

Otters & Development

NIEA Northern Ireland
En
Agency
www.ni-environment.gov.uk



'This booklet provides basic advice for developers, planning officers and others that may come across otter issues related to planning. It provides an overview of the potential implications of development and the current protective legislation associated with otters. It also provides a framework for ensuring that adequate measures are put in place to protect otters from the possible consequences of development. However, the information provided in this booklet should not be considered a substitute for expert advice, which should always be sought from an otter expert as early as possible in the planning process.'



CONTENTS

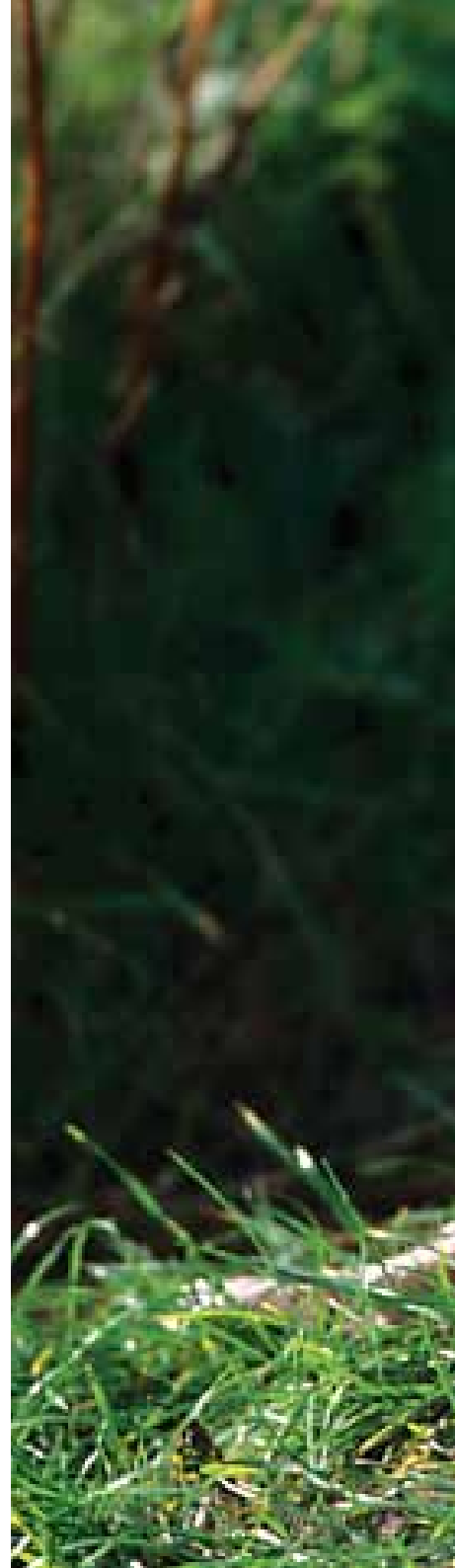
Introduction	6
Otter ecology and biology	9
Otters and the law	20
Otters and development	21
Mitigation	25
Useful information sources	33
References and further reading	34
Acknowledgements	34

INTRODUCTION

The otter (*Lutra lutra*) is a semi aquatic, shy and secretive mammal that is rarely seen, but does in fact have a widespread distribution in Northern Ireland.

In the 1930s otters were culled, as they were considered a pest on many fish farms across Europe. Populations rapidly declined in Europe in the 1960s due to pollution of water courses, lack of food, habitat loss and hunting for sport and the fur trade. Otters are no longer persecuted in Northern Ireland and recent survey information encouragingly shows a recovery in the population. However, they are still threatened by human disturbance, recreation, pollution, habitat loss, and as a consequence of development.

Development is not necessarily incompatible with the continued presence of otters, providing that mitigation measures are incorporated into planning proposals to ensure the protection of otters and their habitat.







OTTER ECOLOGY AND BIOLOGY

Distribution and status

There are 13 species of otter worldwide. The Common or Eurasian Otter (*Lutra lutra*) has the widest distribution and is the only species present in Northern Ireland. This booklet focuses only on this species.

Otters in Northern Ireland inhabit both freshwater rivers and lakes as well as coastal areas. Suitable surrounding habitat includes woodland, scrub, bogs, marshes and reed beds. Coastal dwelling otters must be close to a fresh water source to enable them to rid their fur of salt.

The 2010 Northern Ireland otter survey has shown that otter numbers have improved in recent years, with the greatest increase being in coastal areas. The survey found that otters occurred at 88.6% of sites surveyed. This is comparable to occurrence in 65.4% of sites assessed during the 2001/02 survey. Further details can be obtained from the NIEA Wildlife Team, or alternatively the full survey report is available on www.doeni.gov.uk/niea.

Identification

The otter is a member of the Mustelidae family, which also includes the badger, polecat, mink, ferret and stoat. The otter is the largest member of the family in Northern Ireland with adult males (dogs) measuring up to 1.2m in length, and weighing up to 10kg. Adult females (bitches) are slightly smaller, measuring up to 1m in length, and weighing up to 7kg.

Otters are dark brown in colour, with a lighter underside and throat. They are powerful creatures whose bodies have a high percentage of muscle and almost no fat. They have a broad muzzle, thick tapering tail, and webbed feet. They have a thick underfur which protects them from the cold. This underfur is covered by guard hairs which are approximately 4cm long.

Mink bear the closest resemblance to otter and also favour similar habitats. They can however be easily distinguished. Mink are much smaller than otters, smaller than an average cat, and are much darker in colour. They also have a pointed face and bushy tail.

Otters have a high mortality rate in their first year, and in the wild only have a life expectancy of 3-4 years, although when kept in captivity, they can live up to 15 years.



Field signs

Otters are shy creatures that are rarely seen. Their presence in an area is therefore usually determined by field signs. These signs are often difficult to recognise and a trained ecologist should always be consulted if a development may impact upon otters.

Field signs include:

- Sleeping and resting places including holts, couches and natal dens
- Breeding sites
- Spraints
- Pathways/trails
- Slides
- Hairs
- Footprints
- Food remains

Sleeping and resting places

Otters are very flexible in where they rest and sleep, sometimes using underground holts and other times using uncovered resting places above ground. Generally all sleeping and resting places are difficult to recognise, as otters tend to make use of existing features. It is therefore essential that a trained ecologist surveys the site for potential usage.

Holts

A holt is essentially a hole in the ground which is used by an otter for sleeping and resting.

The most common type of holt is a hole leading to a cavity under the roots of a bankside tree. However, otters are very versatile and can also form holts in log piles or cavities in rocky banks or caves. In some instances, although rare, holts can be a structure of tunnels resembling a badger sett. These have been identified in coastal areas on Shetland.

Most holts are situated on the river bank, but some can be up to 100 m away, particularly for otters who make use of the sea.



Couches

Couches are day time resting places for otters. They are above ground, and can be an uncovered nest like structure. Sometimes they are not as conspicuous as this and may simply be an area of flattened vegetation which does not appear to offer any protection from disturbance. An otter may bite the vegetation close to the base so that it forms a mat on the ground. Couches may be present in long grass or reed beds.

Natal dens

Female otters use natal dens which can be up to 1km from a waterbody, to give birth to cubs. They are usually similar in structure to holts, with an opening leading into a cavity. Where an underground enclosed site is not available, a female may have to give birth in a sub optimal den with less protection. When a female has made claim to a good underground enclosed natal den, she is likely to return to it with future litters. She will show less loyalty to an unprotected den above ground.

Woodland and scrub are particularly important habitats for natal dens, as they provide protection from disturbance. As well as choosing a protected area, the female must also ensure that the natal den is close to a good food supply, and away from areas of flooding.

Field signs for recognising a natal den can include:

- a heavily used path or paths from the water into dense cover or an enclosed structure
- bedding within the structure which may consist of grass, ferns or reeds (bedding may also be present in other types of resting places)
- a latrine containing a large number of spraints at the den or within 2m of it (this is not always the case – sometimes the female will excrete in the water to ensure that there are no signs of occupation near the natal den)
- a cub play area which may be a well worn area around a tree or on a bank
- different sized otter prints

The female usually only keeps the cubs in the natal den for the first few months, then moves them to a holt closer to the water. Keeping cubs a distance from the water protects them against attacks from adult otters. Females and cubs in natal dens are particularly sensitive to disturbance.





Breeding sites

A breeding site is an area of land or open water, large enough to provide security from disturbance, with one or more potential natal dens, play areas for cubs, access to a good food supply and an area where there is no risk of flooding.

Habitat types associated with breeding sites are:

- Extensive reed beds
- Ponds and lakes
- Deciduous woodlands
- Young conifer plantations
- Extensive areas of scrub

Breeding sites are very important for otter conservation. Proposals should take these sites into consideration, ultimately aiming to avoid them altogether.

Spraints

Spraints are otter faeces. They are one of the most obvious indications that an otter is using an area. When fresh they have a very characteristic sweet, but fishy smell, and fish bone fragments are often visible. They appear black and quite tarry and have jagged edges. When they are older and dry out they become grey in colour. Spraints are very small, generally only 1-2cm in size.

Otters can produce up to 15 spraints per day and tend to deposit them in obvious places such as on top of large boulders, on ledges under bridges, or on well defined trails to mark territory. A large number of spraints in a small area may indicate that a natal den is close by, although as previously mentioned, this is not always the case.



Pathways, slides and hairs

Well worn paths to water may indicate otter usage. If the pathway goes under a fence, hairs may have become trapped. An otter expert will be able to identify the species using the path if a hair is found.

A slide is a worn area down a bank that otters use for play and for access to a waterway. A well worn pathway leading to a slide is a clear field sign of otters using the site.

Footprints

Otters have five toes and webbed feet. Each toe has a claw, although these are not always seen in the print. An adult print is approximately 50-60mm wide.





Food remains

An otter usually eats its prey entirely. However, if food is plentiful, remains such as fish skeletons may be left behind.

Diet and feeding behaviour

Otters are versatile carnivores. Their main food source is fish, but other prey includes crayfish, frogs, crabs, birds and small mammals, such as rabbits. They are skilful hunters and are incredibly agile. Prey is usually consumed in its entirety unless food is very abundant. An otter's diet can change with the seasons and according to food availability. For example, frogs may make up a large part of their diet in early spring.



Social behaviour and territory

Otters are solitary animals with large territory ranges. A male otter's territory can be as large as 35km and a females can be 25km.

Females can live within a group territory, which is defended against other females. But even within this group the otters do not interact. Males are entirely solitary and only come into contact with females to mate.

A male's territory rarely crosses anothers, but usually overlap with two or more females.

Where a group of otters are seen together, it is undoubtedly a female with cubs.

Although otters rarely interact with each other, they do communicate. They do this with their spraints. The obvious places that they deposit them show other otters that they are in the area. Generally they are not an aggressive species, but males in particular can be if territories are crossed. It is thought that communication with spraints helps to maintain territories and therefore reduce conflict.

Survey work often relies heavily on spraint counting. Interpretation of spraint numbers should be viewed with caution, as research has shown that otters can spraint up to ten times more in the winter months.

Reproduction

There is no defined breeding season for otters. Litter sizes vary between one to four cubs, which are born blind and with only a very thin coat of hair. They are born in a natal den, which is often a significant distance from a water body, sometimes as far as 1km.

The mother stays with the cubs for about a year. This is significantly longer than most mammals. The period of lactation is unknown, but may be as long as eight months. The mother very seldomly leaves them, usually only going on one hunting trip per day. When they are about two months old she carries them one by one down to the water with her. From this point the otters stay in holts closer to the water. In times of food shortages it is not uncommon for a female to abandon one of the cubs, giving the others a better chance of survival.





OTTERS AND THE LAW

Otters in Northern Ireland are a **European Protected Species**, and are protected under **The Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 (as amended)** (also known as the Habitat Regulations), which transposes the Habitats Directive.

It is therefore an offence to deliberately capture, injure or kill an otter. It is also an offence to deliberately disturb an otter in any way, or to disturb, damage or destroy an otter's breeding site or resting place unless a licence has been obtained.

Licensing

A wildlife licence must be obtained from the Northern Ireland Environment Agency (NIEA) Wildlife Team for any works that may cause disturbance to otters (please note this includes invasive survey work) or involves the damage or destruction of a holt. Licences are only issued to recognised otter 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 NIEA Wildlife Team for clarification.

Licences for works that may cause disturbance to otters or involves the damage or destruction of a holt can only be issued after full planning permission has been granted so that there is no conflict with the planning process.



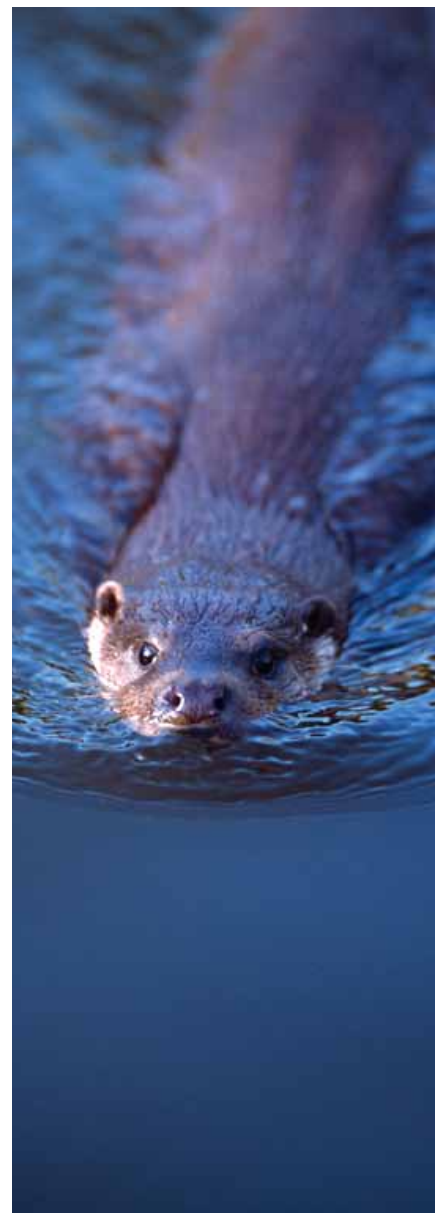
OTTERS AND DEVELOPMENT

The planning system

Developers should be aware that planning authorities are required to take account of protected species and habitat conservation when they consider planning applications. **Planning Policy Statement 2 (PPS 2) – Planning and Nature Conservation** outlines the criteria that planners 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, or are likely to be present, the planning authority will consult NIEA at the earliest possible stage. Where otters are present, or likely to be present, the planning authority may require a survey to be undertaken, depending on the potential impact the development may cause. The developer is responsible for the payment of all surveys requested by the planning authority.

Otters are protected under **The Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 (as amended)** and are subject to strict protection. Refer to **Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC (2007)**. The presence of a species protected under the Habitat Regulations 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 to places used for shelter or breeding. Where necessary, conditions may be stipulated in a planning permission to secure the protection of the species. Developers should also be advised that they must conform to any statutory species protection measures affecting the site concerned.



The various stages involved in proposed developments which may impact upon otters



* NIEA can provide advice at these stages

Potential impacts on otters from development

Development has the potential to cause disturbance to otters. More seriously than this it can cause pollution, fragmentation or loss of their habitat, which can ultimately result in the loss of the species in an area. The ideal objective is to ensure that proposed developments will not result in the loss of any holts and that it fully incorporates the otters foraging needs. Appropriate mitigation should therefore be included within proposals to facilitate this. Provided otters are considered fully in proposals for development, there is often no reason why the two should be incompatible.





MITIGATION

Mitigation refers to all works required to comply with legislation and minimise impacts on protected species when developing on sites where they are present.

It is the responsibility of the applicant/developer to demonstrate that their proposals will not have a detrimental impact on otters. This is likely to involve the implementation of appropriate mitigation measures to safeguard the animals, their holts and their foraging habitat. The NIEA Wildlife Team should be consulted for current advice and possible mitigation measures.

Otters are highly adaptable and depending on the type of development, can often live comfortably within its vicinity. If a minor development is proposed close to a watercourse that otters are simply using for foraging and commuting within their territory, then a well planted buffer may be sufficient to protect them from disturbance. If, on the other hand, an area is identified as a breeding site or has a natal den within it, the otters are much more vulnerable and sensitive to disturbance. In these instances significant mitigation measures will have to be put in place. If the measures are not deemed sufficient to protect otters on site, proposed development may be refused planning permission.

Protection zones

Otters are sensitive to development, and require their resting places to be protected from disturbance. Female otters with young are particularly sensitive. Protection zones should be conditioned as part of a planning approval.

- An otter holt or couch requires a 30m protection zone
- A natal den requires a 150m protection zone

The protection zones should always be clearly marked out before any construction activities commence. No works of any kind including clearance of vegetation and storage of materials can take place within the protection zones, unless a licence has been issued permitting such activities.

Buffer zones

Buffer zones to water-bodies are essential to protect otters from disturbance. NIEA, Natural Heritage recommends a minimum of a 10m buffer on both sides of a watercourse, where no works can take place. This is always recommended, even in the absence of otters, as a buffer protects the overall biodiversity value of a watercourse.

Vegetation cover

The best means of protection for otters is for development not to intrude on their habitat. The results of the survey will show the locations of well established trails that otters use time and time again to travel from land to water. If these areas can be avoided by development, otters are less likely to be disturbed.

The best habitat for holts is in dense vegetation that appears inaccessible. Additional planting on riverbanks can therefore provide cover that will protect otters from disturbance. Coppicing can provide dense coverage at ground level and help to protect holts.

Where recreation occurs or is proposed in and around water bodies where otters are present, ample vegetation is particularly important.

Artificial holts/breeding sites

In exceptional circumstances an application can be made to destroy a holt. The issue of a licence for this will only be considered by the NIEA Wildlife Team after all other options have been explored and there are no reasonable alternatives.

Where a holt needs to be destroyed and there are no alternative holts suitable for use within the otters' territory, then an artificial holt should be provided. Proposals for artificial holts must be approved by the NIEA Wildlife Team.

Artificial holts must be placed in an undisturbed area, free from flooding and close to a good food supply, as far away from roads as possible.





Artificial holts can be a structure of pipes that will create tunnels for the otter. It can be a living holt, which may involve the planting of fast growing trees such as willow, where the holt can be created in the root system. It may be as simple as a log pile with ample entrance points leading the otter to a cavity. The type of artificial holt required will depend on the type of natural holt which it is replacing.

To avoid a conflict of interest, artificial holts should not be created within 10km of a fish farm or stocked lake unless the owner agrees and an otter barrier can be put in place.

Construction phase

Otters are naturally inquisitive animals and are likely to investigate a construction site. Therefore during the construction phase it is essential that machinery which could harm them is made safe, or cordoned off with temporary fencing at the end of the working day.

All works should be restricted to daylight hours, so as to cause as little disturbance as possible to these largely nocturnal creatures.

Assessing development plans

The results of the otter survey should be taken into consideration before the final plans for development are put forward. It may be a practical option to amend plans so that otters are not put at risk thus negating the needs for mitigation works.

Road safety

Roads are the most hazardous type of development for otters and unfortunately many die each year in collisions with traffic. Not only do roads cause fatalities of otters, they can also cause the severance of territories, leading to increased competition within the population.

Although otters are good swimmers, swimming is not always the most efficient way for them to move around. This is particularly the case when moving upstream, or against a strong flow. They often prefer to leave the water and run along the bank. When proposals require a road to cross a river, otters must be provided with a safe means of avoiding the newly constructed road.

Roads following the coastline can be particularly dangerous for otters who rely on the sea. The road can act as a severance between the coast and their inland habitats which are frequently needed as this is where their fresh water source is located.

It is the applicant's responsibility to ensure that otters are protected when roads are improved or newly constructed.



Some general points to consider regarding otter safety include:

- a road should be kept on one side of the river
- habitat should not be severed
- river realignment should be avoided
- hardened margins should be kept to a minimum
- all factors should be considered before the final route of a road is chosen
- an otter expert must check the fencing and other mitigation measures, before a new road is opened
- fencing should be checked for damage every 6 months and repaired where necessary

Bridge and viaduct structures

Large bridge or viaduct structures are the most preferable in terms of otter protection, particularly if they span beyond the banks of the watercourse. This will allow vegetation to remain on the banks, providing otters with the option to use both the water and the bank to travel. When no bank will be left uncovered during the highest water level, a ledge must be provided (see page 30).

Culverts

Culverts are frequently used to facilitate development. Unfortunately they have many damaging effects on riparian ecosystems. They can lead to the removal of bankside vegetation, increase the speed of water through the structure, increase siltation and affect the river bed. All of these factors can damage fish populations, ultimately affecting otters.

The increased flow through the structure can make swimming very difficult. There have been instances where otters have drowned in flooded culverts. It is therefore essential that a ledge is provided. If this is not possible, a dry underpass must be installed (see page 30).

Culverts are a poor option in terms of otter conservation and should be avoided where possible. If a culvert is the only practicable option, a box type should be considered before a cylindrical one. Box culverts which are larger than required for engineering purposes can avoid the problems outlined above. The base should be at least 150mm below the river bed, which will reform over time (Highways Agency, 1999).



Dry underpasses

Dry underpasses are pipes or tunnels which should be constructed when ledges are not a practicable option. They should be a maximum of 50m from the riverbank and located close to the road, so that otters associate the underpass with a means of crossing the road. Paths or fencing should be used to guide the otter to the underpass. It is preferable that underpasses are situated in line with natural paths.

The underpass should be 600mm in diameter when under 20m in length, and 900mm in diameter when over this length (Highways Agency, 1999). Light should always be able to be seen at the end of the tunnel (it must therefore be straight). Therefore, the larger the diameter of the tunnel the better. Where very long stretches of underpass are proposed, large bridge structures with otter ledges should be considered as a better alternative.

Ledges

Ledges should be used on all bridge structures where an otter cannot access a dry bank during the highest water level, and in all culvert structures. Ledges should be installed at least 150mm above the highest water level, and still allow 600mm head room above. Ledges should be 500mm wide (Highways Agency, 1999). Ramps must be provided to allow an otter access to the ledge.

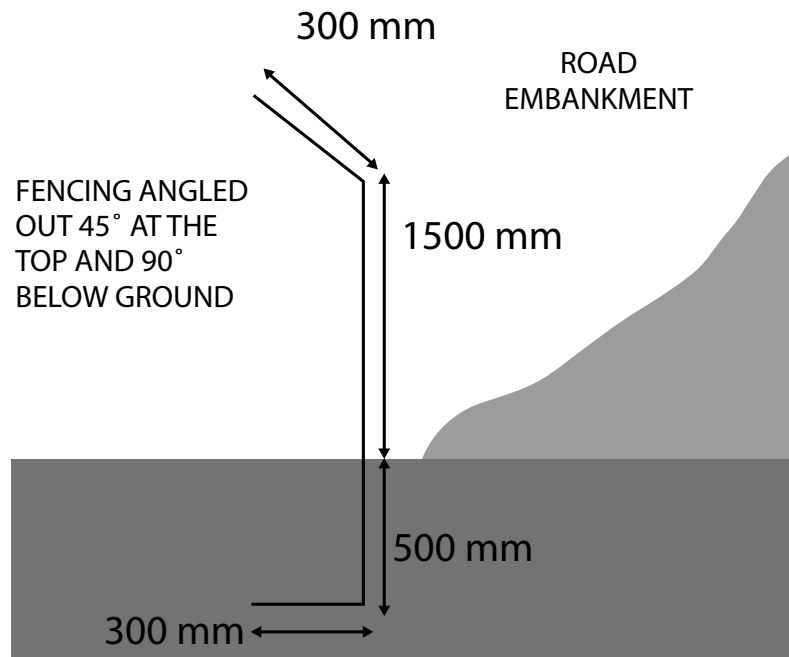
Otter proof fencing

Otter proof fencing should be used in all cases where otters are present close to the development of a road. Its purpose is essentially to keep otters off roads and to guide them to a safe crossing point (such as a dry underpass).

The most effective fence is a 50mm mesh buried underground and with an overhang above ground. This prevents otters from excavating below the fence and climbing over the top of it. Fencing should be provided for at least 100m either side of the watercourse and on both sides of the road. All gates and stiles should also incorporate otter proof fencing. It is recommended that all fencing should be checked every 6 months after its initial instalment.



Otter proof fencing *(Highways Agency, 1999)*



Hydropower schemes

Changes in natural water fluctuations, reduced food supply and reduced vegetation cover negatively affect otters. Therefore if any of these outcomes are likely from the development of a hydropower scheme, then otters need to be seriously considered in the proposals.

A scheme that will require the damming of water could be potentially harmful to otters if holts are present in the vicinity. All holts require a protection zone. If water levels are deliberately raised then their protection will be compromised.

Any obstacles, such as a weir or turbine added into a watercourse could potentially deter an otter from using a stretch of water, particularly if the flow is dramatically increased. Steps should therefore be provided over the obstacle, or a ledge constructed around it, allowing the otter easy access to the next stretch of water.



USEFUL INFORMATION SOURCES

Northern Ireland Environment Agency

The Wildlife Team
Klondyke Building, Cromac Avenue, Gasworks Business Park
Lower Ormeau Road,
Belfast BT7 2JA
Tel: 02890 569602
Website: www.doeni.gov.uk/niea

Natural England

1 East Parade
Sheffield S1 2ET
Tel: 0300 060 6000
Website: www.naturalengland.org.uk

The Mammal Society

3 The Carronades
New Road
Southampton SO14 0AA
Tel: 023 8023 7874
Website: www.mammal.org.uk

Scottish Natural Heritage

Great Glen House
Leachkin Road
Inverness IV3 8NW
Tel: 01463 725000
Website: www.snh.gov.uk

Ulster Wildlife Trust

Ulster Wildlife Centre
3 New Line
Crossgar, Downpatrick
County Down BT30 9EP
Tel: 028 4483 0282
Website: www.ulsterwildlifetrust.org

REFERENCES AND FURTHER READING

Anon (2008) Northern Ireland Species Action Plan: Otter. Environment and Heritage Service

Chanin, P (2000). Ecology of the European Otter. Conserving Natura 2000 Rivers. Ecology Series No. 10. English Nature, Peterborough

Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 (as amended)

Highways Agency (1999) Design Manual for roads and bridges. Volume 10 Environmental Design: Section 1, Part 9

Kruuk, H (2006). Otters, Ecology, Behaviour and Conservation. Oxford University Press

Liles, G (2003). Otter Breeding Sites. Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough

Planning Policy Statement 2 (PPS2) Planning and Nature Conservation. Department of the Environment

Preston, S.J; Prodohl, P; Portig, A; Montgomery, I (2004). Reassessing Otter Distribution in Northern Ireland

Preston, S.J; Reid, N (2010) Northern Ireland Otter Survey 2010. Report prepared by the Natural Heritage Research Partnership, Quercus, Queen's University Belfast for the Northern Ireland Environment Agency. NIEA Research and Development Series No. 11/06

ACKNOWLEDGEMENTS

Photography by Laurie Campbell, Eleanor Ballard (White Young Green), Jane Preston (ATEC), John Doherty, Seán McCourt

Compiled by Lisa Maddox (NIEA, Natural Heritage)

Designed by Emma Mackie (NIEA, Design Studio)

Technical Editor Declan Looney (NIEA, Biodiversity Unit)





Northern Ireland Environment Agency
Klondyke Building
Cromac Avenue
Gasworks Business Park
Belfast BT7 2JA
T. 0845 302 0008

www.doeni.gov.uk/niea

Our aim is to protect, conserve and promote
the natural environment and built heritage for
the benefit of present and future generations.



www.
i .

