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Badgers & Development





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INTRODUCTION

>> The Badger (*Meles meles*) is one of our most popular and familiar mammals. However, as a consequence of their largely nocturnal habits, live Badgers are seldom seen, despite their reasonably good numbers and widespread distribution, which extends over most of Northern Ireland.

Badgers have long been persecuted in Britain and Ireland and this is the principal justification for their protection in law. However, Badgers and their setts are also threatened, incidentally, as a result of everyday legitimate activities such as the construction and use of roads, industry, new housing, forestry operations and agricultural practices. These activities are not necessarily incompatible with the continued presence of Badgers, provided the special needs of the animals are properly addressed and measures are taken to incorporate these requirements into planning proposals.

This booklet aims to provide developers and planners with an overview of the subject of Badgers, the implications of potential development and the current associated protective legislation. It provides a framework for ensuring that adequate measures are in place to protect Badgers from the possible consequences of development. It should not be regarded as a substitute for expert advice, which should always be sought from a Badger expert early in the planning process, if the presence of Badgers is likely to become an issue. In this way, potential conflicts can be promptly identified, resolved and costly delays can therefore be prevented.

BADGER BIOLOGY

IDENTIFICATION



Badgers are members of the Mustelidae family of carnivores, which also includes the Otter, Polecat, Mink, Ferret, Stoat, Weasel and Pine Marten. The Badger is the largest member of the family in Britain and Ireland. Badgers in Northern Ireland are generally smaller, weighing between 7.9 - 8.85kg and measuring between 62.5 – 71.5cm in length. Weight varies considerably according to gender, the time of year and food availability, with males being generally heavier than females.

The coat is predominantly grey, but the white-tipped guard hairs give the animals a somewhat 'grizzly' appearance. The Badger's most distinctive feature is its conspicuous black and white striped face.

Badgers are extremely strong animals with powerful forelegs and broad, spade-like forefeet, a set of adaptations that make them ideally-suited to a lifestyle in which digging plays an important part. They have an acute sense of smell and hearing.

DISTRIBUTION AND STATUS

Northern Ireland supports high densities of Badgers compared to the Republic of Ireland and the rest of Britain. Badgers occur in higher densities in the lowland areas defined by a hilly, drumlin landscape. There are no accurate figures for the total population in Northern Ireland, but it has been estimated to be around 38,000 individuals.





FIELD SIGNS



Badgers are generally nocturnal and evidence of their presence in an area often comes from field signs rather than sightings of the animals. Although the signs are characteristic and sometimes quite obvious, developers should always consult an expert capable of recognising and interpreting them, as early as possible, if the proposed development is likely to affect Badgers.

Useful field signs include:-

- tufts of hair caught on barbed wire fences
- conspicuous Badger paths
- footprints
- latrines - small excavated pits in which droppings are deposited
- 'snuffle holes' - small scrapes where Badgers have searched for insects and plant tubers
- day nests - bundles of grass and other vegetation where Badgers may sleep above ground
- scratch marks on trees (usually near the sett)



DIET AND FEEDING BEHAVIOUR

Although taxonomically classified as carnivores, Badgers are true omnivores. A large proportion of their diet consists of earthworms, but they are opportunistic foragers and will also feed on fruit, berries, small mammals, birds, carrion, insects and other invertebrates at various times of the year, often when earthworms are difficult to find.



In view of the importance of earthworms in their diet, Badgers commonly rely on grassland that is kept short by grazing or mowing and the loss of such feeding areas can have a major impact on the long-term viability of a social group. This is a very important consideration with respect to proposed developments.

BADGER SETTS

Badgers live in a network of underground tunnels known as a 'sett'. The tunnels can have a combined length of several hundred metres, and individual tunnels can exceed 20 metres in length. Incorporated within these tunnels are a number of widened sections and cul-de-sacs used as nesting and sleeping chambers. Bedding material such as dry grass, bracken and other suitable vegetation is brought in to line these chambers, thereby helping to conserve heat.

Large quantities of rocks and soil can be excavated while Badgers are digging and maintaining their setts. This piles up outside the entrance holes forming, characteristic and sometimes very distinctive spoil heaps. The entrance holes to the underground tunnels are typically a flattened arch shape around 20–30cm high by 25–35cm wide. It is worth noting that Badger setts may also be occupied by other species, notably Rabbits and Foxes, but also occasionally, Otters.

Habitat is the most significant factor in the distribution, site selection and sett size in Northern Ireland, compared to that of soils in the rest of Britain.

Due to the lack of woodland cover in Northern Ireland, the majority of setts are located in hedgerows, or amongst dense patches of gorse and scrub on banks close to fields. However, they also frequently excavate setts in disused railway cuttings or embankments, old quarries, open fields and even landfill sites. Natural cavities such as rock crevices are also used.

As a result of the physical limitations of hedgerows and scrubland, sett size in Northern Ireland is smaller than that in the rest of Britain, where the majority of setts are established within woodland. The abundance of mature hedgerows and smaller field patterns, providing increased cover, contributes to the higher densities of setts within the local area.



Hedgerow Sett



Cliff top Sett



Bedding Material being aired

Favoured sites are in ground that is dry and relatively easy to dig; sandy clay loam soils are preferred, due to drainage.

Most social groups of Badgers have a number of setts in their territory. Not all setts serve the same purpose and they can be categorised according to their use. It should be noted that the status of a sett could change over time, particularly if other setts have been disturbed or land use changes have fragmented or removed feeding opportunities. Each family group has a main sett which is the focus of activity and the place where the Badgers normally live throughout the year and raise their cubs. It is usually the largest and evidently most active sett within the territory and may have 1-38 entrances, although 6-7 is the average.

Another large sett is often found close to the main sett, known as an annex (1-14 entrances; average of 3-4). Although generally smaller than the main sett it can be very active particularly during the spring when it may also be used for breeding. Annex setts are not necessarily occupied throughout the year.

Other categories of sett include subsidiary setts (1–8 entrances; average 2-3) and smaller outlying setts (1 to 5 entrances; average 1-2). These may be found some distance away from the main sett and are not usually linked to it by any obvious paths. They may only be occupied on a seasonal basis.

SOCIAL BEHAVIOUR AND TERRITORIALITY

Badger groups are effectively extended families, the size of which is heavily dependent on the habitat type and the availability of food. Average group size in Northern Ireland is about 2–6 adults, although in upland areas they often live singly or in pairs.

They are highly territorial animals and the individuals within a family group co-operate to defend the territory. Latrines are used to mark the boundary of this area where a well-marked path may also be present; this is regularly 'patrolled', particularly by the males. During Badger surveys, individual territories can be mapped using a technique known as 'bait marking', which involves mixing harmless coloured marker pellets with food and then recovering them from the boundary latrines.

In areas of suitable habitat (i.e. with plenty of improved and semi-improved permanent pasture), the size of a territory in Northern Ireland is typically around 0.5– 3.46 km².

REPRODUCTION

Births can occur at any time from December to June, with the majority born between January and March. A Badger family group will usually produce only one litter per year, although exceptions to this are not unusual. The newly born cubs are about 150mm long, pink, blind and totally dependent on their mother. They open their eyes after about five weeks but stay below ground until they are 8–10 weeks old and are not fully independent until about July.



BADGERS AND THE LAW

Badgers are legally protected, being listed on Schedule 5 of the Wildlife (Northern Ireland) Order 1985*.



Article 10 of the Order makes it an offence to:

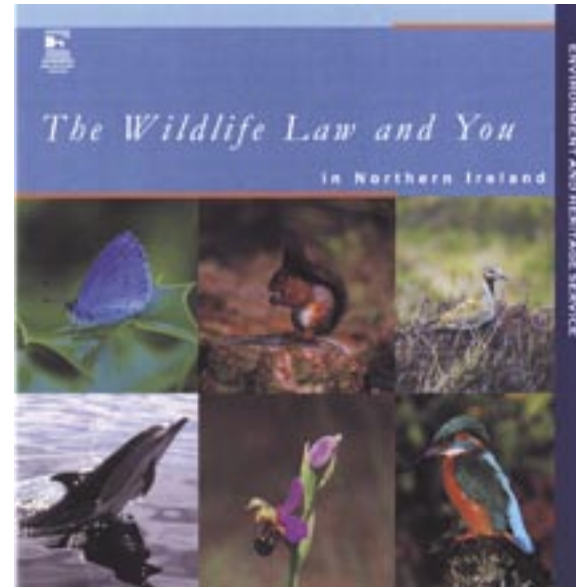
- Intentionally kill, injure, take or possess a Badger or attempt to do so.
- Damage, destroy or obstruct access to any structure or place which a Badger uses for shelter or protection;
- Damage or destroy anything which conceals or protects any such structure
- Disturb a Badger while it is occupying a structure or place which it uses for shelter or protection,

A person is not guilty of an offence if it can be shown that the act was 'the incidental result of a lawful operation and could not have been reasonably avoided'; only a court can decide what is 'reasonable' in any set of circumstances. In practice, a developer can avoid running into problems here if the procedure summarised on page 13 is followed.

Penalties for offences under this legislation can be a fine of up to £5,000 for each offence.

The Wildlife (Northern Ireland) Order 1985 gives legal protection to any structure or place which a Badger uses for shelter or protection. This can include culverts, pipes and holes under sheds, piles of boulders, old mines and quarries etc.

Badgers occupy setts intermittently; any unoccupied sett within a territory is still classified as 'in use' and therefore afforded the same legal protection.



LICENSING

The Wildlife (NI) Order 1985 provides for licences to be issued for certain activities, which would otherwise be prohibited. Environment and Heritage Service (EHS) is the authority responsible for issuing licences under the Order.

A licence must be obtained from the EHS Wildlife Officer for any work that may cause disturbance to a Badger or involves the damage or destruction of a sett. Licences are only issued to recognised Badger experts, whose role is to provide on-site advice and, where necessary, supervise all the licensed work. Should there be any uncertainty over the respective roles and responsibilities in this regard, the developer should contact the EHS Wildlife Officer for clarification.

Licensed activities may not take place during the breeding season, which is between 30th November and 1st July, and cannot be issued retrospectively. Activities which necessarily involve disturbance should therefore be programmed to take place outside this period.

Licences may only be implemented after full planning permission has been granted so that there is no conflict with the planning process.

BADGERS AND DEVELOPMENT

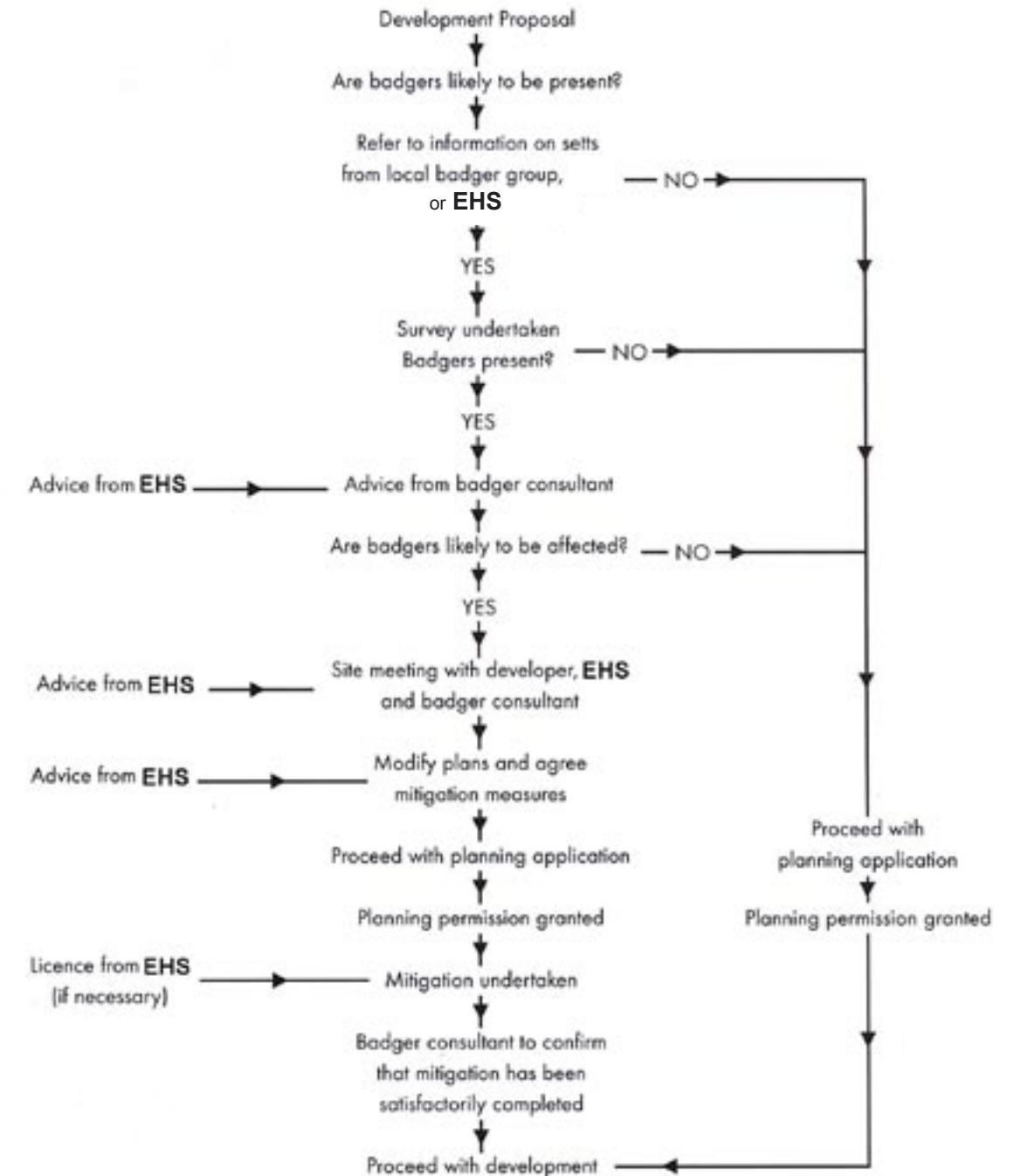
THE PLANNING SYSTEM



Developers should be aware that Planning Service are required to take account of protected species and habitat conservation when they consider planning applications. Planning Policy Statement 2 (PPS2) - Planning and Nature Conservation* outlines the criteria which Planning Service will employ when processing planning applications which might affect nature conservation interests and to which developers should have regard when preparing proposals.

Where protected species are present, Planning Service will consult EHS at the earliest possible stage. Where Badgers are present or likely to be present, the Planning Service may require a survey to be undertaken, paid for by the developer. The protection afforded by the Wildlife (NI) Order 1985 is additional to that offered by the planning system. The presence of a species protected under the Wildlife Order is material to the consideration of a development proposal, which if carried out would be likely to result in harm to the species or its habitat and, in particular, to places used for shelter or protection. Where necessary, Conditions may be stipulated in a planning permission to secure the protection of the species. Developers may also be advised that they must conform to any statutory species protection measures affecting the site concerned.

THE VARIOUS STAGES INVOLVED IN DEVELOPING LAND WHICH CONTAINS BADGER SETTS



POTENTIAL IMPACTS ON BADGER FEEDING AREAS

A development site may not contain a Badger sett, as such, but may be part of a group's territory and relied upon as an important feeding area. Badgers cannot simply be pushed from one area to another, so it is important to extend the initial survey beyond the boundary of the proposed development in order that an assessment can be made of the extent of the territory and productivity loss that may result. The territory is the minimum area capable of supporting the Badger family group. The loss of territory may lead to a reduction in group size, which could ultimately lead to its extinction.

The ideal objective is to ensure that the development will not result in the loss of setts and fully incorporates the Badgers' foraging needs, thereby enabling them to remain in the area and find sufficient food. Appropriate mitigating measures should, therefore, be included within each proposal to facilitate this.

MINIMISING DISTURBANCE TO BADGERS

Work that disturbs Badgers in their sett is illegal without a licence. Disturbance can occur even if there is no direct interference or damage to the sett. It is difficult to know what Badgers will find disturbing in each particular set of circumstances, and so for this reason, EHS advises that any work which is proposed within 25m of the closest sett entrance may require a licence and this can only be established by prior consultation and, if necessary, a site visit.

There are some activities that can cause disturbance at much greater distances (e.g. blasting or pile driving). While each case must be considered individually, it is generally recommended that such activities are avoided within 100

metres of the closest sett entrance. Other activities may also pose a temporary threat to Badgers or cause disturbance to them whilst they are in the sett. Therefore, some or all of the following may be added as conditions of a licence, as appropriate:

- the use of noisy plant and machinery in the vicinity of the protection zone (see page 16) should cease at least two hours before sunset.
- Security lighting should be directed away from setts.
- Chemicals should be stored as far away from the setts and Badger paths as possible.
- Trenches must be covered at the end of each working day, or include a means of escape for any animal falling in. (Badgers will continue to use established paths across a site even when construction work has started)
- Any temporarily exposed open pipe system should be capped in such a way as to prevent Badgers gaining access, as may happen when contractors are off-site.
- Badger gates may need to be installed in perimeter fencing; if so, expert advice should be sought.
- Water sources (for Badgers) should always be safeguarded.
- Trees should be felled away from setts and must not block Badger paths.



Reinforcing roof of Sett

SETT PROTECTION

Irrespective of whether or not a licence is required, where development is taking place in the general vicinity of an active sett and there is a risk of accidental damage or disturbance occurring, it is good practice to take the appropriate measures to protect the sett during the construction phase and, in some cases, thereafter. Protection zones serve two main purposes: in the short term, they protect the sett (including all the underground tunnels) from damage and the Badgers from disturbance while works are being carried out on the site. In the long-term, they ensure Badgers are not disturbed by general day-to-day activities resulting from the development once it is completed. In addition, they aid the developer by preventing construction machinery from falling into holes and tunnels.

The boundary of the protection zone should be at least 25 metres from the nearest sett entrance. Before any work starts on site, the protection zone should be clearly demarcated by using coloured tape or some other form of obvious visible marking. Scrub and vegetation should not be cleared from the sett area. All contractors and sub-contractors should be notified of the presence of Badgers and instructed to keep out of the protection zone.

Planting the protection zone with dense native shrubs such as Gorse, Blackthorn, Hawthorn, Holly and Elder can enhance the long-term protection of a sett. Furthermore, in some cases, for example housing developments, the creation of a 'buffer zone' of undeveloped land between the nearest gardens and the periphery of the protection zone will further enhance the security afforded to the Badgers. It will also reduce the possibility of conflicts arising between the new residents and the Badgers, as can sometimes happen if the latter continue to forage in areas, which have been transformed into gardens as a result of the development.

MITIGATION

It is the responsibility of the developer to demonstrate that their proposals will not have a detrimental impact on Badgers. This is likely to involve the implementation of appropriate mitigation measures to safeguard the animals, their setts and their foraging habitat.



LOSS OF FORAGING

If a significant proportion of a territory is to be lost to the development, and includes important feeding areas, it may be possible to enhance the foraging value of the remaining territory to compensate for any feeding areas lost. However, supplementary feeding with 'artificial' foodstuffs is not recommended as this can lead to the Badgers becoming largely dependent on humans. A better approach, provided it does not conflict with other natural heritage interests (such as the conservation of species-rich unimproved grassland), is to consider improving the quality of the remaining areas of grassland, through appropriate management, thereby increasing the abundance of earthworms. It is irresponsible to expect Badgers to replace lost foraging by feeding in gardens or other amenity areas. This will only lead to animosity from neighbouring landowners, many of whom will not welcome Badgers digging up their lawns, vegetable plots and flowerbeds.

WILDLIFE CORRIDORS

Badgers are creatures of habit and use well-established paths to travel between setts and feeding areas in their territory. The initial Badger survey should identify these paths, enabling the development to be planned in such a way that the Badgers have undeveloped corridors of suitable habitat to link with other setts and feeding areas outwith the site.

RELOCATING BADGERS: EXCLUSION AND THE PROVISION OF ARTIFICIAL SETTS

Every effort should be made to retain setts on the site, critically main setts. However, if the destruction of a sett is unavoidable, EHS can licence the exclusion of Badgers from the sett, followed by its immediate destruction. Exclusion can be humanely achieved by a combination of Badger-proof fencing and/or specially designed one-way gates that allow the Badgers out of the sett area, but prevent their re-entry. A licence will only be issued if there are alternative suitable setts available to the Badgers, within the same territory. If other suitable setts are not available, an artificial sett may be required, but this must be seen as the least preferred option with regard to the Badgers' interests. Artificial setts can be costly, time-consuming to construct and need careful advance planning; moreover, there are no guarantees that Badgers will use them. The site must be carefully selected in consultation with landowners and EHS and all work supervised by a Badger expert. The most successful artificial setts have been located less than 100 metres from the original natural sett and constructed at least six months before the Badgers are excluded, thereby giving them time to find and investigate the new sett.



Exclusion fence & Badger Gates

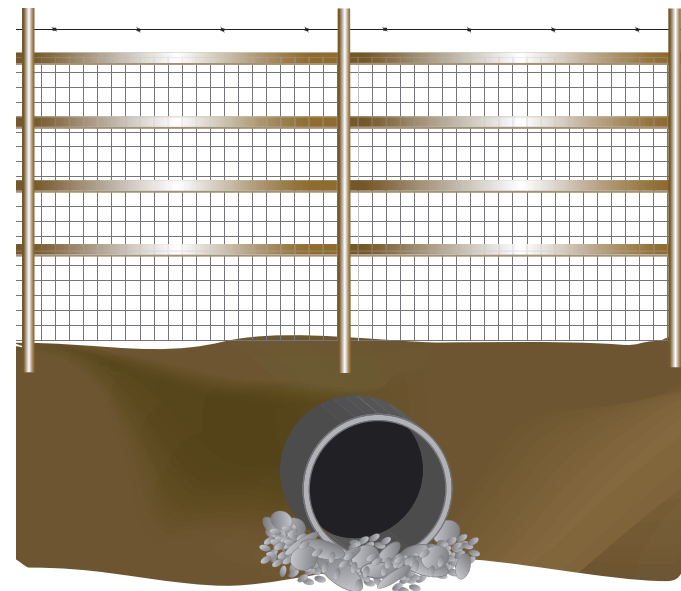
ROAD SAFETY

More Badgers die on roads than from any other cause. Badgers can be assisted to cross roads safely by the provision of purpose-built underpasses and Badger-proof fencing. It is important that such underpasses are located on or close to existing Badger paths.

When new roads are planned, the proposed measures to protect Badgers must be specified as early as possible during the design stage, thereby enabling tunnels and fencing to be fully integrated with features such as drainage, cuttings and embankments. The correct positioning and specification for these structures is essential, otherwise they will be ineffective and a waste of money. Many contractors are unaware of the very fine attention to detail which is required to make Badger fencing effective; junctions with minor roads and gates, in particular, can present a challenge to the fencing contractor and Badger specialist alike. Needless to say, if Badger fencing is required, the services of such a specialist will invariably be essential.



Illustration of a Badger Tunnel



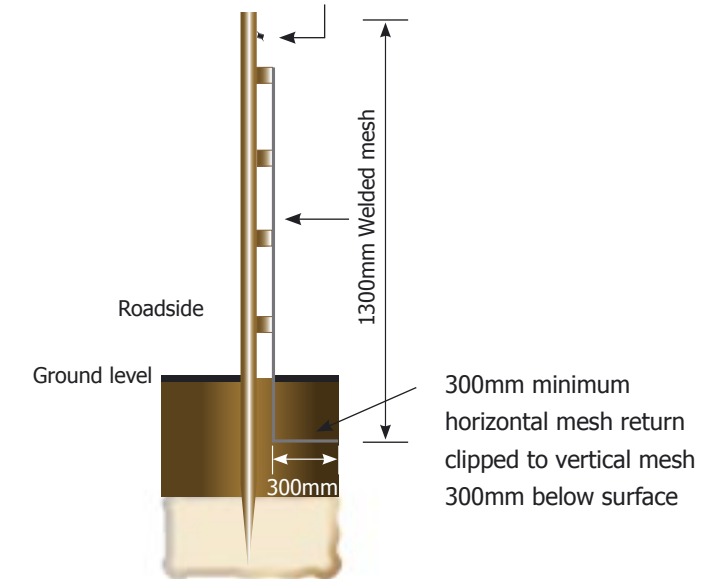
BADGER MESH FENCE SPECIFICATION

Max. mesh: 25mm x 50mm - gauge 2.50

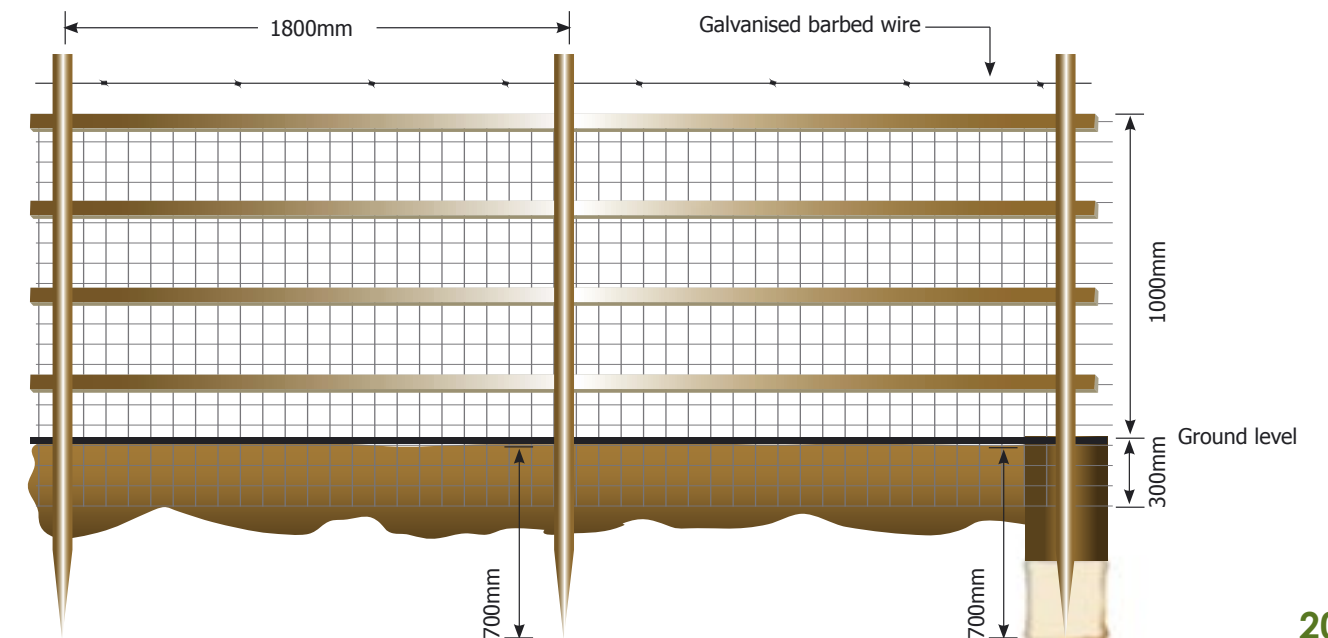
Minimum height above ground: 1000mm

Minimum depth below ground: 300mm plus a minimum 300mm horizontal mesh return.

The return will consist of a separate roll attached with special clips to the vertical mesh.



BADGER RESISTANT MESH ATTACHED TO A TIMBER & FOUR RAIL FENCE



Most roadside fencing is not actually Badger-proof. The fencing specification given on page 20 is considered to be the most effective at managing the movements of Badgers in the vicinity of roads.

The fence should be constructed of welded mesh of at least 2.5mm gauge, with a maximum mesh size of 25 x 50mm. It should be at least 1 metre high (above ground level) and extend below ground for at least 300mm with a separate 300-mm underground horizontal 'lap' attached to the base of the vertical section with clips (on the Badgers' side). Areas likely to be susceptible to a high frequency of Badger activity (where site or ground conditions constrain the preferred position and/or reduce the number of Badger tunnels) the fencing specification may need height and depth modifications and the inclusion of an additional overhang.

Dry stone walling, which is an ever-increasing feature on new motorways and road upgrades (mainly for aesthetic reasons) should not be regarded as a suitable barrier and where necessary should be designed to incorporate a suitable wire overhang.

Remember that all the necessary components of the mitigation works must be in place before the new or altered road is open to traffic!



Useful information sources:

Licensing:

The Wildlife Officer
Environment and Heritage Service
Commonwealth House
35 Castle Street
Belfast
BT1 1GU.
Tel: (028) 90546558
Website: www.ehsni.gov.uk/naturalheritage

The Mammal Society

2B Inworth Street
London
SW11 3EP
Tel: 020 7350 2200
E-mail: enquiries@mammal.org.uk
Website: www.abdn.ac.uk/mammal

The National Federation of Badger Groups (NFBG)

Cloisters Business Centre
8 Battersea Park Road
London
SW8 4BG
Tel: 020 7498 3220
E-mail: enquiries@nfbg.org.uk
Website: www.nfbg.org.uk

Ulster Wildlife Trust

3 New Line
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Tel: 01733 455 000
website: www.english-nature.org.uk

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* currently under review.