

River Calder, Lochwinnoch
Ecological Assessment
Report prepared for LEAP

1. Introduction

A number of ecological surveys were carried out on a section of the River Calder, Lochwinnoch. The purpose of the survey was to make an ecological assessment of this site to determine the impact on the ecology from the construction of a small hydro scheme.

2. Location

The survey site is located in the Bridgend area of the River Calder on the edge of the village of Lochwinnoch. A central grid reference for the site is NS 34858 59387.

3. Legislation

3.1 A number of habitats and species are protected at the European level by **The Conservation (Natural Habitats, &c) Regulations 2004 (as amended in Scotland)**. This is commonly referred to as the "Habitats Regulations" and transcribed into Scottish law 'Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora'. Part II of the Habitats Regulations concerns the designation and protection of Special Areas of Conservation (SACs), which are selected to protect certain habitats or species, which are important in Europe. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs) which are classified under Council Directive 79/409/EEC on the **Conservation of Wild Birds (the Birds Directive)**. These sites form a network termed Natura 2000.

For plant species listed on Schedule 4, it is an offence to deliberately or recklessly pick, collect, cut, uproot or destroy any such plant. This offence applies to all stages of their biological cycle.

The Wildlife and Countryside Act 1981 (as amended) remains one of the main pieces of legislation relating to wildlife protection in Scotland. Part 1 of the Act details a large number of offences in relation to the killing and taking of wild birds, other animals and plants, according to their listing on a number of Schedules. Protected animals are listed on Schedule 5 and plants on Schedule 8. It is also an offence under this Act to cause the spread of non-native invasive plant species, which are listed on Schedule 9. All birds are protected during the nesting season, with some species listed on Schedule 1 gaining additional protection from disturbance.

The following provides a summary of the offences relating to animals listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

It is an offence to intentionally or recklessly:

Kill, injure or take an animal listed on Schedule 5;

Damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection;

Disturb an animal when it is occupying a structure or place for that purpose;

Possess or control, sell, offer for sale or possess or transport for the purpose of sale any live or dead animal or any derivative of such an animal.

Knowingly causing or permitting any of the above acts to be carried out is also an offence.

Species listed on Schedule 5 include water vole and red squirrel.

The Nature Conservation (Scotland) Act 2004 makes a number of amendments to the Wildlife and Countryside Act 1981, strengthening the legal protection for species and introducing 'reckless' acts to the offences. It also imposes a duty on every public body to further the conservation of biodiversity and to publish lists of species of flora and fauna and habitats of principal importance.

The Protection of Badgers Act 1992 protects badgers and their setts and makes it an offence to:

Wilfully kill, injure, take or attempt to kill a badger;

Wilfully or recklessly damage, destroy or obstruct access to a sett or any entrance of a sett;

Wilfully or recklessly disturb a badger whilst it is in a sett.

Additional offences relate to cruelty; digging; dogs entering setts, possession and sale and marking.

Section 33 of the **Wildlife and Natural Environment (Scotland) Act 2011** amends the Protection of Badgers Act 1992 by creating a new offence of knowingly causing or permitting offences under that Act.

Part 5 Section 36 amends the Nature Conservation (Scotland) Act 2004 by inserting a new Section into that Act, which requires those public bodies subject to the biodiversity duty to prepare and publish reports on compliance with that duty every 3 years.

All native reptiles in Scotland are protected under the Wildlife and Countryside Act (1981, as amended) and the Nature Conservation (Scotland) Act (2004) against intentional or reckless killing, injury and sale (or advertising for sale). In 2011, both of these Acts were amended by the Wildlife and Natural Environment (Scotland) Act ("WANE Act"). Section 18(2)(a) and (b) of the WANE Act insert a new licensable purpose into section 16 of the Wildlife and Countryside Act. The effect is that Scottish Ministers can licence disturbance to reptiles for over-riding reasons of social, economic and environmental reasons provided there is no satisfactory alternative. The power to grant licences has been granted to SNH.

Part III of the Regulations concerns the strict protection of certain animal species through inclusion on Schedule 2, and plant species through inclusion on Schedule 4.

Further details of legislation pertaining to species recorded on site are given in Appendix I.

3.2 Designations

There are no statutory designations for the site.

4. Methodology

4.1 The following field surveys were carried out:

Protected Species: Otter *Lutra lutra*, Water Vole *Arvicola amphibius*, Badger *Meles meles*, bats and reptiles mainly Common Lizard *Zootoca vivipara*.

These were carried out by experienced surveyors, Joe Greenlees and Richard Graham (mammals and reptiles), Jamie Manners (bats) and Davy Galbraith (additional habitat survey). The report and ecological assessment written by Liz Parsons and Davy Galbraith of Starling Learning.

The surveys for Otter, Water Vole, Badger and habitats were carried out on the 15th of August 2013, and the bats were surveyed on the 16th of August 2013. Details of the methodologies used are outlined below.

4.2 Protected Species

4.2.1 Badger

A Badger survey was carried out over appropriate adjacent ground up to 50m from the riverbanks. The surveyor searched for all evidence of Badgers including setts, paths, latrines, faeces, snuffle holes, scratching posts, hair traces, foraging and digging signs and footprints.

4.2.2 Otter and Water Vole

The habitat was known to be suitable for Otters. The Calder was searched for a distance of 250m upstream and downstream of the development. All evidence of Otters was searched for; holts, lie ups, spraints, slides. All evidence was mapped and a GPS unit used to mark the locations.

4.2.3 Bats

A daytime visit was made to assess the habitat on the site for potential bat roosts and to plan a suitable route for an evening transect survey of possible foraging areas. The potential for bat roosts was assessed using the Bat Conservation Trust Tree Roost Category sheet 2012 (see Appendix II). All trees considered suitable are shown in Table 1 and on Figure 2.

The route of the evening bat transect followed the eastern bank of the river, crossed the bridge at Bridgend and continued up the western bank of the river. A Batbox Duet bat detector coupled to a Zoom H2 digital recorder was used throughout the transect for later computer analysis using the Batscan program and to provide an enduring record of the bat activity. The transect results are presented in Table 2.

4.2.4 Reptiles

As it was not considered particularly suitable for reptiles, only a visual search was carried out for reptiles.

4.3 Habitat survey

This was carried out separately by Ron Mould of Saoghal Beag. However further information relating to impact of the development was added by Davy Galbraith of Starling Learning.

4.4. Birds

This was carried out separately by Marco McGinty.

5. Results

5.1 Protected species

5.1.1 Badgers

No evidence of Badgers was recorded within 25m of the riverbank and the development. Badgers are known to be present in the area and evidence has been found of foraging Badgers in Lochwinnoch primary playground¹.

5.1.2 Otters

Evidence of Otters using the site was recorded and a small amount of old and recent spraint was found under a large sycamore NS 34875 59295. Anecdotal evidence indicated a holt near the road bridge but this was found to be incorrect. The Ash and Sycamore trees in this area of the Calder have roots structures that would give good cover for an otter but the surrounding substrate is made of loose gravels which are completely unsuitable for the formation of holts.

5.1.3 Water Voles

No evidence of Water voles was found. The steep nature of the site and fast flowing water would make this unsuitable for this species.

.4 Bats

The river habitat flanked by mature deciduous trees make this an attractive area for foraging bats. There is a known pipistrelle bat roost in the vicinity in a loft space of a house situated approximately 300m south of the site. Jamie Manners the bat surveyor has often visited this site to look for bats and has mainly recorded Soprano Pipistrelle *Pipistrellus pygmaeus* and very occasionally Common Pipistrelle *Pipistrellus pipistrellus*. There are several mature deciduous trees adjacent to the actual site of the hydro scheme. It is likely that several will

¹ Starling Learning recorded evidence of foraging Badgers whilst working in Lochwinnoch Primary School in 2012.

need to be removed in order that the hydro scheme can be accommodated. Their suitability as potential bat roost sites were checked and details are given in Table 1 below.

Table 1. Bat roost potential survey, River Calder 2013

Tree Species	No. on map	Grid reference	Bat roost details	Category
Wych Elm	1	NS 34886 59432	Mature tree at side of road, cracks and fissures	1
Dead elm	2	NS 34881 59425	Dead tree with holes, cracks and fissures	1
Sycamore	3	NS 34882 59428	Mature tree at side of river with cracks and ivy	1

Table 2 below details the timings and results of the evening bat transect. The weather conditions were dry, calm and ranged from 14°C to 10°C. The time of the survey was 21.40 until 23.10 hours. The only species of bat recorded on the evening of the survey was Soprano Pipistrelle. No roost was located.

Table 2. Bat survey River Calder 2013

Time (hours)	Listening point	Number of bat passes	Species	Activity
21.50	1	8	Pipistrellus pygmaeus	Foraging
22.10	2	16	Pipistrellus pygmaeus	Foraging
22.40	3	15	Pipistrellus pygmaeus	Foraging

5.5 Reptiles

Common Lizard records are known from further upstream on the edge of the Calder. However this is within the Muirshiel Country Park area in more suitable habitat. No reptiles were recorded during the survey.

5.6 Incidental Records of Other Species

A number of other notable species were recorded during surveys on the site. These included:

- Roe Deer *Capreolus capreolus* evidence (dung and tracks) were seen during survey.
- Fox *Vulpes vulpes*. Fox scats recorded.

6. Ecological Assessment and Minimising Impact of Development

6.1 The development of the hydro scheme on the Calder has the potential to affect the ecology in the following ways:

- The water level will increase on the upstream side of the development leading to flooding of protected structures such as holts and nests;
- Direct loss of habitat;
- Disturbance and displacement of species due to increased number of visitors to the site and noise from the development;

6.2 Effects on Protected Species

6.2.1 Otters

No protected Otter structure was located within the proposed development area. The lack of suitable holts or lying -up spots in this location makes it more important as a travelling route for Otters in the wider area. Otters are adaptable and they are unlikely to be displaced as a result of the hydro scheme. As the development also includes the construction of a fish ladder, the enhancement of the site for fish means a positive impact for Otters. Negative

impacts are considered to be insignificant. The most significant negative impact for Otters in Lochwinnoch continues to be the A760, from the Calder Bridge to Lochwinnoch train station. Since 1991 of the seven recorded adult otters killed on this road at least 4 have been adult females with cubs. Enhancement of the stretch of the Calder for Otters would be beneficial and the development could consider incorporating an artificial holt somewhere in the system.

.2 Bats

In order to construct the hydro scheme it is likely that it will be necessary to remove several mature deciduous trees. These are likely to include a mature Wych Elm *Ulmus glabra*, a dead elm and a mature Sycamore *Acer pseudoplatanus* with ivy *Hedera helix*. No roost was recorded however as these trees were recorded as having roost potential it will be necessary to carry out further roost surveys prior to construction.

Further bat surveys will be necessary prior to construction and it is recommended that roost surveys are carried out in spring and summer 2014 on any trees to be felled or lopped.

There is potential for disturbance and displacement to bat roosts, however the roost surveys will ascertain if roosts are present and discussions will take place with Scottish Natural Heritage regarding whether or not it will be possible to remove the trees. The development will not displace foraging bats. If no roosts are located it is likely that this development will have no significant impact on bats. The site can be enhanced by provision of bat boxes in the area.

.3 Birds

The rising water level has the potential to flood nests on the riverbank. The area 250m upstream has no suitable areas for Kingfishers *Alcedo atthis* nests (an Annex 1 species) and no Kingfishers are known to nest in the vicinity of the development historically. However Kingfishers have been known to nest elsewhere on the Calder. Other birds that the water level has the potential to flood include Dipper *Cinclus cinclus* and Grey Wagtail *Motacilla cinerea*. There is also the possibility of some nests of woodland bird species being flooded. However the River Calder is a spate river and rises quickly in heavy rainfall and there is often the risk to nests in this habitat. There is also the potential to disturb nests due to construction. However work will take place outside the breeding season (mid March to end of July) or the area will be checked for nests by a competent ornithologist immediately prior to work taking place. Species such as Dipper and Grey Wagtail will use nestboxes and these can be incorporated into part of the structure of the development or alternatively below the bridge.

It is considered that the impact of the development on bird populations will be of low magnitude and not significant.

.4 Habitats

There will be a very minimal loss of habitat. Despite the predicted rise in water level it is unlikely that there will be any loss of broad-leaved woodland. There will be some increase in submergence of the gravel beds on the riverbanks but this will lead to no loss of any plants of great conservation value e.g. *Valeriana pyrenaica*, *Impatiens glandulifera* and *Tolmiea menziesii*.

It is therefore considered that the impact of the development on habitats will be of a low magnitude and not insignificant.



Starling Learning



☎ (& Fax 01505 843849
starlinglearning@hotmail.co.uk

Appendix 1

Bats and Great Crested Newts

A summary of the offences relating to species listed on Schedule 2 of the Habitats Regulations are given below (bats). These offences relate to all life stages of the animal (i.e. egg, larval, adult).

It is an offence to deliberately or recklessly:

Capture, injure or kill such an animal;
Harass an animal or group of animals;
Disturb an animal while it is occupying a structure or place used for shelter or protection;
Disturb an animal while it is rearing or otherwise caring for its young;
Obstruct access to a breeding site or resting place, or otherwise deny the animal use of that place;
Disturb an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species;
Disturb an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
Disturb an animal while it is migrating or hibernating;
Damage or destroy a breeding site or resting place of such an animal (this does not need to be deliberate or reckless to constitute an offence and is irrespective of whether an animal is present at that time).
Species listed on Schedule 2 of relevance to this application include all British bat species and otters.

The Wildlife and Countryside Act 1981 (as amended) remains one of the main pieces of legislation relating to wildlife protection in Scotland. Part 1 of the Act details a large number of offences in relation to the killing and taking of wild birds, other animals and plants, according to their listing on a number of Schedules. Protected animals are listed on Schedule 5 and plants on Schedule 8. The following provides a summary of the offences relating to animals listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

It is an offence to intentionally or recklessly:
Kill, injure or take an animal listed on Schedule 5;
Damage, destroy or obstruct access to any structure or place which such an animal uses for shelter or protection;
Disturb an animal when it is occupying a structure or place for that purpose;
Possess or control, sell, offer for sale or possess or transport for the purpose of sale any live or dead animal or any derivative of such an animal.
Knowingly causing or permitting any of the above acts to be carried out is also an offence.

Species listed on Schedule 5 include water vole.

The Nature Conservation (Scotland) Act 2004 makes a number of amendments to the Wildlife and Countryside Act 1981, strengthening the legal protection for species and introducing 'reckless' acts to the offences. It also imposes a duty on every public body to further the conservation of biodiversity and to publish lists of species of flora and fauna and habitats of principal importance.

Badgers

Badgers are protected in Britain by the Protection of Badgers Act 1992. The purpose of this Act is to protect the animals from deliberate cruelty and from the incidental effects of lawful activities which could cause them harm. Under this legislation it is an offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or attempt to do so
- interfere with a sett by damaging or destroying it
- obstruct access to, or any entrance of, a Badger sett

- disturb a Badger when it is occupying a sett

Note that if any of the above resulted from a person being **reckless**, even if they had no intention of committing the offence, their action would still be considered an offence.

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 14 is followed.

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

A Badger sett is defined in the Act as '**any structure or place which displays signs indicating current use by a Badger**'. This can include culverts, pipes and holes under sheds, piles of boulders, old mines and quarries etc.

'Current use' does not simply mean 'current occupation' and for licensing purposes it is defined as '**any sett within an occupied Badger territory regardless of when it may have last been used**'. A sett therefore, in an occupied territory, is classified as in current use even if it is only used seasonally or occasionally by Badgers, and is afforded the same protection in law.

Additional offences relate to cruelty; digging; dogs entering setts, possession and sale and marking.

Section 33 of the **Wildlife and Natural Environment (Scotland) Act 2011** amends the Protection of Badgers Act 1992 by creating a new offence of knowingly causing or permitting offences under that Act.

Part 5 Section 36 amends the Nature Conservation (Scotland) Act 2004 by inserting a new Section into that Act, which requires those public bodies subject to the biodiversity duty to prepare and publish reports on compliance with that duty every 3 years.

The 1992 Act provides for licences to be issued for certain activities which would otherwise be prohibited. Scottish Natural Heritage (SNH) is the authority responsible for issuing licences under the Act for the purpose of development as defined under the Town and Country Planning (Scotland) Act 1972, now superseded by the Town and Country Planning (Scotland) Act 1997.

A licence must be obtained from SNH for any work that may cause disturbance to a Badger or involves the damage or destruction of a sett. Licences are generally, but not exclusively, issued to Badger experts, whose role is to provide on-site advice and, where necessary, supervise all the licensed work. In some cases, the licence may be issued directly to the developer, in which case the Badger expert would be named as their agent. To whom the licence is issued is dependent on the development, but also on what and who is involved in the necessary works. Should there be any uncertainty over the respective roles and responsibilities in this regard, the developer should contact SNH for clarification. Licences are not normally issued during the breeding season, which is between 30th November and 1st July, and cannot be issued retrospectively. Activities that necessarily involve disturbance should therefore be programmed to take place out with this period. Licences are usually only issued after full planning permission has been granted so that there is no conflict with the planning process.

Part 5 Section 36 amends the Nature Conservation (Scotland) Act 2004 by inserting a new Section into that Act, which requires those public bodies subject to the biodiversity duty to prepare and publish reports on compliance with that duty every 3 years.

Birds

The Wildlife and Countryside Act 1981 (with Nature Conservation (Scotland) 2004 Act amendments).

1. Subject to the provisions of this Part, if any person intentionally or recklessly –

- a) kills, injures or takes any wild bird;
- b) takes, damages or destroys or otherwise interferes with any wild bird while that nest is in use or being built; or
- (ba) at any other time takes, damages, destroys or otherwise interferes with any nest habitually used by any wild bird included in Schedule A1;
- (bb) obstructs or prevents any wild bird from using its nest

he shall be guilty of an offence.

Any person convicted of an offence under subsection (1) in respect of-

- a) bird included in Schedule 1, or any part of, or anything derived from such a bird;
- b) The nest of such a bird;
- c) an egg of such a bird or any part of such an egg

shall be liable to a special penalty

5. Subject to the provision of this Part, if any person intentionally or recklessly-

- disturbs any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
- disturbs dependant young of such a bird

he shall be guilty of an offence and subject to a special penalty

Under the Wildlife and Countryside Act 1981, Schedule 1 species are protected by special penalties at all times.

The EEC Birds Directive states that member states are required to undertake special conservation measures for **Annex I** species.

Lindas
 May 18, '12, 3:19 pm
 Added Text

APPENDIX II Assessment Categories of Trees for Bats

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgment on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. Consultant Ecologist is required	Avoid disturbance to trees where possible. Further dusk and dawn surveys to establish more accurately the presence, species, numbers and type of roost present, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features than category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgment on the potential use of suitable cavities, based on the habitat preferences of bats Consultant Ecologist is required.	Avoid disturbance to trees where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish more accurately the presence of bats, and if present, the species and numbers of bats and the type of roost, to inform the requirements for mitigation if felling is required	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats	None. Consultant Ecologist is unlikely to be required.	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation
Category 3 Trees with no potential to support bats	None. Consultant Ecologist is not required unless new evidence is found	None.	No mitigation for bats required.

Confidential Annex

This Confidential Annex contains sensitive information relating to Otter and should not be released into the public domain due to the risk of persecution of these species. The data are confidential, are submitted in terms of and incorporate the provisions of the Environmental Information Regulations 1992, remain the property of the person supplying the data and without the consent of that person cannot be disclosed to any individual or organisation.

Otter evidence, River Calder 2013

Otter evidence	Grid reference	Details

Figure 3. Confidential
Otter evidence, Cumbernauld 2013