel about the potential release. Ask the landowner you are dealing with to discuss it with his neighbours to find out how they feel.

Presence of an adequate food supply

It is fairly easy to make a general assessment of the food value of an area. This can be backed up with local knowledge of whether badgers have ever lived in the area before and if so, why they had disappeared. Worm counts can be carried out to be certain.

Detailed methods

This section describes a method for releasing badger cub groups that has been used by the staff from the RSPCA Centre at West Hatch and has been shown to work well. Slight variations will be encountered but the principles have stood the test of time.

Composition of group

A group ready for release into a new area consists of from 5 to 12 cubs, preferably of a good sex ratio, i.e. more sows than boars. If releasing a group of cubs at a dispersal site, the group size should be 3 to 4.

Grouping of cubs prior to release

Ideally, a group is set up by the time the cubs are about 3-4 months old and fully weaned. Once well established as a fairly coherent unit, they are moved to a large 30 metre (100') square enclosure (at West Hatch, these are grassed). These enclosures are sited away from human activity to limit the risk of cubs becoming tame or habituated to humans in any way. From here on, human contact is kept to the bare minimum to allow the group to develop as a social unit. The badgers are kept within this enclosure for up to four months, but ideally only three months. This time enables the cubs to cement their bonds as a group, to forage normally and to dig. Routine husbandry tasks, such as feeding and watering, should be done at irregular times so the badgers are not habituated to a routine. When feeding, feed after dusk, scattering some food, but provide some under stones or inverted boxes to prevent birds and rats removing it.

After three months, around mid August, the cubs begin to "test" the enclosure fencing, trying to escape. Additional digging and climbing activity indicates that it is time they were released.

Choice of release site

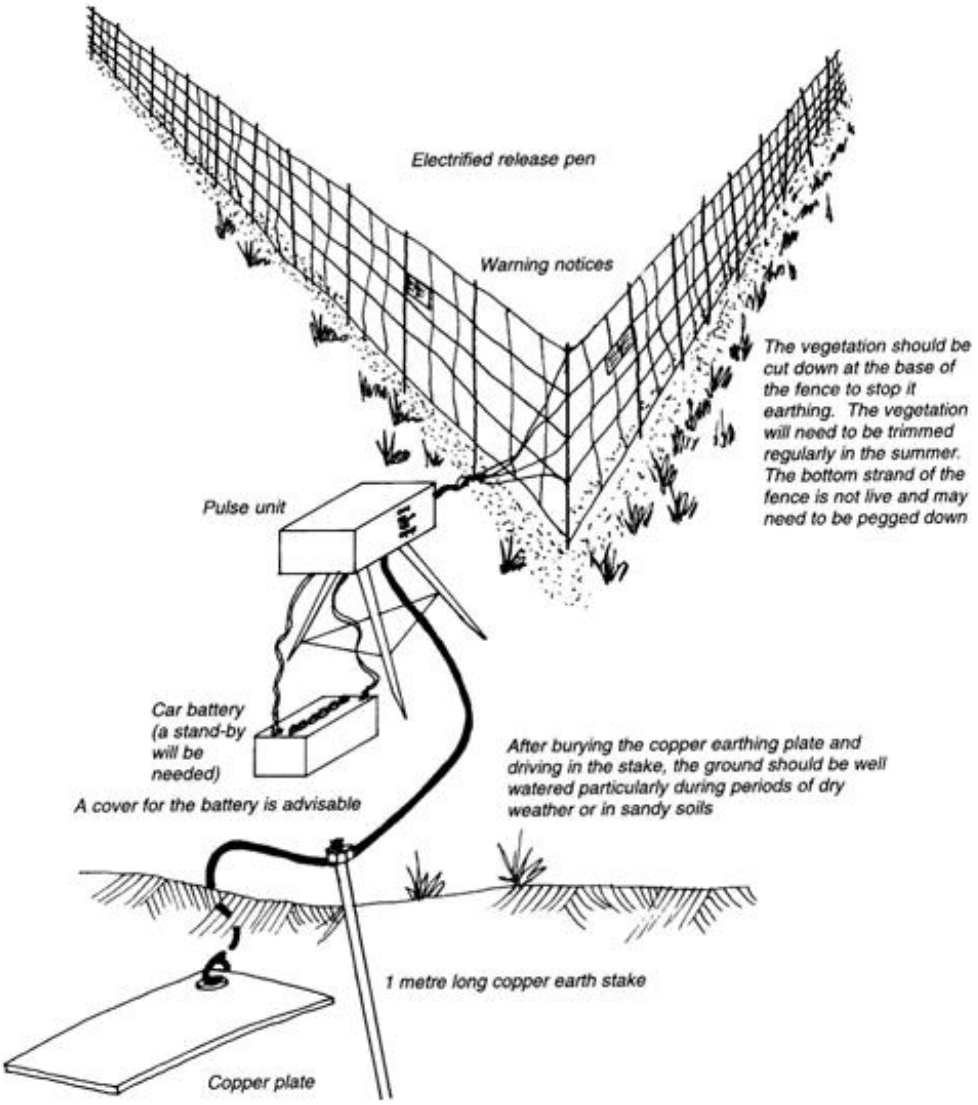
The chosen release site will previously have undergone a full survey to determine the local badger status and attitudes of landowners towards badgers. Providing our requirements are met the release enclosure is constructed.

A release site should have suitable terrain and soil to allow the badgers to dig setts. A deserted sett may be used if suitable, or an artificial sett built, from either timber and cement, or straw bales.

Release site enclosure

The enclosure perimeter is electrified rabbit netting, sometimes with a single strand of electric fencing set inside approximately 150 mm high and 150 mm from the net as an added precaution. The size of the enclosure is dictated by the numbers of badgers in the group and by the terrain but is never less than 150 metres total perimeter, i.e. 3 rolls of netting. This is attached to an electric fence of a type commonly used for poultry, sheep, cattle and horses, which is powered by a 12 volt car battery. No adverse reactions by the badgers to this type of fencing have been observed.

Figure 4. Badger release pen



Ideally, the fencing used should conform to British Standard 2632. This includes having yellow warning notices on the fence to warn people that it is live. This is the case, even if the fence is on private property. If it is near a path, it should be set back. If you should need to cross a public right of way, it should not obstruct it, unless you provide a means for people to climb over it safely.

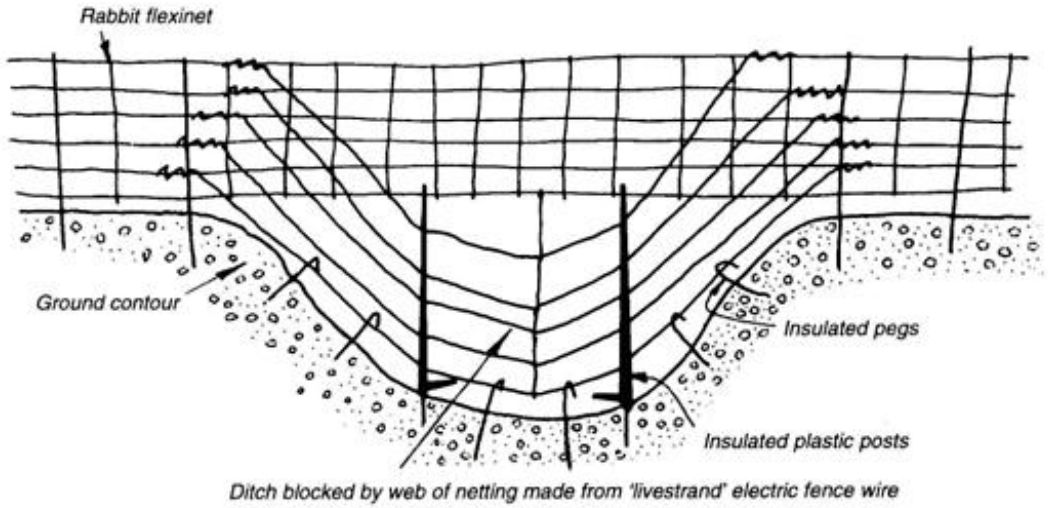
Rabbit netting is by far the best fence to use for a pre-release enclosure. Make sure it is rigid and secure when it is erected, using additional electric fencing stakes if necessary. Secure the bottom line, which is not live (usually black), using tent pegs or similar. This is to stop badgers from squeezing under it. In exposed areas the stakes may need guy ropes to ensure they do not blow over. If the fence needs to span a ditch, then stretch it taut over the ditch and use stakes and wire strands to make a net in the ditch below (figure 5).

There are many units available to energise the fence, which can use batteries or mains power. The batteries for powering fences should be leisure batteries (used for caravans and boats) rather than standard car batteries, as these batteries are designed to discharge current over a long period of time, whereas car batteries are not. As a result, leisure batteries will require charging at less frequent intervals. There are obvious advantages in using mains power units, but these are restricted to where mains power is readily accessible. Electric fencing equipment is readily available at agricultural suppliers or at suppliers such as http://www.electricfencing.co.uk/index_40.asp or http://www.gallagher.co.uk .

In order to generate an effective pulse, ensure that the energiser is well earthed. This is easily done using a long copper rod or plate that is driven into the soil. Many energisers come set on metal stands which are designed to provide the earth. Some soils may require the area around the conductor to be wet, especially on dry soils and during dry periods of weather. In addition is essential to ensure that vegetation is not earthing the wire, or there may not be enough current to deter the badgers from escaping.

To test the fence, testers are commercially available. Alternatively, walk the length of the fence either during the day, listening for faint clicks, or during darkness to look for sparks, where the fence is shorting. The energiser will also click when generating a pulse. It is advisable to have two batteries, one in use and a second battery, fully charged on standby. The first battery can then be recharged when the second one is fitted. Batteries should last around seven days, depending on conditions such as length of fence, vegetation and even weather.

Figure 5. Electrified flexinet adapted for spanning a ditch



Care and monitoring in enclosure

Food is provided regularly as it would have been in “normal” captivity and a shallow water container should also be provided, with fresh water every day. A daily check is made on the perimeter fencing and to ensure that the battery is adequately charged to maintain its integrity.

Release

Once the badgers are ready for release, up to 8 weeks later, the fence is switched off and a section is opened to allow the badgers to explore outside. It should not be removed immediately as this may cause too great a disturbance to the badgers. Food continues to be placed within the release enclosure area to provide support until the badgers are totally independent. Landowners should be encouraged not to continue feeding the badgers, but they should be aware of times when the badgers may need supplementary feeding.

Chapter 12

Transportation and release

Issues for consideration

There are several important issues for consideration when moving badgers long distances, either transporting cubs to mix with other cubs, or transporting animals to release sites. These include the welfare of the animal(s) being moved, the possibility of disease translocation and the issue of genetic purity.

Adult badgers

When releasing a badger back to where it was found, consideration must be given to the method of transportation, travelling container, distance and time of day for the release.

Once caught for release, the badger should be contained in a secure, well ventilated container that is covered to reduce stress.

The badger should be transported as quickly and quietly as possible to its release site.

The badger should be released at the exact location that it was found. (See Chapter 3, Adult badgers.) This should be from dusk onwards. In built-up locations, or near busy roads, it is recommended that the release should be timed for nights that are not busy and erring towards midnight through to dawn.

On arrival, place the cage on the ground still covered and allow the badger time to recognise its surroundings. Then remove cover. (The badger will usually react by trying to get out of the cage.) Open cage and allow the badger to leave the container in its own time.

A badger should not be emptied from a cage in to a sett entrance unless it is known to belong to that sett.

Badger cub groups

Badger cub groups should be transported to their final release sites once they have received their third clear blood test and passed a health check. This may mean that they have been captured from enclosures and held in pens prior to movement. This process should be carried out with as few disturbed sleep patterns as possible.

It is recommended that badger cubs are transported in containers usually holding only two animals (depending on size). With several boxes, a ventilated vehicle would be best and travelling carried out early morning will mean the badgers are ready to sleep and temperatures, especially during the summer, will not be too high during transportation.

By placing the badgers in to their new site in the morning, the badgers will have time to sleep at their new location and settle before their first new forays in the evening.

Distance, of and therefore time spent travelling from care location to release site should be kept to the minimum for disease, genetic and welfare reasons.

The vehicles used to transport badgers should ideally have air conditioning. The temperature should be maintained between 10 and 26 degrees Celsius to comply with legal requirements for transporting animals

Badgers, if correctly transported, travel well and settle in cages for long periods of time. However the length of time badgers are kept in cages and the distances travelled to a release site should be as short as possible.

Chapter 13

Conclusion

By following this protocol, the NFBG, RSPCA, and SWWR will be acting, and be seen to be acting, in a responsible manner. All procedures outlined in this protocol are totally dependent on there being release sites available for all cubs in care and antigen available for bTB testing.

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Email: enquiries@nfbg.org.uk

RSPCA – Headquarters Wildlife Dept
Wilberforce Way
Southwater
Horsham
West Sussex
RH13 9RS

Contact Person: Adam Grogan – Wildlife Rehabilitation Coordinator

Tel No: 0870 754 0205
Fax No: 0870 753 0042
Email: AGROGAN@rspca.org.uk

Secret World Wildlife Rescue
New Road
Highbridge
Somerset
TA9 3PZ

Contact Person: Pauline Kidner – Rehabilitator & Carers
Colin Seddon – Rehabilitator & Release Officer

Tel No: 01278 783250
Fax No: 01278 793109
Email: enquiries@secretworld.org

Conservation

National Federation of Badger Groups
2B Inworth Street
London
SW11 3EP

Contact person: Dr Elaine King – Chief Executive

Tel No: 020 7228 6444
Fax: No: 020 7228 6555
Email: enquiries@nfbg.org.uk

Department for Environment, Food and Rural Affairs (DEFRA)

ELISA testing:

Veterinary Laboratories Agency
Langford House
Langford
Bristol
BS40 5DX

Tel No: 01934 852421

Veterinary Advice:

Central Veterinary Laboratory
New Haw
Addlestone
Surrey
KT15 2NB

Tel No: 01923 357335

Licences

Advice

Secret World Wildlife Rescue
New Road
Highbridge
Somerset TA9 3PZ

Contact person: Colin Seddon – Licence Advisor

Tel No: 01278 783250
Fax No: 01278 793109
Email: enquiries@secretworld.org

Licensing bodies

Countryside Council for Wales
Maes y Ffynnon
Ffordd
Penrhos
Bangor
Gwynedd
LL57 2DN

Tel No: 0845 1306 229
Fax No: 01248 355782
Email: enquiries@ccw.gov.uk

English Nature
Northminster House
Peterborough
PE1 1UA

Tel No: 01733 455000
Fax No: 01733 568834
Email: enquiries@english-nature.org.uk

Scottish Natural Heritage
12 Hope Terrace
Edinburgh EH9 2AS

Tel No: 0131 447 4784
Fax No: 0131 446 2277

Rehabilitation veterinary advice

Quantock Veterinary Hospital
Quantock Terrace
The Drove
Bridgwater
Somerset
TA6 4BA

Contact person: Ms Elizabeth Mullineaux BVM+S, CertSHP, MRCVS

Tel No: 01278 450080
Fax No: 01278 444963
Email: lizmullineaux@hotmail.com

RSPCA West Hatch Wildlife Hospital
West Hatch
Taunton
Somerset
TA3 5RT

Contact person: Peter Budd B.V.Sc., MRCVS

Tel No : 01823 480156

Annex A

Health and Safety responsibilities

Introduction

Organisations involved in the rehabilitation and release of badgers have legal responsibilities to ensure the health and safety of their employees, and others (e.g. visitors or volunteers) who make be exposed to risks from their work activities. These general duties are outlined in the Health and Safety at Work etc Act 1974. The Management of Health and Safety at Work Regulations outlines in further detail the duties in respect of setting up the structures necessary to manage risks to health and safety resulting from work activities.

There is also some additional risk specific legislation (e.g. the Control of Substances Hazardous to Health Regulations, the Manual Handling Regulations etc), which duty holders must adopt when appropriate.

This comprehensive legal framework is in place to require employers to assess all the risks to health and safety (trips and falls, lifting, biting and scratching wounds, exposure to chemical and biological agents etc) and when appropriate introduce suitable and sufficient control measures. Other duties include the need to inform employees of the results of any risk assessments and provide instruction and training when appropriate.

Zoonotic risks

Most animals, including badgers, carry a range of diseases which can also affect humans. These diseases are known as *zoonoses*, and if you work with animals your health may be at risk from them. Although some of these diseases (e.g. anthrax, brucellosis and rabies) are no longer common in the UK, good occupational hygiene practices will protect against them, as well as other more common zoonoses such as leptospirosis, orf or ringworm.

Diseases transmitted from animals to humans can also affect visitors to your centres - especially children or the elderly, who may suffer more than other people. These illnesses include those resulting from infection with the *E coli* O157 and *cryptosporidium* organisms. If you open your centre to the public you need to assess all the risks associated with zoonotic infections.

Legal requirements

Zoonoses are caused by micro-organisms, which are subject to the Control of Substances Hazardous to Health Regulations (COSHH) 1999. COSHH requires employers and self-employed people to:

- assess the risks to health from work activities which involve a hazardous substance (e.g. a micro-organism);

- prevent or, where this is not reasonably practicable, adequately control exposure to the hazardous substances;
- introduce and maintain control measures;
- inform, instruct and train employees about the risks and precautions to be taken.

It is good practice to involve employees, and their representatives, in an assessment: they often have personal experience of the work and the risk and may be able to offer common-sense ways of controlling it.

If you are an employer, you should ask potential or new employees about any existing health or other conditions they have which may worsen the effects of contracting a zoonosis, or which may mean that they are more likely to contract one. For example, people without a spleen are very vulnerable to infection, and employers should consider carefully whether they ask such people to work with animals; pregnant women risk abortion if they are infected with the organism causing enzootic abortion of ewes.

Precautions

This section advises on simple, general precautions to reduce the risk of contracting zoonoses. As well as taking these steps, make sure, if you are an employer, that staff understand the importance of taking the precautions, and check that they do so.

When producing safe working practices for your activities, consider the following:

Personal protective equipment (PPE)

Your COSHH assessment will inform your decision on whether PPE is needed. Remember that you should only consider using PPE after you have considered other steps such as not doing the task or using controls such as avoiding contact with infected animals. Make sure that whatever PPE you use is suitable, properly maintained, cleaned after use, stored in a clean area and that new PPE is CE marked.

Personal hygiene

The nature of your work with animals means that you will inevitably contact dung and urine, which contain disease-causing organisms. Personal hygiene is therefore vitally important. If you are an employer, provide washing facilities where staff work with animals (at least, clean running water and paper towels). Make sure that you and your staff:

- wash cuts and grazes immediately with soap and running water and cover the wound with a waterproof dressing - some organisms enter the body through open wounds;
- consider whether you or your staff need first-aid training;
- cover existing cuts and abrasions on exposed skin with waterproof dressings before beginning work;
- whenever you contact animals, or work in areas in which they may have defecated, make sure you wash your hands and arms before you eat, drink or smoke.

Badgers and bovine tuberculosis

Bovine TB is carried by cattle, badgers and deer, and can be passed to humans. People handling infected animals are at risk, especially if they become contaminated with mucus from the respiratory tract and then do not follow the basic rules of good personal hygiene. Although many people will have been immunised against TB in childhood (the 'BCG' immunisation) they may still be at risk. If you are in an area where infection in badgers is common, consider whether you should contact your GP to check your immunisation status. Do not rely on the BCG immunisation to prevent infection - always follow good practice.

Diagnostic, post-mortem, and research laboratory work with the organism are key risk areas. It is important that you follow the guidance in this document and get the correct professionals to perform this work. These professionals will follow the agreed safe systems of work for these activities. Other areas of work where there may be contact with the organism include veterinarians who perform TB testing and those involved in carrying out badger culling or trapping for study purposes. It is important that all the risks to health and safety from such activities are assessed and suitable controls put in place.

Useful further reading

1) The Control of Substances hazardous to Health Regulations – Approved Code of Practice (HSE Books – 01787 881165).

2) HSE information sheet – Common zoonoses in agriculture. See HSE website for details (www.hse.gov.uk/pubns/agindex.htm).

3) HSE information sheet – Avoiding ill health at open farms – Advice to farmers. (www.hse.gov.uk/pubns/agindex.htm).

Annex B

Forms

Specimen copies of rehabilitation record forms

PATIENT DETAILS

Log No:	Admission date:	Species:
Age:	Sex:	RSPCA Log No:
Finder's Name:		
Finder's Address:		
	Post code:	
Phone number:		
Exact area found:		
Reason for admission		
Treatment prior to admission		
Condition		
Diet		
Veterinary advice & supervisor comments		
ID Number:		
End Result:		

Form 1: Admission record

Species **Area Found**

Date

Reason for admission

Age **Sex** **Identification**

Date	Weight	Time & Amount of Feed							Daily TL	Comments

Form 2: Feeding record sheet

Pen/cage No:			Species:			Log number(s):	
Sheet No:							
Date	Weight	Time Feed & Content	Amount Taken	Urine	Faeces	Medication	Comments
		AM:					
		PM:					
		AM:					
		PM:					
		AM:					
		PM:					
		AM:					
		PM:					
		AM:					
		PM:					
		AM:					
		PM:					
		AM:					
		PM:					

Form 3: Care record